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**From:** LIA04 Hoc  
**Sent:** Tuesday, March 22, 2011 2:22 PM  
**To:** LIA08 Hoc; LIA06 Hoc  
**Subject:** FW: URGENT REQUEST FOR INFORMATION FROM PMT  
**Attachments:** Radiation Detected in AZ.PDF; Radiation Detected in AZ\_DATA.PDF  
  
**Importance:** High

FYI!!

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**From:** Hoc, PMT12  
**Sent:** Tuesday, March 22, 2011 2:16 PM  
**To:** LIA04 Hoc  
**Subject:** FW: URGENT REQUEST FOR INFORMATION FROM PMT  
**Importance:** High

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**From:** Hoc, PMT12  
**Sent:** Tuesday, March 22, 2011 1:30 PM  
**To:** PMT03 Hoc  
**Cc:** Maier, Bill  
**Subject:** FW: URGENT REQUEST FOR INFORMATION FROM PMT  
**Importance:** High

Please close this action. I left a voice message with Bill Maier. If he has follow-up questions he will call us through the HOO.

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**From:** Milligan, Patricia  
**Sent:** Tuesday, March 22, 2011 1:26 PM  
**To:** Hoc, PMT12  
**Subject:** FW: URGENT REQUEST FOR INFORMATION FROM PMT  
**Importance:** High

Are we working an answer for this?

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**From:** Maier, Bill  
**Sent:** Tuesday, March 22, 2011 12:49 PM  
**To:** LIA04 Hoc; OST05 Hoc  
**Cc:** Howell, Linda; agodwin@azrra.gov; 'tmorales@azrra.gov'; Howell, Art; Milligan, Patricia  
**Subject:** URGENT REQUEST FOR INFORMATION FROM PMT  
**Importance:** High

I just got off the phone with Aubrey Godwin, Director of the Arizona Radiation Regulatory Agency (ARRA) and Arizona State Liaison Officer to the NRC.

Mr. Godwin is planning to issue a news release following up on the attached. Mr. Godwin was aware of Palo Verde's confirmed measurement(s), so the licensee is in communication with the State about its findings.

BBBB/ 130

One of the items Mr. Godwin needs to include in his follow-up news release is the air concentration of iodine that would prompt the recommendation, following the present Federal guidance, for persons to ingest potassium iodide. Mr. Godwin is asking for NRC input to check the calculated value which he proposes to include in his news release. That calculated value is

1000 picoCuries per cubic meter of air, or  $1000E-12$  microCuries per millileter of air

Mr. Godwin did not elaborate on what assumptions contributed to the derivation of that value, but he is asking for an independent calculation from the NRC that would confirm or deny the feasibility of the above value.

He asked that the answer to this request be expedited, if possible, because he informed me he has to issue this news release soon (a few hours).

Bill Maier  
Region 4



Counting time 6 hours.

All samples collected for 72 hours, pulled on Saturday March 19, 2011

Station #	Location	Iodine-131/pCi/M <sup>3</sup>	Error range	Lower Limit of Detection
7	Arlington School, 1 mile east of PVNGS	0.54	+/-0.023	0.026
14	So. Of Salome Hwy w of 371 Ave	0.26	+/-0.014	0.022
15	So. of Salome Hwy, just inside Water Reclamation Facility	0.13	+/-0.014	0.026
17	So. of 351 <sup>st</sup> Street on left side	0.69	+/-0.039	0.034
21	Elliot Road, across from Mesquite Energy Plant	0.54	+/-0.023	0.026
29	Wintersburg Rd, due west unit 2	0.62	+/-0.036	0.034
35	Off 411 <sup>th</sup> Ave and Osborn, next to fire station at end of road	0.51	+/-0.022	0.022
41	So 40 St, S of Broadway, Phoenix	0.24	+/-0.017	0.026



## **Insignificant Amounts of Radiation Detected by State Monitoring Equipment**

*Levels Pose No Health Threat; Amounts Many Times Less than Background Radiation Doses*

PHOENIX— Trace amounts of Iodine-131 radioactive material associated with releases from the Fukushima Daiichi Power Plant in Japan have been detected by Arizona Radiation Regulatory Agency (ARRA) instrumentation located west of the valley and in Phoenix.

“The average background radiation can range from 100-300 millirems per year, “according to Aubrey Godwin, Director of the Arizona Radiation Regulatory Agency. “The amount of additional radiation we are seeing in Arizona is less than **0.1** millirem. Such low concentrations of Iodine-131 do not pose a public health threat to Arizonans.”

ARRA expected to see a slight increase in detectable radiation as a result of the still unfolding emergency in Japan and due to the high sensitivity of monitoring equipment. The Arizona Department of Health Services (ADHS) maintains that the precautionary ingestion of potassium iodide (KI) is neither necessary nor prudent. Arizonans who take KI unnecessarily could place themselves in danger of negative side effects, including severe allergic reactions, abnormal heart rhythms and nausea.

ARRA monitors radiation levels in the state as a function of its oversight of the Radiation Measurements Laboratory. It continues to monitor levels of radiation from Japan in addition to its ongoing surveillance near Palo Verde Nuclear Generating Station west of Phoenix.

The Arizona Department of Agriculture and ARRA regularly test food produced in the state as part of the ongoing efforts to ensure a safe food supply. The sampling looks for several potential contaminants including radiation.

Readings from the ARRA Radiation Measurements Laboratory will be shared via the Arizona Emergency Information Network (AzEIN), [www.azein.gov](http://www.azein.gov), until the detectable affects of the Japan nuclear emergency naturally dissipate.

For more information on the emergency in Japan, including answers to some frequently asked questions, visit the AzEIN website or email questions to [azein@azdema.gov](mailto:azein@azdema.gov).

[Link to Arizona Radiation Regulatory Agency Data](#)

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**From:** PMT03 Hoc  
**Sent:** Tuesday, March 22, 2011 12:29 PM  
**To:** Riley (OCA), Timothy  
**Cc:** Hoc, PMT12  
**Subject:** FW: Information on emergency planning in the U.S.  
**Attachments:** Information on emergency planning in the US.docx

Forwarding the attachment per John Lubinski's (PMT Director) request.

Prosanta Chowdhury  
PMT Coordinator  
301-816-5407

BBB/131

### **Information on emergency planning in the U.S.**

- For domestic events, licensees are responsible for making protective action recommendations (PAR) based on plant conditions and/or dose projection, and emergency plans in place. The State then makes a protective action decision (PAD) to either use the licensee's PAR or to make their own decision. NRC monitors the PAR and the PAD.
- Each licensee has their own emergency procedures; however, most start with a 2-mile radius and 5-mile downwind evacuation. Some licensees recommend initial evacuation out to 10 miles, depending on plant conditions. Dose projections requiring PARs beyond 10 miles are provided to the States for PADs beyond 10 miles. Emergency planning zones are meant to be expanded, as necessary, depending on plant conditions. NRC believes this emergency preparedness basis is appropriate.
- In the US, the NRC has access to plant data via the ERDS network and can easily obtain plant data that may be used in RASCAL calculations to make evaluations of realistic protective actions. In addition, NRC has a detailed understanding of plant design for US plants and would not have to make assumptions, as was done for the Japanese plants and spent fuel pools.
- On March 16<sup>th</sup> the NRC recommended that American residents within 50 miles of the Fukushima reactors in Japan evacuate. This was based on extremely limited data from Japan that was used to develop two dose assessments using RASCAL. As discussed in the press release, this was based on system conditions for a hypothetical single reactor site (source terms were combined) and is not representative of an actual release.
- If these exact conditions occurred in the US, the State would have made a PAD and the NRC would have expected it to be similar to the PAR issued by NRC in this event. However, if this event were in the US, the NRC would have realistic data from the licensee and would not have to rely on hypothetical and overly conservative assumptions.

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**From:** LIA02 Hoc  
**Sent:** Tuesday, March 22, 2011 2:57 PM  
**To:** Hoc, PMT12; PMT03 Hoc  
**Cc:** Shaffer, Mark R  
**Subject:** FW: Fukushima

FYI – the IAEA is requesting our assistance. I'm going to provide him with a copy of NUREG 1465 because it's publicly available, but it would be extremely helpful if we could set up a call for him with the PMT tomorrow and perhaps share some additional information. I'm going to bring a hard copy of this email back to discuss.

Thank you,  
Jen Schwartzman

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**From:** Schwartzman, Jennifer  
**Sent:** Tuesday, March 22, 2011 2:55 PM  
**To:** LIA02 Hoc  
**Subject:** Fw: Fukushima

Sent from an NRC Blackberry

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**From:** M.Modro@iaea.org <M.Modro@iaea.org>  
**To:** Schwartzman, Jennifer  
**Cc:** ShafferMr@state.gov <ShafferMr@state.gov>  
**Sent:** Tue Mar 22 14:47:56 2011  
**Subject:** RE: Fukushima

Dear Jennifer, in general we are lacking analytical capabilities to assess the source term in the reactors. We have made some very rough assessment based on the radiation levels measurements. Also, the analytical reconstruction of the events in the reactors is of importance to us to develop understanding of the processes and events. For example we have made some assessment of the events in Unit 1 and our hand calculations indicate full core melt. We would be very grateful if NRC would help us in these two analytical areas.

If you would have information on severe accident management procedures for BWRs this would be useful to understand the decisions and actions at Fukushima.

Hope to hear from you soon,  
Best regards,  
Mike

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**From:** Jennifer.Schwartzman@nrc.gov [mailto:Jennifer.Schwartzman@nrc.gov]  
**Sent:** Tuesday, 22 March 2011 13:46  
**To:** MODRO, S. Michael  
**Cc:** 'ShafferMr@state.gov'  
**Subject:** Re: Fukushima

Dear Mike,

It is good to hear from you. Could you kindly give me a bit more specific detail about what sort of analytic support you are seeking? On which specific technical subjects? This will help me direct your request.

BBB/ 132

Best regards,  
Jennifer  
Sent from an NRC Blackberry

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**From:** M.Modro@iaea.org <M.Modro@iaea.org>  
**To:** Schwartzman, Jennifer  
**Cc:** ShafferMr@state.gov <ShafferMr@state.gov>  
**Sent:** Tue Mar 22 08:41:20 2011  
**Subject:** Fukushima

Dear Jennifer, Mark Shaffer of the US Mission suggested that I contact you regarding potential cooperation on Fukushima issues. Mission of my section and of the team we assembled is to establish technical assessment of the events . We are performing some limited analyses and we are collaborating with several external organizations and experts. However, in situations like the Fukushima event the IAEA relies very much on support from the Member States especially in analyses and other evaluations. I do hope that we can count on NRC support as well. Please let me know whether we could establish exchange information and perhaps have some analytical support from the NRC.

Best regards,  
Mike Modro

S. Michael Modro  
Acting Section Head  
Safety Assessment  
Division of Nuclear Installation Safety  
International Atomic Energy Agency  
email: [M.Modro@iaea.org](mailto:M.Modro@iaea.org)  
tel: +43 1 2600 21625

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**From:** ET02 Hoc  
**Sent:** Tuesday, March 22, 2011 10:11 PM  
**To:** RST12 Hoc; RST01 Hoc  
**Subject:** FW: Japan NRC Team: Fed Ex Tracking Number for Photos

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**From:** Webster, Jessica M (TDY/ECN) [mailto:TDYWebsterJM@state.gov]  
**Sent:** Tuesday, March 22, 2011 9:45 PM  
**To:** ET02 Hoc  
**Cc:** Foggie, Kirk  
**Subject:** Japan NRC Team: Fed Ex Tracking Number for Photos

One CD holding digital photos is being sent via Fed Ex International Priority Service from NRC team at U.S. Embassy Tokyo to NRC HQ Operation Officer.

Sending date: March 23, 2011

Fed Ex Tracking Number: 8695 5112 8163 (Form ID No 0417)

Signed, Jessica Webster for Kirk Foggie

This email is UNCLASSIFIED.

## Coyne, Kevin

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**From:** Coyne, Kevin  
**Sent:** Tuesday, March 22, 2011 11:55 AM  
**To:** Siu, Nathan  
**Subject:** FW: QUERY: Funding Needs for Japan Follow-up  
**Attachments:** Japan Lessons Learned.docx

**Importance:** High

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Fyi...

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**From:** Rini, Brett  
**Sent:** Monday, March 21, 2011 4:44 PM  
**To:** Case, Michael; Richards, Stuart; Coe, Doug; Coyne, Kevin; Scott, Michael; Gibson, Kathy; Elkins, Scott  
**Cc:** Sheron, Brian; Uhle, Jennifer; Valentin, Andrea; Grancorvitz, Teresa; Rivera-Lugo, Richard; Armstrong, Kenneth; Ibarra, Jose; Hudson, Daniel; RidsResPmdaMail Resource  
**Subject:** QUERY: Funding Needs for Japan Follow-up  
**Importance:** High

Division Directors,

We have received a quick turnaround OEDO request to estimate resources (\$ and FTE) required for a near term effort and longer term review related to the recent events in Japan. Brian brainstormed a list of possible research areas that I've listed below, and I will reach out to our customer offices to find out in what areas they anticipate asking us for help. Please review the list below, think about what areas of research you anticipate for your division, and estimate how much effort these projects will require.

- Spent fuel analyses – SFPs vs ISFSIs?
- Severe accident analyses
- Exceeding seismic design basis
- Response to aftershocks following a design or beyond-design basis earthquake
- Tsunami/storm surge impacts
- Protection from hurricane winds, tornadoes, etc.

Please send me your inputs by noon tomorrow, and I will review the list with Brian before responding to OEDO. We weren't given much time to reply, so a rough estimate is all that's required at this time. I appreciate your help during this time of significant competing priorities.

Thanks,

Brett

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**From:** Kasputys, Clare  
**Sent:** Monday, March 21, 2011 4:18 PM  
**To:** RidsNroOd Resource; RidsNrrOd Resource; RidsNsirOd Resource; RidsResOd Resource; RidsFsmeOd Resource; RidsNmssOd Resource; RidsOgcMailCenter Resource; RidsCsoMailCenter Resource; RidsRgn1MailCenter Resource; RidsRgn2MailCenter Resource; RidsRgn3MailCenter Resource; RidsRgn4MailCenter Resource; RidsOipMailCenter Resource  
**Cc:** RidsNrrPmda Resource; RidsNroPmda Resource; RidsNsirPmda Resource; RidsResPmdaMail Resource; RidsFsmePbpaFmb Resource; RidsNmssTa Resource; Golder, Jennifer; Smolik, George; Muessle, Mary; Andersen, James; Jacobs-Baynard, Elizabeth; Allwein, Russell; Peterson, Gordon; Peterson, Gordon; Virgilio, Martin; Virgilio, Martin; Weber,

Michael; Weber, Michael; Ash, Darren; Ash, Darren

**Subject:** Funding Needs for Japan Follow-up - Resent to provide Attachment

Resent to provide the Attachment

All,

The Chairman has requested for the NRC to conduct a Near-term (90 day effort) and a longer-term review (as discussed by Bill B at the Commission meeting today) of regulatory issues affecting U.S. operating reactors based on the events in Japan. The Chairman is interested in seeking supplemental funding to support our efforts for the above effort, in addition to NRC's costs associated with emergency response and technical experts sent to Japan. OCFO is preparing cost data associated with emergency response and technical support to Japan.

On Friday, the OCFO requested some initial estimates to support the reviews (see attached). At this time, we are requesting the offices to review these initial estimates and include some information concerning the work that is envisioned to support these reviews. Listed below are some initial thoughts about the scope of the near-term and long-term reviews. Also, consider what on-going efforts related to the development of our regulatory program could benefit with supplemental funding. For example, it was mentioned in the Commission meeting that NRC is currently working on GSI-199. Should funding be accelerated for this effort and others of this nature.

Near Term Review (90 day effort):

- Evaluate currently available technical and operational information from the Japan event to identify near-term (or immediate) operational or regulatory issues affecting U.S. operating reactors of all designs in areas such as protection against earthquakes, tsunami, flooding, hurricanes, station blackout and a degraded ability to restore power; severe accident mitigation and emergency preparedness
- Develop recommendations for generic communications, orders, changes to inspection procedures and licensing review guidance, etc.
- Possibly prepare a 30 day quick look report

Longer-Term Review (Following obtaining sufficient technical information from the Japan event)

- Evaluate all technical and policy issues related to the event to identify additional research, generic issues, changes to the reactor oversight process, rulemakings and adjustments to the regulatory framework that should be conducted by the NRC.
- Evaluate interagency issues such as emergency preparedness.
- Applicability of the lessons learned to non-operating reactor and non-reactor facilities.

It is recognized that the full scope of the reviews has yet to be determined or the size of the group that will be conducting the analysis. Therefore, we are looking only for rough cost estimates. You are requested to send the level of funding (dollars and FTE) that is anticipated that could be obligated in FY 2011 for both the near-term and long-term efforts. We are asking the business line leads to coordinate with supporting offices and submit a response by business line and by office. Please send your responses to me and Liz Jacobs-Baynard and copy Jennifer Golder and George Smolik, OCFO NLT than Noon on Tuesday.

If you have any questions, please let me know.

Thank you for your support.

## Japan Lessons Learned

### Near term and Long Term Reviews

FY 11 Supplemental Request (Assumes costs will be

Costs per Office to support near and long term reviews

- NRR \$5M and 5 FTE (per Mary Givviness/Jack Grobe)
- RES \$1M and 1 FTE (per Andrea Valentin/Jennifer Uhle)
- FSME \$500K and 1 FTE (per Terry Reis – Charlie Miller approved)
- NRO TBD
- NMSS TBD
- NSIR (outside of Ops Center response) - ???

**From:** LIA07 Hoc *MAN*  
**To:** LIA07 Hoc  
**Subject:** 0600 EDT (March 22, 2011) USNRC Earthquake/Tsunami Status Update  
**Date:** Tuesday, March 22, 2011 6:19:52 AM  
**Attachments:** NRC Status Update 3.22.11--0600 EDT.pdf

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Please find attached a 0600 EDT (March 22, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Jim

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

*BBB/125*

**Wagner, Katie**

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**From:** Wagner, Katie  
**Sent:** Tuesday, March 22, 2011 3:28 PM  
**To:** Bowlin, Elizabeth  
**Subject:** FW: NEW SOW for SNL to perform analysis and technical assistances related to Fukushima  
**Attachments:** SNL Fukushima & U.S. Reactors Assessment SOW.docx

Here it is ☺

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**From:** Lee, Richard  
**Sent:** Tuesday, March 22, 2011 2:56 PM  
**To:** Wagner, Katie  
**Subject:** NEW SOW for SNL to perform analysis and technical assistances related to Fukushima

Dear Katie:

Attached is the draft tasks for the said SOW that we were asked to prepare. You are the PM, and the PI at SNL is Randy Gauntt.

Besides you (and other administrative staff). Others who should be receiving the monthly reports are: Hossein Esmaili, Mike Salay, Jason Schaperow, and Charles Tinkler.

Please work with Sarah to have this in place very soon.

Thanks,  
Richard

BBB0 / 136

# Exemp. #4 - Internal Contracting

## Task 1: Fukushima Dai-ichi event analysis for station blackout

### 1.1 Fukushima Dai-ichi Reactor Assessment

Perform an evaluation of Fukushima Unit 1 to 4 SBO sequences. These sequences are long-term station blackout sequences with variations between reactors that have isolation condenser designs or turbine-driven RCIC designs. Analyses are needed to evaluate effect of initial loss of offsite power, shutdown and emergency generator operation followed by flooding induced site blackout with station battery depletion or interruption for battery replacement, accounting for duration of RCIC operation. Analyses are required to evaluate operator actions and for suppression pool saturation and extent of core damage, hydrogen generation, and fission product release expected. In addition, evaluation of steam, hydrogen and fission product release to reactor building for containment venting operations, and source term release to environment is required in order to validate best estimate models of broad class of US BWR fleet.

Estimated Level of effort: 100 staff-hours

Estimated Completion: 3 month from contract placement (subject to available of adequate information from Japan on the event)

### 1.2 Fukushima Dai-ichi Spent Fuel Pool Analysis

Perform accident analysis of spent fuel pool damage in Fukushima Unit 4 pool using fission product inventories available from GE or ORNL considering possible seismic damage and water loss that may have accelerated boildown and fuel damage. Evaluate releases from the pool accidents and compare to available data on dose rates and environmental releases, atmospheric transport, land contamination and health effects.

Estimated Level of effort: 40 staff-hours

Estimated Completion: 1 month from contract placement

## Task 2: U.S. reactors event analysis for station blackout

### 2.1 U.S. BWRs Assessment

Based on insights gained from Task 1.1, perform evaluation of select representative reactors in US fleet of BWR's, initially for Mark-1 containments (with/without isolation condenser design), Mark-2 containment, and subsequently for Mark-III designs that do not have SBO hydrogen controls in non-inerted containments.

Estimated Level of effort: 80 staff-hours

Estimated Completion: 1 month from contract placement

### 2.2 U.S. Spent Fuel Pools Assessment

Based on Task 1.2 project this understanding to the relatively more densely populated US fuel pools and evaluate potential source term implications of current pools considering various options for transferring fuel to dry storage. NRC PM approval is required to start this activity.

Estimated Level of effort: 40 staff-hours

Estimated Completion: 1 month from completion of Task 1.2

Task 3: Technical Assistance for Emergency Issues

**Before initiating any effort under this task, the contractor shall request approval by NRC project manager.** The contractor shall provide limited technical assistance for emergency issues within the scope of this task. Examples of potential emergency issues include offering technical assistance within the United States and abroad for facilities undergoing potentially severe reactor accidents, and evaluating potential accident sequences and doses for facilities undergoing potentially severe reactor accidents. The contractor shall document the work performed under this task in letter reports. When requested by PM, SNL shall attend meetings related to analyses (Task 1 and 2) and technical assistances provided herein.

Estimated Level of effort: 160 staff-hours.

Estimated Completion: 9 months from placement of contract

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**From:** PMT03 Hoc  
**Sent:** Tuesday, March 22, 2011 1:05 PM  
**To:** PMT09 Hoc  
**Subject:** Summary of 3-22-2011 phone call between PMT and NEI.docx  
**Attachments:** Summary of 3-22-2011 phone call between PMT and NEI.docx

Per your request.

Summary of phone call between PMT and NEI  
(March 22, 2011; 9:30AM – 9:48AM)

NEI Attendees:

Ellen Anderson ([exa@nei.org](mailto:exa@nei.org)) (leader)  
Jamie Mallon  
Graham Johnson  
Others (complete list to be emailed by NEI to [PMT12.hoc@nrc.gov](mailto:PMT12.hoc@nrc.gov))

NRC attendees:

John Lubinski  
Kathryn Brock  
Bruce Watson

In response to NEI's questions on the assumptions the NRC used for the two RASCAL dose assessments that accompanied the March 16, 2011 NRC press release, the PMT provided NEI the following:

The first assessment assumed release from Unit 2. It assumed an ex-vessel, unfiltered release from a totally failed containment, 100% fuel damage, and actual meteorological conditions during early morning hours. The low dispersion characteristics included low wind speeds, relatively stable air, and light precipitation. The assessment considered the conditions of the plant at the time and possible degrading conditions. The assumptions included total failure, sprays off, no removal mechanism (e.g., scrubbing), no mitigation by the operator. A ground level release was assumed with release duration of 16 hours.

The second assessment assumed 30% core damage at Units 2 and 3, and 100% fuel damage for the Unit 4 spent fuel pool. The Unit 4 spent fuel pool was assumed to include only a full core offload from the current outage. To account for the combined inventories of the three units sources (i.e., from Units 2 and 3 and Unit 4 spent fuel pool), the staff adjusted the reactor power level, fuel burnup and number of assemblies, and included that in one calculation. This resulted in 917 assemblies in the core. The assumptions included total failure, sprays off, no removal mechanism (e.g., scrubbing), no mitigation by the operator. The shutdown time was assumed to be 14:46 hours on March 11, 2011, and the core was assumed uncovered at 19:50 hours on March 16, 2011. This run was modeled as LOCA. In addition, the source term included two additional days of decay before release. For the multi-unit assessment, the increase decay time before release and the greater atmospheric dispersion significantly reduced the resultant dose estimates. The meteorological conditions for the second assessment also assumed actual conditions with light precipitation, calm wind (between 2 and 5 meters per second) conditions with occasional higher wind speeds (around 10 meters per second). A ground level release was assumed with a release duration used was 15 hours. For these atmospheric conditions, an average wind speed of 5 meters per second and stability class of "D" would seem a good assumption. Wind direction was primarily from the northwest (NW). The same assessment could easily be used with a wind shift to blow from the northeast (NE). Several other RASCAL runs were done to ensure initial PARs were still valid.

Although the dose projections for the first assessment are somewhat higher than the second assessment, the differences in the modeling assumptions did not affect the

overall conclusion that protective action guides would be exceeded beyond fifty miles. Both assessments are highly speculative, given the lack of actual (representative) site data.

NEI requested to have routine and periodic call to discuss and share with the NRC subsequent dose assessments, but the NRC did not believe that there was a reason for this, particularly due to limited resource and NRC's focus on the ongoing monitoring and assessment activities. NEI (Ellen Anderson) will email to [PMT12.hoc@nrc.gov](mailto:PMT12.hoc@nrc.gov) the names and organizations of the NEI attendees for the call.

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**From:** Hoc, PMT12  
**Sent:** Tuesday, March 22, 2011 8:10 PM  
**To:** Henderson, Pamela  
**Cc:** PMT03 Hoc  
**Subject:** RE: Summary of Sample Results at Nine Mile Point and Ginna

Pam

Don briefed the ET. Several questions were generated.

Is the licensee certain that the iodine did not result from licensed activities?  
Are other plants in Region I reporting similar conditions following the recent rains?  
Have you coordinated with Region III to see if their plants are reporting similar conditions?

OSTP is responsible for collecting radiation data within the US as a result of incident.  
The ET is considering mechanisms to disseminate information to licensees including voluntary reporting of data.

After you respond to the questions, PMT will engage the ET for further action.

Tim Harris  
PMT, PAAD

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

**From:** Henderson, Pamela  
**Sent:** Tuesday, March 22, 2011 2:33 PM  
**To:** Rogge, John; Dentel, Glenn  
**Cc:** Furia, Joseph; Hoc, PMT12; Bernardo, Robert  
**Subject:** RE: Summary of Sample Results at Nine Mile Point and Ginna

John,

My first question would be what are background readings normally at the plants (onsite) for I-131? Is the licensee taking these samples because of the incident in Japan?... or do they normally take samples of rainwater and screen for I-131?

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**From:** Rogge, John  
**Sent:** Tuesday, March 22, 2011 2:21 PM  
**To:** HOO Hoc  
**Cc:** Henderson, Pamela  
**Subject:** FW: Summary of Sample Results at Nine Mile Point and Ginna

Please forward this to the PMT. Pam Henderson discussed the NMP findings earlier in the day. Here is some data regarding the observation.

From: Dentel, Glenn

Sent: Tuesday, March 22, 2011 2:14 PM

To: Henderson, Pamela; Roberts, Darrell; Clifford, James; Wilson, Peter; Weerakkody, Sunil; Rogge, John

Cc: Patel, Amar; Dempsey, Douglas; Kolaczyk, Kenneth; Hunegs, Gordon; Casey, Lauren; Screnci, Diane; Sheehan, Neil;

McNamara, Nancy; Tifft, Doug; Pickett, Douglas; Bellamy, Ronald; Perry, Neil; Ibarrola, Sherlyn; Cronk, Kevin

Subject: Summary of Sample Results at Nine Mile Point and Ginna

The following environmental sample results were observed at Nine Mile Point and Ginna in upstate New York.

Date	Site	Location	Activity
March 21	Nine Mile Point	Unit 1 outfall	19.1 pCi/l
March 21	Nine Mile Point	Unit 2 outfall	8.6 pCi/l
March 21	Nine Mile Point	Oswego Co. Airport	approximately 10 pCi/l (offsite sample)

Confirmatory samples

March 22	Nine Mile Point	Unit 1 outfall	18 pCi/l
March 22	Nine Mile Point	Unit 2 outfall	10.3 pCi/l
March 22	Nine Mile Point	Oswego Co. Airport	9.7 pCi/l (offsite sample)
March 22	Ginna	Orchard area rainwater	26.8 pCi/l (owner control area)

The licensees are evaluating these results and potential source. No activities onsite likely to have caused the readings. Additional sampling is ongoing.

Glenn Dentel

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**From:** OST02 HOC  
**Sent:** Tuesday, March 22, 2011 2:31 PM  
**To:** PMT02 Hoc; PMT11 Hoc; Hoc, PMT12  
**Subject:** FW: Summary of Sample Results at Nine Mile Point and Ginna  
**Attachments:** image001.jpg

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**From:** HOO Hoc  
**Sent:** Tuesday, March 22, 2011 2:31 PM  
**To:** LIA07 Hoc; OST01 HOC; OST02 HOC; OST03 HOC  
**Subject:** FW: Summary of Sample Results at Nine Mile Point and Ginna

Headquarters Operations Officer  
U.S. Nuclear Regulatory Commission  
Phone: 301-816-5100  
Fax: 301-816-5151  
email: [hoo.hoc@nrc.gov](mailto:hoo.hoc@nrc.gov)  
secure e-mail: [hoo@nrc.sgov.gov](mailto:hoo@nrc.sgov.gov)



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**From:** Rogge, John  
**Sent:** Tuesday, March 22, 2011 2:22 PM  
**To:** HOO Hoc  
**Cc:** Henderson, Pamela  
**Subject:** FW: Summary of Sample Results at Nine Mile Point and Ginna

Please forward this to the PMT. Pam Henderson discussed the NMP findings earlier in the day. Here is some data regarding the observation.

---

**From:** Dentel, Glenn  
**Sent:** Tuesday, March 22, 2011 2:14 PM  
**To:** Henderson, Pamela; Roberts, Darrell; Clifford, James; Wilson, Peter; Weerakkody, Sunil; Rogge, John  
**Cc:** Patel, Amar; Dempsey, Douglas; Kolaczyk, Kenneth; Hunegs, Gordon; Casey, Lauren; Screnci, Diane; Sheehan, Neil; McNamara, Nancy; Tift, Doug; Pickett, Douglas; Bellamy, Ronald; Perry, Neil; Ibarrola, Sherlyn; Cronk, Kevin  
**Subject:** Summary of Sample Results at Nine Mile Point and Ginna

The following environmental sample results were observed at Nine Mile Point and Ginna in upstate New York.

<u>Date</u>	<u>Site</u>	<u>Location</u>	<u>Activity</u>
March 21	Nine Mile Point	Unit 1 outfall	19.1 pCi/l
March 21	Nine Mile Point	Unit 2 outfall	8.6 pCi/l
March 21	Nine Mile Point	Oswego Co. Airport	approximately 10 pCi/l (offsite sample)

Confirmatory samples

March 22	Nine Mile Point	Unit 1 outfall	18 pCi/l
March 22	Nine Mile Point	Unit 2 outfall	10.3 pCi/l
March 22	Nine Mile Point	Oswego Co. Airport	9.7 pCi/l (offsite sample)
March 22	Ginna	Orchard area rainwater	26.8 pCi/l (owner control area)

The licensees are evaluating these results and potential source. No activities onsite likely to have caused the readings. Additional sampling is ongoing.

Glenn Dentel

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**From:** LIA06 Hoc  
**Sent:** Tuesday, March 22, 2011 3:22 PM  
**To:** FOIA Response.hoc Resource  
**Subject:** FW: URGENT REQUEST FOR INFORMATION FROM PMT  
**Attachments:** Radiation Detected in AZ.PDF; Radiation Detected in AZ\_DATA.PDF  
  
**Importance:** High

Liaison Team Director  
U.S. Nuclear Regulatory Commission  
Operations Center

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**From:** LIA04 Hoc  
**Sent:** Tuesday, March 22, 2011 2:22 PM  
**To:** LIA08 Hoc; LIA06 Hoc  
**Subject:** FW: URGENT REQUEST FOR INFORMATION FROM PMT  
**Importance:** High

FYI!!

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**From:** Hoc, PMT12  
**Sent:** Tuesday, March 22, 2011 2:16 PM  
**To:** LIA04 Hoc  
**Subject:** FW: URGENT REQUEST FOR INFORMATION FROM PMT  
**Importance:** High

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**From:** Hoc, PMT12  
**Sent:** Tuesday, March 22, 2011 1:30 PM  
**To:** PMT03 Hoc  
**Cc:** Maier, Bill  
**Subject:** FW: URGENT REQUEST FOR INFORMATION FROM PMT  
**Importance:** High

Please close this action. I left a voice message with Bill Maier. If he has follow-up questions he will call us through the HOO.

---

**From:** Milligan, Patricia  
**Sent:** Tuesday, March 22, 2011 1:26 PM  
**To:** Hoc, PMT12  
**Subject:** FW: URGENT REQUEST FOR INFORMATION FROM PMT  
**Importance:** High

Are we working an answer for this?

BBBB / 140

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**From:** Maier, Bill  
**Sent:** Tuesday, March 22, 2011 12:49 PM  
**To:** LIA04 Hoc; OST05 Hoc  
**Cc:** Howell, Linda; agodwin@azrra.gov; 'tmorales@azrra.gov'; Howell, Art; Milligan, Patricia  
**Subject:** URGENT REQUEST FOR INFORMATION FROM PMT  
**Importance:** High

I just got off the phone with Aubrey Godwin, Director of the Arizona Radiation Regulatory Agency (ARRA) and Arizona State Liaison Officer to the NRC.

Mr. Godwin is planning to issue a news release following up on the attached. Mr. Godwin was aware of Palo Verde's confirmed measurement(s), so the licensee is in communication with the State about its findings.

One of the items Mr. Godwin needs to include in his follow-up news release is the air concentration of iodine that would prompt the recommendation, following the present Federal guidance, for persons to ingest potassium iodide. Mr. Godwin is asking for NRC input to check the calculated value which he proposes to include in his news release. That calculated value is

1000 picoCuries per cubic meter of air, or 1000E-12 microCuries per millileter of air

Mr. Godwin did not elaborate on what assumptions contributed to the derivation of that value, but he is asking for an independent calculation from the NRC that would confirm or deny the feasibility of the above value.

He asked that the answer to this request be expedited, if possible, because he informed me he has to issue this news release soon (a few hours).

Bill Maier  
Region 4



Counting time 6 hours.

All samples collected for 72 hours, pulled on Saturday March 19, 2011

Station #	Location	Iodine-131/pCi/M <sup>3</sup>	Error range	Lower Limit of Detection
7	Arlington School, 1 mile east of PVNGS	0.54	+/-0.023	0.026
14	So. Of Salome Hwy w of 371 Ave	0.26	+/-0.014	0.022
15	So. of Salome Hwy, just inside Water Reclamation Facility	0.13	+/-0.014	0.026
17	So. of 351 <sup>st</sup> Street on left side	0.69	+/-0.039	0.034
21	Elliot Road, across from Mesquite Energy Plant	0.54	+/-0.023	0.026
29	Wintersburg Rd, due west unit 2	0.62	+/-0.036	0.034
35	Off 411 <sup>th</sup> Ave and Osborn, next to fire station at end of road	0.51	+/-0.022	0.022
41	So 40 St, S of Broadway, Phoenix	0.24	+/-0.017	0.026



## **Insignificant Amounts of Radiation Detected by State Monitoring Equipment**

*Levels Pose No Health Threat; Amounts Many Times Less than Background Radiation Doses*

PHOENIX— Trace amounts of Iodine-131 radioactive material associated with releases from the Fukushima Daiichi Power Plant in Japan have been detected by Arizona Radiation Regulatory Agency (ARRA) instrumentation located west of the valley and in Phoenix.

“The average background radiation can range from 100-300 millirems per year, “according to Aubrey Godwin, Director of the Arizona Radiation Regulatory Agency. “The amount of additional radiation we are seeing in Arizona is less than **0.1** millirem. Such low concentrations of Iodine-131 do not pose a public health threat to Arizonans.”

ARRA expected to see a slight increase in detectable radiation as a result of the still unfolding emergency in Japan and due to the high sensitivity of monitoring equipment. The Arizona Department of Health Services (ADHS) maintains that the precautionary ingestion of potassium iodide (KI) is neither necessary nor prudent. Arizonans who take KI unnecessarily could place themselves in danger of negative side effects, including severe allergic reactions, abnormal heart rhythms and nausea.

ARRA monitors radiation levels in the state as a function of its oversight of the Radiation Measurements Laboratory. It continues to monitor levels of radiation from Japan in addition to its ongoing surveillance near Palo Verde Nuclear Generating Station west of Phoenix.

The Arizona Department of Agriculture and ARRA regularly test food produced in the state as part of the ongoing efforts to ensure a safe food supply. The sampling looks for several potential contaminants including radiation.

Readings from the ARRA Radiation Measurements Laboratory will be shared via the Arizona Emergency Information Network (AzEIN), [www.azein.gov](http://www.azein.gov), until the detectable affects of the Japan nuclear emergency naturally dissipate.

For more information on the emergency in Japan, including answers to some frequently asked questions, visit the AzEIN website or email questions to [azein@azdema.gov](mailto:azein@azdema.gov).

[Link to Arizona Radiation Regulatory Agency Data](#)

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**From:** Hoc, PMT12  
**Sent:** Tuesday, March 22, 2011 9:46 PM  
**To:** PMT03 Hoc  
**Subject:** FW: WA state detection -question from Congress

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**From:** PMT01 Hoc  
**Sent:** Monday, March 21, 2011 5:21 PM  
**To:** Hoc, PMT12; PMT07 Hoc  
**Subject:** FW: WA state detection -question from Congress

FYI information and action

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**From:** LIA12 Hoc  
**Sent:** Monday, March 21, 2011 5:01 PM  
**To:** PMT01 Hoc  
**Subject:** WA state detection -question from Congress

A staffer asked a question about the WA state detection, referenced [here](#):

Similarly, between March 16 and 17, a detector at the Department of Energy's Pacific Northwest National Laboratory in Washington State detected trace amounts of Xenon-133, which is a radioactive noble gas produced during nuclear fission that poses no concern at the detected level. The levels detected were approximately 0.1 disintegrations per second per cubic meter of air (100 mBq/m<sup>3</sup>).

This information is from the 17th. Do we have more current information? I will refer the staffer to DOE, but please confirm that this is our most current information.

Thank you,

Tim Riley, OCA

**From:** LIA07 Hoc  
**Subject:** 1800 EDT (March 22, 2011) USNRC Earthquake/Tsunami Status Update  
**Date:** Tuesday, March 22, 2011 6:12:13 PM  
**Attachments:** [USNRC Earthquake-Tsunami Update.032211.1800EDT.pdf](#)

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Attached, please find an 1800 EDT (March 22, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Sara

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

*BBB/142*

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**From:** PMT01 Hoc  
**Sent:** Wednesday, March 23, 2011 4:13 PM  
**To:** PMT02 Hoc; PMT11 Hoc  
**Subject:** FW: Tepco: Simulation of spread of radioactive materials "difficult"

FYI

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**From:** LIA02 Hoc  
**Sent:** Wednesday, March 23, 2011 2:58 PM  
**To:** PMT01 Hoc; Hoc, PMT12  
**Subject:** FW: Tepco: Simulation of spread of radioactive materials "difficult"

FYI

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**From:** LIA10 Hoc  
**Sent:** Wednesday, March 23, 2011 2:54 PM  
**To:** LIA02 Hoc; LIA03 Hoc  
**Subject:** Tepco: Simulation of spread of radioactive materials "difficult"

2011/3/24 2:56  
Source: Nikkei subscriber website

## Tepco: Simulation of spread of radioactive materials "difficult"

At a press conference in the early hours of March 24, Tepco clarified that they believed it would be "difficult" to estimate to which areas radioactive materials from Fukushima Daiichi NPS might spread. At press conferences up to March 23, Tepco's press section had maintained "we will publish as much as we can (regarding results of estimation)." Tepco has effectively withdrawn its plan to make such an estimation public due to lack of data at present on which to base any calculations.

Tepco has software to simulate how radioactive materials spread, but amounts of radioactive materials released and meteorological data such as wind direction must be entered prior to making actual calculations. Weather data from Fukushima Daiichi could serve as a suitable substitute, but Tepco says that data on the amounts of radioactive materials released are inadequate due to instruments out of service because of power outages and the effects of the tsunami.

Tepco also judged that making calculations based on several hypothetical patterns would have too wide variation and might be too far removed from reality. Tepco's press section states "we will continue to make efforts to estimate amounts of radioactive material released based on peripheral information."

## 東電「放射性物質の拡散シミュレーションは困難」

東京電力は24日未明の会見で、福島第1原子力発電所から放射性物質がどの地域まで広がるかを推計するのは難しいとの見解を明らかにした。23日までの会見では「できる限り（推計をして結果を）明らかにする」（広報部）としていた。計算の前提になるデータが現時点ではそろわないため、公表方針を実質的に撤回した。

東電は放射性物質の拡散具合をシミュレーションするソフトウェアを持っているが、実際の計算には放射性物質の放出量と風向などの気象情報を入力する必要がある。気象情報については福島第2原子力発電所で測定したデータを流用することができるが、放射性物質の放出量は、電源不足や津波の影響で計測機器が動かなかつたため、情報がそろわないという。

また何パターンかの仮置きの情報で算出するなどの措置は、変化の幅が大きすぎて事実とかけ離れる懸念が大きいとして断念。「放射性物質の放出量を周辺情報などから推計できないか今後努力する（広報部）としている。

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**From:** LIA10 Hoc  
**Sent:** Wednesday, March 23, 2011 2:54 PM  
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# NUCLEAR REGULATORY COMMISSION NEWS SUMMARY

WEDNESDAY, MARCH 23, 2011 7:00 AM EDT

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

## TODAY'S EDITION

### NRC News:

NRC Agrees To Work With State Officials On Indian Point Earthquake Review .....	1
NRC Issues 20-Year Operating License Extension For Vermont Yankee Plant .....	3
NRC Would Take Two-Pronged Approach To Confirm US Reactor Safety .....	3
IAEA Safety Report Says Some US Plant Upgrades Lacking .....	4
Federal Court Wants NRC Assessment Of Japan Crisis Implications For Oyster Creek.....	4
States Sue Over Lack Of Long-Term Nuclear Waste Storage Site .....	4
US Has Almost 72k Tons Of Spent Nuclear Fuel At Plant Sites ..	5
Alexander Says Disaster In Japan Will Sharpen Focus On Nuclear Safety .....	6
Sen. Graham Tours Duke Nuclear Plant, Vows Support For Nuclear Power .....	6
Japanese Crisis Puts Brakes On NRG's South Texas Expansion Plans.....	6
TVA Execs Discuss US Reactor Safeguards As Japan Struggles With Nuclear Crisis After Quake .....	7
NRC Inspecting Missouri Nuclear Plant Over Pump Lubrication Concern .....	7
Illinois Senators Organizing Nuclear Safety Forum .....	7
Lawmakers Express Grave Concerns About California Nuclear Plants In Fault Zones.....	8
Manufacturer Reports Potential Safety Issue At Browns Ferry ....	8
Babcock & Wilcox May Assist With Fukushima Daiichi Disaster .	8

NuScale Head Says Progress On Small Reactors Should Proceed.....	8
NRC May Update Fee Structure.....	8
Group Chides Poor Safety Performance At Robinson Plant .....	9
Secretary Chu's Public Role In Addressing Crisis Profiled.....	9
Polls Show Decline In US Support For Nuclear Power.....	9
US Looks To Secure Radioactive Material Used At Hospitals ...	10
SRS' H Canyon Closure Could Keep Waste In State "Indefinitely." .....	10
Hanford Contractor Announces Layoffs As Stimulus Money Runs Dry .....	10
Obama's Economic Agenda Overshadowed By Domestic, World Events .....	10
Senate Panel To Hold Hearing On Costs Of Cybercrime.....	10

### International Nuclear News:

Power Supplied To Fukushima Reactors, But Radiation Still Leaking .....	11
Japanese Nuclear Crisis Could Stymie Australian Plan To Sell Uranium To India .....	11
Merkel: Germany To Launch Two Panels To Study Nuclear Issues.....	11
Italian Government Set To Enact One-Year Moratorium On Further Nuclear Expansions.....	12
Despite Greenpeace Objections, Canadian Regulators Approve Nuclear Plant Expansion .....	12
China Set To Begin Construction On Fourth-Generation Nuclear Plant.....	12
Turkey Seizes Arms From Iranian Cargo Plane .....	12

## NRC NEWS:

**NRC Agrees To Work With State Officials On Indian Point Earthquake Review.** The New York Times (3/23, Kaplan, 1.01M) reports that longtime Indian Point power plant opponent, New York Gov. Andrew M. Cuomo – who has called the plant “a ‘catastrophe waiting to

happen’ in part because of questions about its susceptibility to a powerful earthquake,” welcomed an announcement from NRC officials Tuesday that the agency “would accelerate a planned review of Indian Point and would allow state officials to be part of the inquiry.” At a news conference, Cuomo said “It is imperative that we get it right, and that’s why we brought the urgency to the matter.” The Times adds the NRC had already planned to review earthquake “vulnerabilities at 27 nuclear plants, including Indian Point.” Tuesday, the

BBBB/144

commission agreed "to make Indian Point its first priority in that review and to allow state experts to participate in the inspection."

Reuters (3/23, Wiessner) adds that Cuomo said "It is essential that the NRC move quickly to answer the significant and long-standing safety questions surrounding Indian Point."

Fox News' "America's Newsroom" (3/22, 9:30am) reported, "members of New York governor Andrew Cuomo's staff are going to try to get some of those answers today as they meet with senior officials with the federal Nuclear Regulatory Commission known as the NRC in the next hour. We have confirmed this meeting is taking place at the NRC headquarters in Maryland to, again, address those concerns. Now, this is a government to government meeting, as we've been told, that will help New York state leaders gather further information on Indian Point's earthquake vulnerabilities, preparedness and risk assessment."

Bloomberg's "Final Word" (3/22, 3:33, Carlin) reported, "The NRC officials told New York's lieutenant governor that the Indian Point nuclear power plant is safe, and the 'robust design of US plants makes it unlikely that a similar event could occur in the US.'" Indian Point "recently ranked number 1 for vulnerability among US nuclear reactors."

NY1 Cable New York (3/22, 1:35am) broadcast, "Federal regulators say the Indian Point power plant will be their top priority. Officials from the NRC met with state leaders to address the plant's overall safety and whether its license should be renewed in 2013. The NRC told the leaders they will share information with Albany and allow them to take part during inspections. The meeting was in response to the nuclear crisis in Japan. Indian Point sits less than 30 miles from the Bronx and sits on two fault lines." NY1 Cable (3/23) also ran the story on its website. News 12 Cable Westchester, New York (3/22, 1:04am) ran a similar story in the early morning hours.

According to the Albany (NY) Times Union (3/23, Seiler), Cuomo said the "NRC had pegged the odds of damage to one of Indian Point's reactors after a quake at 1 in 13,000." In "what Cuomo said would be an 'expeditious' process, the NRC will share federal data on seismic risk at the plant with New York experts, and state personnel would join the commission's staff – including Chair Greg Jaczko – for on-site inspection of the facility."

WXXI-TV Rochester, New York (3/23, DeWitt) added on its website, Cuomo "did not say that the plant should definitely be shut down, but he did say that if the nuclear power plant is eventually deemed too great a risk to continue to operate, alternative sources of energy would have to be found to replace the power."

Also covering the NRC meeting were the Wall Street Journal (3/23, Barrett, 2.09M), Westchester (NY) Journal News (3/23, Clary), Mid-Hudson (NY) News (3/23), Gothamist

(3/23, Signore) and WBNG-TV Binghamton, New York (3/22), among other outlets.

### ***NRC Says Indian Point, Other US Plants Are Safe.***

On its website, CNN (3/23, Ariosto) reports that NRC "regulators say that the plant is safe" and safety reviews take into account "even the most extreme conditions," commission spokesman Neil Sheehan said."

Bloomberg News (3/23, Lomax) reports that after meeting with New York officials, NRC issued a news release say the "The robust design of US plants makes it highly unlikely that a similar event could occur in the United States." Bloomberg adds that while a "report last year found 'slightly higher seismic risk for the Indian Point reactor,' it was 'still within safety margins,' the NRC said."

On its website, WABC-TV New York City (3/23, Monek) said, "The owner of the power plant has insisted the facility is not susceptible to the kind of earthquake and tsunami that rocked Japan. Entergy's vice president, John McCann, told Westchester County legislators on Monday that the earthquake in Japan was much more powerful than any recorded around Indian Point."

In a brief report, the AP (3/23) also notes McCann's remarks to Westchester County legislators, adding "McCann said he expected changes to be made in response to the events in Japan, but he didn't say what they would be."

The Westchester (NY) Journal News (3/23, Clary) reports, "McCann said the earthquake that hit a coastal area 170 miles northeast of Tokyo was 1,000 times more powerful than anything recorded in this region, adding that the plant is too far inland to be hit by a tsunami." McCann said Entergy has its backup systems protected for a safety margin above the 100-year flood mark. "The committee focused questions on the ability of the plant to contain radiation, to store spent fuel safely and to keep power flowing via backup generators and other systems until the reactors can be safely shut down."

New Rochelle (NY) Patch (3/23, Taliaferro, Kenny) noted that at the meeting with Entergy and McCann, "lawmakers repeatedly raised concerns about the effectiveness of current evacuation plans, which only cover a 10-mile radius." Rep. Peter Harckham "said that he was evacuated during the 1979 meltdown at the Three Mile Island plant in Pennsylvania, and that the plan 'didn't work. When I hear about evacuation, whether it's 10 miles or 50 miles, I personally don't have a lot of confidence,' he said."

***NRC Says Upstate Units Not At Risk From Seismic Threats.*** The Syracuse (NY) Post-Standard (3/23, Knauss, 97K) notes the "NRC's reassessment of seismic data began in 2005" and an "initial review" of the 104 US plants "found no need for additional measures to protect four Upstate New York reactors, including three in Oswego County and one in Wayne County, said Neil Sheehan, speaking for the NRC."

**Blog Coverage.** On its “Capital Confidential” blog, the Albany Times Union (3/23, Seiler, 83K) reports on Lt. Gov. Bob Duffy and state Director of Operations Howard Glaser meeting with NRC officials and the agency’s “willingness to sign a memo of understanding that it would share federal data on seismic risk with New York experts, and that state personnel would be included in the commission’s on-site inspection of the facility.” Gov. Cuomo “pointed out that the plant’s location has prompted worries about the difficulty of evacuation,” and said “that if the current 50-mile ‘circle of evacuation’ around Japan’s wounded Fukushima Daiichi Power Station was laid over Indian Point, ‘you’re talking all of New York City, you’re talking about parts of Connecticut, you’re talking about Long Island, you’re talking about New Jersey.’”

On her “Daily Politics” blog for the New York Daily News (3/23, 527K), Celeste Katz said Cuomo had “demanded a top-to-bottom examination” of Indian Point and noted a “study by a group of leading Columbia University seismologists has revealed that two faults – the Ramapo and the Stamford-Peekskill – intersect just north of Indian Point.” The NRC “agreed [to] share federal data regarding seismic risk specific to Indian Point with New York technical experts and include local experts on its inspection team. NRC Chair Greg Jaczko will inspect Indian Point personally.” Cuomo said “We appreciate the NRC agreeing to move swiftly and we look forward to working closely with them on this issue to protect the health and safety of New Yorkers.”

### **NRC Issues 20-Year Operating License Extension For Vermont Yankee Plant.**

In an updated version of an article that first appeared in yesterday’s briefing, the Boston Globe (3/23, Daley, 253K) reports on the NRC announcement that it had “issued the Vermont Yankee nuclear power plant a 20-year license extension yesterday.” Plant opponents had hoped an agency-ordered pause, called for after the Japanese earthquake and tsunami, “would translate into a deeper review of the plant, which has the same design as the crippled Fukushima Daiichi nuclear facility in Japan that is releasing radioactive material.” But Vermont Yankee spokesman Larry Smith said the “comes after five years of careful and extensive review and confirms that Vermont Yankee is a safe, reliable source of electricity and capable of operating for another 20 years.”

On its website, WCAX-TV Burlington, Vermont (3/22, Carlson) reported, “A group of Vermont lawmakers now want the NRC to suspend the license extension until regulators take another look at safety at the Vernon plant. They also want as much radioactive material as possible removed from the water in the spent fuel pool and instead put into dry cask storage.” State Rep. David Deen said the plant may be in “a

seismically inactive area but we do face the power of water if nature decides to inundate the Vermont Yankee plant.”

On its website, WBUR-FM Boston (3/22, Pfeiffer) reported that “Vermont is the only state that requires legislative approval for the re-licensing of nuclear plants — and last year the Vermont Senate voted against reissuing a new license for Vermont Yankee, whose current license expires in April 2012.” The page provides a link to listen to the report.

In a press release (3/22), the anti-nuclear group, Beyond Nuclear “decided the reckless decision-making by the Nuclear Regulatory Commission on March 21 to grant a 20-year license extension to the Vermont Yankee reactor, the same Mark I design as the severely damaged Fukushima Dai-ichi reactors still in an extremely dangerous state in Japan.” The group wants the “public to write letters and make calls to the NRC and Congress, to whom the NRC is responsible, condemning this outrageous gamble with public safety.”

**Vermont Regulators Poised To Renew Yankee’s Water Discharge Permit.** The Keene (NH) Sentinel (3/22, Jarvis, 11K) reported that the Vermont Agency of Natural Resources “plans to renew a permit allowing the Vermont Yankee nuclear power plant to discharge water into the Connecticut River.” The decision comes after the Connecticut River Watershed Council petitioned “to review the permit once it’s issued so it can examine potential effects on fish populations.” The Sentinel adds David L. Deen, of the watershed council noted that an alternative to allowing the plant to “discharge water into the river” would be to have “them to use their cooling towers to return the water back to regular temperatures before discharging it back into the river,” he said.” But Deen, and others concerned about the effects of the warmer discharge water on aquatic life, said Yankee would have to use its own energy to do that.

**Blog Coverage.** On his blog for Forbes (3/22, 914K), Osha Gray Davidson wrote that the NRC announcement “surprised many because of its timing.” Davidson notes that Entergy-owned Vermont Yankee “has a containment vessel identical to the ones at the crippled Fukushima Dai-ichi nuclear power plant — a GE Mark I.” In a statement following the announcement, Vermont Sens. Patrick Leahy and Bernie Sanders, along with Rep. Peter Welch, said, “It is hard to understand how the NRC could move forward with a license extension for Vermont Yankee at exactly the same time as a nuclear reactor of similar design is in partial meltdown in Japan.”

### **NRC Would Take Two-Pronged Approach To Confirm US Reactor Safety.**

ClimateWire (3/22, Behr) reported NRC Executive Director for Operations, Bill Borchardt said he was “100 percent confident from the review

that we've done and continue to do every single day that we have a sufficient basis to conclude that the US plants continue to operate safely." Even so, Borchardt advised that NRC staff "undertake two additional investigations to confirm the ability of US nuclear reactors to withstand an extreme natural disaster coupled with the loss of outside power, the overheating of reactor cores and spent fuel, and the resulting explosions that struck the Fukushima Daiichi nuclear plant." The first such inspection – a "quick look' check by veteran NRC staff" – would confirm that protective and emergency measures are in place and ready for use, while a "deeper inquiry would have to await more evidence" from the Fukushima reactor investigation.

### **IAEA Safety Report Says Some US Plant Upgrades Lacking.**

Reuters (3/23, Doggett) reports that two days before the earthquake and tsunami struck Japan and created a crisis at the Fukushima plant, IAEA watchdogs sounded the alarm about safety at some older US nuclear plants. The IAEA evaluated NRC oversight of the US nuclear industry at the request of the agency and said in its report that "licensee actions to upgrade the quality and reliability of the operating facilities to strive for their safety enhancement appears to be less than in many other countries where aging facilities are in operation." Reuters adds the NRC said it would carefully review the IAEA's conclusions. However, NRC spokesman Scott Burnell said, "We cannot unilaterally impose new requirements unless there is a solid technical base for doing so."

### **Federal Court Wants NRC Assessment Of Japan Crisis Implications For Oyster Creek.**

Concerns about the 2009 renewal of the Oyster Creek Nuclear Generating Station in light of the Japanese nuclear crisis generated a number of stories in New Jersey and elsewhere. The Newark (NJ) Star-Ledger (3/23, Spoto, 248K) reports that the US 3<sup>rd</sup> Circuit Court of Appeals in Philadelphia has written to the NRC seeking information on "what impact the damage to Japan's nuclear reactor may have on the 2009 relicensing of the Oyster Creek Nuclear Generating Station." Noting that the Fukushima plant in Japan is "nearly a carbon copy of the Oyster Creek plant," the Star-Ledger adds that Oyster Creek got a 20-year extension in 2009. However, "The Sierra Club of New Jersey contends the court's request is tantamount to advising the NRC to reconsider its approval."

The Asbury Park (NJ) Press (3/23, Moore) reports that the letter asks if "events at the Fukushima Daiichi reactor site have changed the agency's thinking about the wisdom of granting" Oyster Creek's license extension, and "asks 'what impact, if any, the damages from the earthquake and tsunami...have on the propriety of granting the license renewal application' for Oyster Creek." This piece notes that

the NRC "conferred Monday morning on a plan to quickly evaluate American nuclear plants and their safety preparations against what is known so far about the Japanese accidents."

The Chicago Tribune (3/23, Sachdev, Wernau, 488K) adds that the court "put Chicago-based Exelon Corp. on notice Monday that it will have to answer to more than the US Nuclear Regulatory Commission in the wake of the nuclear disaster in Japan." The Tribune notes that the Oyster Creek plant "is part of a lawsuit that began long before the earthquake" which "had drawn little attention until now and could renew questions about extending the life span of some of the nation's oldest nuclear plants." Patch.com (3/23, Miller) also covers this.

On his MSNBC's "Hardball with Chris Matthews" (3/22, 7:50pm) show, Chris Matthews visited anti-nuclear activists Kate Sheppard of Mother Jones and Joanna Neumann from Public Interest Research Group to discuss relicensing and safety of the US nuclear fleet. Both guests were against relicensing. Neumann said since "1990, there have been four critical instances identified by the NRC at nuclear reactors in South Carolina, Ohio, and three of those plants where the critical instances have happened have actually had their licenses extended, so, you know, the idea that safety problems are only happening in Japan is not true."

### **States Sue Over Lack Of Long-Term Nuclear Waste Storage Site.**

The CBS Evening News (3/22, story 7, 2:30, Couric, 6.1M) reported, "Today a Federal Appeals Court heard arguments in a lawsuit over what to do with spent fuel rods," with South Carolina and Washington "taking the lead on a major problem for many states" that want the NRC to "provide a place to permanently store highly radioactive waste." David Lochbaum, Union of Concerned Scientists: "The federal government has failed the American public by not dealing with spent nuclear fuel for decades." CBS noted that "plans to make Yucca Mountain in Nevada a long-term storage site were scuttled by the Obama Administration a year ago after 20 years of planning costing \$14 billion." NRC chair Gregory Jaczko: "We are looking at a longer time frame for storage of spent fuel than we have in the past, but...we believe that spent fuel certainly can be stored safely and securely with the existing system."

According to the AP (3/23, Pickler), "Arguments before a three-judge panel of the appeals court in Washington focused on whether the federal government has made a final decision yet that the states can appeal. Last year, the Energy Department filed a motion with the Nuclear Regulatory Commission to withdraw its application for the Yucca Mountain repository. The commission has not ruled on that motion, but the Energy Department has gone ahead with dismantling the project."

McClatchy (3/23, Rosen) reports Washington Assistant Attorney General Andrew Fitz argued "that Obama's refusal to fund continued development of the Nevada disposal site violates the 1982 Nuclear Waste Policy Act. 'He's acting unconstitutionally under the separation of powers doctrine because he doesn't have the authority under the statute,' Fitz told a three-judge panel of the US Court of Appeals for the District of Columbia Circuit. 'He had no authority to reverse it.'"

WHNT-TV Huntsville, AL (3/23, 4.48 a.m. CT, 522) reports that "South Carolina and Washington state went to court Tuesday demanding the Nuclear Regulatory Commission find a place to permanently store radioactive waste." WHNT-TV added that "some say the waste is a national security threat, and a danger to those who live nearby, because the storage tanks were never meant to be a permanent solution."

**Judges Suggest Suit May Be Premature.** A "Greenwire" story appearing on the New York Times (3/23, Northey, 1.01M) website adds that the three-judge panel "seemed to agree the petitions were filed too early, before the government had made a final decision that could be legally challenged." The article explains that the "NRC is currently deciding whether to allow DOE to withdraw its application to develop the repository." Although it remains unclear whether the DOE would comply with the NRC's decision, Judge Brett Kavanaugh asked, "Why shouldn't we wait for the NRC to act?"

The Las Vegas Review-Journal (3/23, Tetreault, 178K) adds that Chief Judge David Sentelle asked, referring to the lack of a final decision from the NRC, "What has the NRC done that you allege has caused harm to your party?" Fitz responded, "The key issue here and it is incredibly frustrating, is the finality issue is a smokescreen." Justice Department attorney Ellen Durkee, who is representing the DOE and NRC, argued that without a final ruling from the NRC, "there is no agency action for the court to review."

**Barbour Expresses Support For Yucca During Nevada Trip.** The Las Vegas Sun (3/23, Damon, 41K) reports Mississippi Gov. Haley Barbour, a potential Republican Presidential candidate, visited Nevada Tuesday, where he "was forthright about his unconditional support for storing nuclear waste at Yucca Mountain." Barbour said, "We've been collecting taxes for that specific purpose and the American people should get their money's worth." When asked whether that would hurt his chances in Nevada, "Nah," he said before turning to the next question.

Also covering Barbour's trip, the Las Vegas Review-Journal (3/23, Myers, 178K) adds that the Mississippi governor said that the nuclear crisis in Japan hadn't changed his thinking about funding and building the nuclear waste repository in Yucca Mountain.

**US Urged To Look To Japanese Crisis As Support For Yucca.** Rick Martinez writes in his column for the Raleigh News & Observer (3/23, 146K) that "even if the Japanese earthquake experience further slows the development of nuclear power here, it should not slow the drive to open Yucca," because if the Japanese experience teaches us anything, it is that "storing spent fuel rods at a nuclear plant is dangerous and an easily avoidable risk." According to Martinez, "the need for isolated nuclear waste storage facilities is separate from the debate about whether nuclear power is safe enough to continue as a major component of our energy portfolio," and he hopes that nuclear energy opponents and supporters can find agreement on this issue.

Najmedin Meshkati, a professor of civil/environmental and industrial and systems engineering at the University of Southern California, writes in an op-ed for McClatchy (3/23) that "we have to learn lessons from Fukushima and count our blessings in the United States. And urgently start, before it is again too late, decommissioning the highly risky spent fuel pools, now scattered all over the country in 33 states," which can be achieved by approving and building the Yucca Mountain repository. Meshkati concludes that "in the age of probable impossibilities, we cannot afford to stick to wishful thinking or romantic fascination of the improbable failure of even a single one of these 65 dangerous sites."

**US Has Almost 72k Tons Of Spent Nuclear Fuel At Plant Sites.** According to state-by-state numbers obtained by the AP (3/23, Fahey, Henry), the US has 71,862 tons of spent nuclear fuel and radioactive waste. "Three-quarters of the waste sits in water-filled cooling pools like those at the Fukushima Dai-ichi nuclear complex in Japan, outside the thick concrete-and-steel barriers meant to guard against a radioactive release from a nuclear reactor. ... The rest of the spent fuel from commercial US reactors has been put into dry cask storage, but regulators only envision those as a solution for about a century and the waste would eventually have to be deposited into a Yucca-like facility."

The Los Angeles Times (3/23, Vartabedian, 681K) adds that when nuclear power plants were initially constructed in the US, "the utilities erroneously thought the pools would be for temporary storage only: The federal government had promised it would find a safe place to bury the used-up fuel rods, which remain radioactive for thousands of years." But the deadlock over Yucca has "kept the decaying radioactive material stationary for decades, accumulating across the country ever since the Eisenhower administration. Now the nuclear disaster in Japan, in which at least one spent fuel pool seems to be damaged and leaking and may have caught fire, has thrown US decisions about its own waste into sharp

focus, exposing what many scientists call a serious compromise in safety."

In a story that focuses on the threat posed by spent nuclear fuel in the crisis in Japan, Reuters (3/22) discusses how the US has addressed the same issue, or, depending on who you ask, has failed to address the issue. David Lochbaum, a nuclear engineer with the Union of Concerned Scientists, said that after plans for permanent storage sites faltered, "We just filled the pools up to capacity without ever rethinking whether we should provide better safety or barriers." But former NRC chairman Richard Meserve said that steps taken by the NRC after the September 11 attacks have increased safety at temporary storage site. Said Meserve, "We have some safety systems in the US reactors that may not be present at the Japanese reactors."

**Massachusetts Officials Press NRC On Spent Fuel Storage.** The Beverly (MA) Citizen (3/22, 4K) reported Massachusetts "Attorney General Martha Coakley and Senate President Therese Murray are urging" NRC regulators to "reexamine the safety of storing spent fuel rods in wet pools at the Pilgrim and Vermont Yankee power plants." In a letter to the NRC and DOE, Coakley and Murray indicate "the NRC has repeatedly rejected the contention by Attorney General's Office that 'wet fuel on-site dense storage' creates an environmental risk, but has failed to disclose the full studies to the state on which their decisions have been based." Coakley and Murray want the NRC to "consider mandating additional 'dry cask storage' at the two plants."

**Alexander Says Disaster In Japan Will Sharpen Focus On Nuclear Safety.** The Kingsport (TN) Times-News (3/22, Hayes, 39K) reported, "US Sen. Lamar Alexander downplayed on Monday any impact that Japan's nuclear crisis might have on the future of nuclear power in the United States." Alexander, who toured construction of the TVA's "\$800 million natural gas-powered John Sevier plant" in Tennessee, said "that a minimum, what happened in Japan has caused nuclear power advocates to stop and take a look at best safety practices."

**Sen. Graham Tours Duke Nuclear Plant, Vows Support For Nuclear Power.** WYFF-TV Greenville, SC (3/23) reports on its website that after touring Duke Energy Nuclear Plant, Sen. Lindsey Graham declared that he still supports nuclear energy. Graham said, "This nuclear plant I live five miles away. I've lived in this area all of my life. A lot of the people I've grown up with work here. I have faith in the American nuclear power industry. We're preparing to build two new reactors in South Carolina and one in Georgia. I think it is imperative we move forward." Graham noted differences between the Duke Energy plant and the one devastated in Japan and said that an earthquake of the

magnitude that struck Japan could never occur "in this area of America." Duke Energy brought Graham and media "inside the control room of reactors one and two."

Graham took the tour, the State (SC) (3/23, Fretwell, 87K) reports, "aware that events in Japan have increased concern about nuclear safety." Lessons will be learned from the Japanese situation, Graham promised, but it "should not slow the push to develop new reactors." The NRC finding from last March that showed "the Oconee plant had problems last year with clogs in a line," which were followed up by unsatisfactory actions by Duke Energy were spun positively by Graham. The Senator said the incident, which caused NRC to place Oconee on a list for low-performing safety, proves US nuclear regulation work. "Duke and NRC officials at Tuesday's media tour said the problems have been addressed."

The Anderson (SC) Independent-Mail (3/22) adds that while touring Duke's Oconee Nuclear Station, Sen. Graham learned that the plant can be shut down with the push of one button. According to Graham, renewable sources like wind and solar cannot replace power generated from coal, but nuclear power can. "Graham said he fears that the nation's nuclear power renaissance could be threatened by calls for a moratorium on new plants." The Senator also commended federal nuclear regulations, including the posting of NRC inspectors "stationed at every nuclear plant in the nation year-round." In remarks, Graham also praised the Administration's proposal for \$36 billion in loan guarantees for new reactors. The tour was the first time Duke Energy allowed cameras into its "football-field-sized turbine/generator room and a control room for two of the reactors" since 2007.

However, WSPA-TV Asheville, NC (3/22, Kanady) observes on its website that cameras have not been allowed into the plant since just after the September 11<sup>th</sup> attacks. According to Graham, the biggest threat to Oconee remains the accidental release of radiation. Graham applauded Oconee procedures, saying, "This plant has a lot of redundancies when it comes to cooling the reactor." The Senator also acknowledged it's too early to discern the lessons from the Fukushima disaster.

The Greenville (SC) News (3/23, Simon) notes, "Nuclear power is clean and safe, Graham said. His single concern is spent fuel storage, and Graham said he is calling on the Obama administration to rebate the money that utility ratepayers have been paying to build a long-term repository at Yucca Mountain in Nevada."

**Japanese Crisis Puts Brakes On NRG's South Texas Expansion Plans.** The Wall Street Journal (3/23, Smith, 2.09M) reports that NRG Energy CEO David Crane said this week that as a result of the Japanese nuclear crisis, his firm's plans to build two new reactors at that South

Texas Nuclear Generating Station may be delayed or canceled. The Journal refers to this as the most serious response yet in the US to the crisis, noting that San Antonio-based CPS Energy is backing out of talks with NRG to buy electricity from the proposed new plants.

Meanwhile, the Houston Business Journal (3/23) reports that Nuclear Innovation North America is waiting for NRC's final assessment of the Japanese crisis before proceeding with its plans to expand at the South Texas facility, noting that NINA "is the company jointly owned by NRG Energy Inc. and Toshiba Corp. that is developing two nuclear reactors at the South Texas Project near Bay City, about 80 miles from Houston." The firm "will limit work on the South Texas Project expansion to securing a license and a federal loan guarantee for the nuclear project."

**NRG Chief Warns Against "Crippling" Cuts To Federal Renewable Energy Loan Guarantees.** Dow Jones Newswires (3/23, Malik) reports that Crane said Tuesday that if the Federal government cut loan guarantees for nuclear and renewable energy products, "the power industry in the United States will become all gas all the time. Would it cripple nuclear or renewables? I think it would."

**TVA Execs Discuss US Reactor Safeguards As Japan Struggles With Nuclear Crisis After Quake.** The AP (3/23) reports, "Two executives with the Tennessee Valley Authority said Tuesday that their information and analysis indicate the utility's six reactors would have weathered a powerful earthquake like that which prompted Japan's nuclear emergency, a claim that drew skepticism from an environmental activist." AP says "TVA's senior nuclear communications manager Ray Golden and chief nuclear officer Preston Swafford discussed Japan's nuclear emergency with reporters in Huntsville in describing safeguards at TVA's nuclear plants along the Tennessee River in Tennessee and Alabama." Notably, "Swafford said some of the differences with Japan's plants stem from 'redundant' safety and power systems" that were set up after the September 2001 terrorist attack.

Swafford also said that "the Japanese reactors handled an earthquake 10 times bigger than they were designed for," noting that "the plant was doing a normal shutdown until the tsunami struck. Then the emergency diesel generators and switch gear failed," reports the Scottsboro (AL) Daily Sentinel (3/23, Bonner, 5K).

On its website and on the air, WAAY-TV Huntsville, Alabama (3/22, Reid) reported that "the TVA is addressing concerns about the Browns Ferry Nuclear plant following the disaster in Japan." The report said that "because of the catastrophe, officials are reviewing safety procedures." Chief Operating Officer Bill McCollum said, "We also challenged our

operations to see if there are lessons learned that we can apply from Japan."

**NRC Inspecting Missouri Nuclear Plant Over Pump Lubrication Concern.** The AP (3/23) reports that after indications that an auxiliary feedwater pump at Ameren Corp.'s Callaway nuclear plant in Missouri may not have been lubricated correctly, an NRC inspection team is on site to investigate. However, "an Ameren spokesman says the inspection is unrelated to heightened concerns at nuclear plants following the damage to the plant in Japan."

The Fulton (MO) Sun (3/23, Norfleet, 4K) reports also covers the "special inspection," noting that an Ameren spokesperson "said the inspection is the lowest of three NRC inspection levels that go beyond the normal, ongoing inspections conducted by the resident NRC inspectors based at the plant," adding that the "current inspection is in response to a Feb. 8 routine oil sample taken during normal maintenance on a pump. The oil showed discoloration, Cleary said, and a subsequent inspection of the pump bearing found some wear."

**Illinois Senators Organizing Nuclear Safety Forum.** The AP (3/23, Webber) reports, "Illinois Sens. Dick Durbin and Mark Kirk have asked federal and state nuclear experts to attend a forum to discuss the safety of the state's nuclear reactors" and the Illinois' emergency preparedness. NRC officials have signed on to attend, as have representatives of the Illinois Emergency Management Agency, Exelon Corp., and environmental advocacy groups. "Some watchdog and environmental groups, however, have said they're concerned that four of the state's 11 reactors – at the Dresden and Quad City generating plants – are of the same design and about the same age as those involved in Japan's nuclear crisis."

**Obama's Dealings With Exelon In Illinois Shaped Views on Nuclear Power.** Noting that Illinois generates more electricity from nuclear power than any other state, Bloomberg News (3/23, McCormick) reports that President Obama's "relationship with Exelon, the nation's largest US nuclear power producer, led his top 2008 Democratic primary opponent, then-Senator Hillary Clinton of New York, to charge that he had 'cut some deals' with the industry." Bloomberg notes the concerns about nuclear power being voiced by Durbin and Kirk, touching on their impasse with the Obama Administration over its cancellation of the Yucca Mountain project. Meanwhile, Bloomberg discusses President Obama's "handling of political concerns in 2005-2006 from radioactive tritium leaks at Illinois reactors" and his "battles over disposal of nuclear waste, an issue Kirk is raising following the Japanese disaster." This piece also mentions the forum being organized by Kirk and Durbin.

## **Lawmakers Express Grave Concerns About California Nuclear Plants In Fault Zones.**

The Christian Science Monitor (3/23, 48K) reports on concerns expressed by California state legislators and members of the state's Federal delegation "are ratcheting up pressure on the Golden State's two operating nuclear power plants – both, like Japan's stricken Fukushima I, located in seismically active regions near the Pacific coastline." The Monitor describes a Sacramento "legislative hearing Monday" at which lawmakers faulted "the overconfidence of engineers and plant employees" and "raised concerns that recent geological evidence indicated a higher earthquake risk for both plants than their designers anticipated." Meanwhile, "US Sens. Barbara Boxer and Dianne Feinstein, both California Democrats, sent a letter on March 16 to the Nuclear Regulatory Commission calling for a 'thorough inspection' of the two plants."

Southern California Public Radio (3/23) adds that the state lawmakers are seeking "a better grasp of the risks of a nuclear accident here. They're pressuring the utilities that operate California's nuclear power plants to complete new seismic studies." Noting that the earthquake in Japan far exceeded projections of potential magnitude, this piece adds that it was also "was 900 times more powerful than Northern California's 1989 Loma Prieta quake."

Meanwhile, the Ventura County (CA) Star (3/23, Herdt, 70K) reports that state Sen. Sam Blakeslee (R) has accused PG&E of operating the Diablo Canyon plant "under 'a culture of disregard of risk'" and is calling on the company "to suspend or withdraw its application for license renewal until the company has completed advanced seismic studies requested by state regulators three years ago. Blakeslee, R-San Luis Obispo, a geophysicist whose district includes the site of the nuclear plant, along the coast of San Luis Obispo County, said Monday that PG&E has consistently downplayed the risks associated with the discovery of an offshore earthquake fault line in 2008."

## **Manufacturer Reports Potential Safety Issue At Browns Ferry.**

On its website and on the air, WAFF-TV Huntsville, Alabama (3/22, Do) reported, "Workers at TVA's Browns Ferry nuclear plant are closely monitoring the water coming in and out of the plant, after a parts manufacturer recently notified TVA of a possible issue with some important pieces to its reactors." The TV station said the nuclear plant "is one of more than two dozen nuclear plants nationwide that use GE Hitachi control rods or blades in its boiling water nuclear reactors." Notably, "GE Hitachi discovered extensive cracking in some rods at a nuclear plant overseas – a defect which could create a safety hazard."

In a separate story on its website and on the air, WAFF-TV (3/22, Do) reported that "TVA officials are keeping a close

eye on what went wrong with Japan's reactors and what can be improved for the future for Browns Ferry Nuclear Plant." Tennessee Valley Authority CEO Bill McCollum says "the Browns Ferry plant has another thing the Japanese reactors do not have: a hardened vent system that would help prevent a build-up of hydrogen from the reactors containment structures."

## **Babcock & Wilcox May Assist With Fukushima Daiichi Disaster.**

The AP (3/23) reports that Babcock & Wilcox revealed that "it is in talks with Toshiba to provide nuclear technical assistance and services to secure and maintain the safety of the nuclear power plants at Fukushima Daiichi." The Japanese government and Tokyo Electric Power Co. are being helped with the disaster by Toshiba. Terms of the Babcock & Wilcox-Toshiba pact have not been revealed.

The Charlotte (NC) Business Journal (3/23, 14K) adds that Babcock & Wilcox has no Japanese operations and continues normal worldwide operations. Toshiba has been assisting the disabled plant by working "reinstate power in the region." Babcock & Wilcox CEO Brandon Bethards said, "We are saddened by the loss of life and devastation that has occurred as a result of the earthquake and tsunami in Japan. Our thoughts are with those affected by this tragedy as well as those who continue to recover from its aftermath. Babcock & Wilcox is prepared to support Toshiba's efforts to stabilize the Fukushima Daiichi nuclear power units." The AP (3/22) and the International Business Times (3/22) also report this.

## **NuScale Head Says Progress On Small Reactors Should Proceed.**

Bloomberg News (3/23, Lippert, Van Loonbloomberg) reports, "Nuclear engineer Jose Reyes jolted awake at 4:45 a.m. on March 11 when his son called to warn him that a massive earthquake had unleashed a tsunami that rocked Japan. Giant waves were heading for the Oregon coast, about an hour from Reyes's Corvallis office." Reyes, "55, who founded NuScale Power Inc. in 2007 to design a slimmed-down, 45-megawatt reactor, contemplated the blot on the already beleaguered nuclear industry – and the prospects for his nascent company, Bloomberg Markets magazine reports in its May issue. 'We've been hard-pressed but not crushed,' he says. 'Stopping the progress being made would be a mistake.'"

## **NRC May Update Fee Structure.**

The Energy Business Review (3/22) reports that NRC may amend its fee, licensing regulation, and inspection schedule for FY2011. During FY2011, the agency must recover 90% of its budget from fees it collects and return them to the US Treasury. "Based on the fiscal year 2011 budget, the NRC's total amount of fees to be recovered by 30 September is

approximately \$915.3m, about less than 1% (\$0.4m) more than in fiscal year 2010.”

**Group Chides Poor Safety Performance At Robinson Plant.** ABC affiliate, WPDE-TV Myrtle Beach, South Carolina (3/23, 1:37am) broadcast, “A report that criticizes operations at the Robinson nuclear power plant is out and officials that Hartsville plant is speaking out.” The Union of Concerned Scientists “say unbelievably poor worker performance” contributed to problems at the plant when operators reported two fires within hours of each other.

**Secretary Chu’s Public Role In Addressing Crisis Profiled.** Under the headline “Problem Solver At Helm As US Faces Test On Nuclear,” Reuters (3/23, Gardner) profiles Energy Secretary Steven Chu, citing his resume, highlighting the award of a Nobel Prize in Physics and his role during the BP oil spill, to argue that he is probably better suited to address the technical issues surrounding the Japanese nuclear crisis than previous officials to fill his post. But Reuters adds that Chu’s technical expertise may not be what Americans need to feel safe from nuclear disaster. After discussing the Secretary’s recent efforts to explain the risks, both in Japan and to the US, on Capitol Hill and to the public, the article quotes William Phillips, a professor at the University of Maryland who shared the Nobel Prize with Chu, who said, “One of the problems with the kind of reactions the general public has to nuclear power is very often they are not based on evidence, but feelings.”

Meanwhile, in its “E2 Wire” blog, The Hill (3/23, Geman, Restuccia, 21K) reports that Secretary Chu “will speak Wednesday at a Pew Environment Group forum on clean energy, an appearance that comes days after Chu suggested the Japanese nuclear reactor crisis could influence the siting of future US nuclear plants” during an interview on “Fox News Sunday.” Said Chu, “Certainly where you site reactors and where we site reactors going forward will be different than where we might have sited them in the past, I would say.” According to the blog, his “brief comment drew widespread attention — tomorrow he could face more questions about the impact of the crisis in Japan.”

**Polls Show Decline In US Support For Nuclear Power.** A series of new polls showing sharp declines in US support for nuclear energy generated coverage in national media outlets. The CBS Evening News (3/22, story 6, 0:25, Couric, 6.1M) reported, “About half of Americans say they’re concerned about radiation from Japan reaching the United States. About seven in ten say they believe nuclear power plants here in the US are generally safe, but more than six in ten don’t want one built near where they live. And 58% say the US government is not prepared for a nuclear accident.”

The New York Times (3/23, Cooper, Sussman, 1.01M) reports that a new CBS News poll shows that “what had been growing acceptance of nuclear power in the United States has eroded sharply in the wake of the nuclear crisis in Japan, with support for building nuclear power plants dropping slightly lower than it was immediately after the accident at the Three Mile Island plant in 1979.” Forty-three percent of respondents “would approve of new US reactors, down from 57% in 2008. ... Support for nuclear power has waxed and waned over the decades, going up as the power-hungry nation looked for ways to meet demand and driven down by nuclear accidents at home and abroad. Support for more nuclear power plants was 69 percent in 1977, the highest level ever recorded in a poll by The New York Times or CBS News.” However, events such as Three Mile Island and the Chernobyl disaster have caused sharp declines in support.

Politico (3/23, Epstein, 25K) adds that “in a CNN/Opinion Research Corporation poll released Tuesday, 53 percent of Americans said they oppose the construction of new plants, up from 47 percent in a CNN poll conducted in March 2010. Forty-six percent said they support the construction of new plants, down from 50 percent in last year’s poll. Support for building more nuclear plants breaks down along party lines, with 34 percent of Democrats and 57 percent of Republicans in favor of new plants.”

Meanwhile, Bill German writes at The Hill (3/23, 21K) “E2 Wire” blog that despite the drop in support for nuclear energy, “nuclear advocates might take heart in the rise in public support for expanded offshore drilling, which had dipped in the months after last year’s massive BP oil spill began. Pew’s poll this month shows that 57 percent of the 1,004 adults polled favor allowing more offshore oil-and-gas drilling in US waters, while 37 percent oppose it.”

Moreover, the Christian Science Monitor (3/23, 48K) reports that a new poll from the Civil Society Institute/OCR shows that the crisis in Japan “has dramatically eroded public support for building new nuclear power plants in the US, throwing into question the ‘nuclear renaissance’ hailed by industry advocates.” The poll “shows that a majority of Americans now favor halting new federal loan guarantees to support reactor construction.” Meanwhile, “Other surveys also show a serious weakening in support for nuclear-power development. While Gallup found 62 percent support for nuclear energy last March – the highest since the polling firm first asked the question in 1994 – support for new nuclear power has now dropped to 44 percent, a new USA Today/Gallup poll shows.”

Reuters (3/23, Doering) also covers the Pew Research Center for the People & the Press poll, in which 52% of respondents said they oppose new nuclear plants in the US, a 5% increase over last October. This piece also mentions the Civil Society Institute poll.

## **US Looks To Secure Radioactive Material Used At Hospitals.**

National Journal Daily (3/22), citing information from a Newsday report published on Monday, says the US "is spending millions of dollars to help hospitals reduce the potential for terrorists to acquire sufficient amounts of medical isotopes to build a radiological 'dirty bomb.'" Funding for the initiative comes from the National Nuclear Security Administration "as part of its initiative to assess and improve radioactive substance safeguards at almost 2,700 sites no later than 2020, according to NNSA Deputy Director Kenneth Sheely." Counterterrorism experts in the US "fear that widely used and inadequately secured devices that house radioactive materials could create an opening for terrorist organizations such as al-Qaeda to produce a dirty bomb, which would use conventional explosives to disperse radiological substance over a wide area," National Journal reported.

## **SRS' H Canyon Closure Could Keep Waste In State "Indefinitely."**

The Augusta (GA) Chronicle (3/23, Pavey) reports that members of the Savannah River Site Citizens Advisory Board told site officials Tuesday that "a plan to scale back operations at [SRS's] H Canyon could keep a still-growing inventory of spent nuclear fuel in South Carolina indefinitely." Rose Hayes, the board's nuclear materials committee chairwoman, said, "H Canyon has become very problematic lately," adding, "Right now, it is the disposition path for foreign and domestic spent nuclear fuel, and without H Canyon, there is no disposition path for this material." Allen Gunter, a senior DOE technical adviser, told committee members "that scheduled shipments of highly enriched spent fuel from research reactors in the US and abroad are still scheduled to arrive at the plant in coming years," and while the site was not intended as a permanent repository, it is still a safe area for storage.

## **Hanford Contractor Announces Layoffs As Stimulus Money Runs Dry.**

The Tri-City (WA) Herald (3/23, Cary) reports that almost 150 people at Hanford contractor Mission Support Alliance "learned Monday that they are losing their jobs at Hanford in the first round of layoffs linked to the end of federal economic stimulus money." While 68 employees had applied for a voluntary layoff, "to help make up the difference, [the contractor] notified 76 employees that they also would be laid off." While "Mission Support Alliance received none of the economic stimulus money directly, it increased staff to support other contractors, including hiring and providing training and information technology services." In total, the company expects to lay off 300 employees by the end of September.

**Hanford Lab Director To Discuss Japanese Nuclear Crisis, Domestic Impact.** The Tri-City (WA) Herald (3/23)

reports James Conca, director of the Waste Sampling and Characterization Facility, a radiological and environmental monitoring lab at Hanford, "will give a presentation today at Columbia Basin College that will include comments on the nuclear crisis in Japan and what it means for American nuclear plans." In a presentation titled "The Geopolitics of Energy: Achieving a Just and Sustainable Energy Distribution by 2040," Conca "will discuss how energy needs affect everything from the economy to national security. ... He also will discuss the Japanese Fukushima nuclear incident's effect on the US nuclear industry, geologic risks and how the latest reactor designs can handle such devastating events."

**Documents Show Possible DOE Involvement In Hanford Whistleblower Demotion.** NPR (3/23) reports, "Documents just surfacing from an ongoing lawsuit are raising questions about the demotion of a Hanford whistleblower and whether a top manager with the Department of Energy was involved." Walt Tamosaitis claims he was demoted last July "because of the questions he raised about the safety" of a radioactive waste treatment plant being built by Betchel and URS, his employer, at Hanford. Tom Carpenter with the watchdog group Hanford Challenge "says email strings found in this court process show that DOE was also involved in Tamosaitis' demotion." Said Carpenter, "The evidence is starting to come out that there certainly did appear to be some internal agreements to get him off the site and the project."

## **Obama's Economic Agenda Overshadowed By Domestic, World Events.**

USA Today (3/23, Page, 1.83M) reports President Obama "returns to the White House today after a six-day trip to Latin America that was intended to focus on jobs, trade and the economy — but the world just wouldn't cooperate." The "partial nuclear meltdown in Japan, a US military operation in Libya, a looming budget showdown in Washington and more have overwhelmed Obama's agenda, raised risks for the nation's fragile economic recovery and opened him to criticism from not only the emerging Republican presidential field but also some congressional Democrats."

## **Senate Panel To Hold Hearing On Costs Of Cybercrime.**

AFP (3/23) reports the Senate Commerce Committee announced yesterday plans to hold a hearing March 29 on "the economic costs of cyberattacks and cyber crimes like identity theft and hacker strikes on government computers." The panel said it "will explore how cyber attacks imperil America's economy, as well as examine the private sector's role in protecting networks from cyber exploitation and theft." The panel will hear testimony from "government officials, the private sector, and security specialists."

## **INTERNATIONAL NUCLEAR NEWS:**

**Power Supplied To Fukushima Reactors, But Radiation Still Leaking.** NBC Nightly News (3/22, story 5, 2:45, Williams, 8.37M) reported, "In Japan, radiation has now been found in the seawater near the nuclear plant as well as milk and vegetables from that region. At the Fukushima nuclear plant power cables have been attached to six reactors, but it could take days or weeks of safety checks before the water cooling systems are back up in operation."

The CBS Evening News (3/22, story 5, 2:30, Couric, 6.1M) reported, "Radiation continues to leak from those damaged nuclear reactors but progress is being made. ... Meanwhile, the official death toll from the earthquake and tsunami is approaching 10,000 with nearly 14,000 missing. More than a quarter million survivors have no homes or have been forced to leave them."

According to the AP (3/23, Talmadge, Yamaguchi), "The progress on the electrical lines at the Fukushima Dai-ichi nuclear power plant was a welcome and significant advance Tuesday after days of setbacks." However, Tokyo Electric Power "warned that workers still need to check all equipment for damage first before switching the cooling system on to all the reactor units -- a process that could take days or even weeks."

The Washington Post (3/23, Nakamura, Vastag, 605K) adds, "Concerned that the highly corrosive seawater might have damaged equipment, the plant's operator," Tokyo Electric "was 'checking each electrical device on each unit,' said Taro Ishida, a representative of the Federation of Electric Power Companies in Japan. ... In the meantime, the power company resumed rolling blackouts in many areas of Japan in an effort to conserve energy."

USA Today (3/23, Vergano, 1.83M) reports that "modeling by Austria's Central Institute for Meteorology and Geodynamics... suggests that the Japanese nuclear accident has released 20% as much radioactive iodine and 50% as much radioactive cesium -- most of it blown to sea -- as was released in Russia's 1986 Chernobyl accident."

The Wall Street Journal (3/23, A1, Shirouzu, Landers, 2.09M), in a front-page article titled, "Japan Ignored Warning Of Nuclear Vulnerability," reports that Japanese regulators were slow to address the Fukushima reactors' weaknesses. Takanori Tanaka, head of the Nuclear Power Engineering Center, said Japan's Nuclear Safety Commission "was just starting a basic discussion of the need to install more diverse safety cooling systems in future reactors."

**FDA Restricts Japanese Food Imports.** ABC World News (3/22, story 6, 2:33, Sawyer, 8.2M) reported, "Starting

immediately, the FDA has decided to block all milk, milk products, fruits and vegetables from coming into the United States from the affected regions of Japan. ... About 4% of the food America imports comes from Japan. Including processed fruits and vegetables, cookies, teas, chewing gum and seafood such as scallops, tuna, lobster, shrimp and salmon."

**Biden And Clinton Sign Condolence Book At Japanese Embassy.** AFP (3/23) reports Vice President Biden and Secretary of State Clinton "on Tuesday voiced admiration for the response of ordinary Japanese to the major earthquake as they pledged continued US support." Biden and Clinton "paid separate visits to the Japanese embassy in Washington to sign a condolence book for the thousands of victims. ... After spending several minutes writing his response, Biden said that the world has been impressed by the 'resolve of the Japanese people, the orderly way in which they are dealing with' the crisis."

**Tepco, Japanese Government Faulted For Lack Of Transparency.** In a piece appearing on the Counter Punch (3/22) website, disaster expert Gregory Button, faculty member at the University of Tennessee, wrote of the "increasing criticism" leveled against both the Japanese government and Tokyo Electric Power Company for their "handling of the nuclear crisis at the Fukushima Daiichi nuclear plant." Both are suspected of "withholding or manipulating vital information about the tragedy" and "even the Japanese press along with some diplomatic officials have lashed out at both parties for their failure to provide sufficient information." Button adds that NRC Chairman Gregory Jaczko recently "dispelled any doubts that there were grave inconsistencies in the way in which the Japanese government was representing the seriousness of the event when he gave a grimmer appraisal posed by the threat than that of the Japanese government." Button says governments and companies "often downplay a disaster" and provide overly optimistic appraisals, both to avoid public scrutiny and to safeguard corporate interests.

### **Japanese Nuclear Crisis Could Stymie Australian Plan To Sell Uranium To India.**

Reuters (3/23, Taylor) reports that a plan by Australian Prime Minister Julia Gillard's Labor government to relax a ban on selling uranium to India is facing challenges due to concerns generated by the Japanese nuclear crisis. India is not a signatory to the Nuclear Non-Proliferation Treaty, hence the ban. Reuters explains that moving forward with the plan to overturn the ban would drive a wedge between Labor and the Green party, threatening Gillard's coalition government.

**Merkel: Germany To Launch Two Panels To Study Nuclear Issues.** The Wall Street Journal (3/23,

Hromadko, Radowitz, 2.09M) reports that German Chancellor Angela Merkel has announced that Germany will set up two panels in the next few months to study technical and ethical aspects of the use of nuclear power. The piece quotes Merkel, "I don't rule out that the reviews will have an impact on life-spans" of German nuclear plants. The Journal notes that Italy is halting its new nuclear projects for at least a year.

### **Italian Government Set To Enact One-Year Moratorium On Further Nuclear Expansions.**

The Wall Street Journal (3/23, Renda, Moloney, 2.09M) reports that Italy's government is expected to enact a one-year halt on any new nuclear projects in response to the Japanese nuclear crisis. The Journal quotes Italian Industry Minister Paolo Romani, "Tomorrow the cabinet will declare a one-year moratorium on the decisions and start of procedures to select the sites of nuclear plants."

Reuters (3/23) runs similar content, noting that Italian officials have expressed a desire to reconsider whether its nuclear "relaunch" should go forward, given Italy's seismic activity levels.

### **Despite Greenpeace Objections, Canadian Regulators Approve Nuclear Plant Expansion.**

Reuters (3/23) reports that Greenpeace activists are working to prevent Canadian regulators from approving the expansion of a nuclear plant near Toronto, though the regulators are suggesting that the project at the Darlington plant will likely be approved, notwithstanding concerns raised by the Japanese crisis.

### **China Set To Begin Construction On Fourth-Generation Nuclear Plant.**

Bloomberg News (3/23, Sethuraman, Katakey) reports, "China will start building a nuclear power plant next month using fourth-generation technology that may be less susceptible to meltdown than Japan's damaged Fukushima Dai-Ichi plant." Construction is set to begin on the "first high-temperature, gas-cooled reactor" at Rongcheng in Shandong province, Bloomberg reports, adding, "The Rongcheng plant will use helium, an inert gas, in its cooling system, and reactor cores will be able to withstand temperatures exceeding 1,600 degrees Celsius (2,912 degrees Fahrenheit) for several hundred hours without melting down, China Business News said this week."

### **Turkey Seizes Arms From Iranian Cargo Plane.**

AFP (3/23, Bozarlan) reports Turkish authorities have "seized rifles on a Syria-bound Iranian plane, grounded since the weekend, and questioned its seven-man crew, police and judicial sources" said Tuesday. The cargo plane, which was ordered to land Saturday night on suspicion it was carrying illicit cargo, had "declared a cargo of spare car parts, but the

inspection resulted...in the discovery of a box containing automatic rifles, a police source" told AFP. The Iranian Embassy in Ankara "declined to comment."

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# NUCLEAR REGULATORY COMMISSION NEWS SUMMARY

WEDNESDAY, MARCH 23, 2011 7:00 AM EDT

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

## TODAY'S EDITION

### NRC News:

NRC Agrees To Work With State Officials On Indian Point Earthquake Review .....	1
NRC Issues 20-Year Operating License Extension For Vermont Yankee Plant .....	3
NRC Would Take Two-Pronged Approach To Confirm US Reactor Safety .....	3
IAEA Safety Report Says Some US Plant Upgrades Lacking .....	4
Federal Court Wants NRC Assessment Of Japan Crisis Implications For Oyster Creek .....	4
States Sue Over Lack Of Long-Term Nuclear Waste Storage Site .....	4
US Has Almost 72k Tons Of Spent Nuclear Fuel At Plant Sites ..	5
Alexander Says Disaster In Japan Will Sharpen Focus On Nuclear Safety .....	6
Sen. Graham Tours Duke Nuclear Plant, Vows Support For Nuclear Power .....	6
Japanese Crisis Puts Brakes On NRG's South Texas Expansion Plans .....	6
TVA Execs Discuss US Reactor Safeguards As Japan Struggles With Nuclear Crisis After Quake .....	7
NRC Inspecting Missouri Nuclear Plant Over Pump Lubrication Concern .....	7
Illinois Senators Organizing Nuclear Safety Forum .....	7
Lawmakers Express Grave Concerns About California Nuclear Plants In Fault Zones .....	8
Manufacturer Reports Potential Safety Issue At Browns Ferry ....	8
Babcock & Wilcox May Assist With Fukushima Daiichi Disaster .	8

NuScale Head Says Progress On Small Reactors Should Proceed .....	8
NRC May Update Fee Structure .....	8
Group Chides Poor Safety Performance At Robinson Plant .....	9
Secretary Chu's Public Role In Addressing Crisis Profiled .....	9
Polls Show Decline In US Support For Nuclear Power .....	9
US Looks To Secure Radioactive Material Used At Hospitals ...	10
SRS' H Canyon Closure Could Keep Waste In State "Indefinitely." .....	10
Hanford Contractor Announces Layoffs As Stimulus Money Runs Dry .....	10
Obama's Economic Agenda Overshadowed By Domestic, World Events .....	10
Senate Panel To Hold Hearing On Costs Of Cybercrime .....	10

### International Nuclear News:

Power Supplied To Fukushima Reactors, But Radiation Still Leaking .....	11
Japanese Nuclear Crisis Could Stymie Australian Plan To Sell Uranium To India .....	11
Merkel: Germany To Launch Two Panels To Study Nuclear Issues .....	11
Italian Government Set To Enact One-Year Moratorium On Further Nuclear Expansions .....	12
Despite Greenpeace Objections, Canadian Regulators Approve Nuclear Plant Expansion .....	12
China Set To Begin Construction On Fourth-Generation Nuclear Plant .....	12
Turkey Seizes Arms From Iranian Cargo Plane .....	12

## NRC NEWS:

### NRC Agrees To Work With State Officials On Indian Point Earthquake Review.

The New York Times (3/23, Kaplan, 1.01M) reports that longtime Indian Point power plant opponent, New York Gov. Andrew M. Cuomo – who has called the plant “a ‘catastrophe waiting to happen’ in part because of questions about its susceptibility to

a powerful earthquake,” welcomed an announcement from NRC officials Tuesday that the agency “would accelerate a planned review of Indian Point and would allow state officials to be part of the inquiry.” At a news conference, Cuomo said “It is imperative that we get it right, and that’s why we brought the urgency to the matter.” The Times adds the NRC had already planned to review earthquake “vulnerabilities at 27 nuclear plants, including Indian Point.” Tuesday, the commission agreed “to make Indian Point its first priority in

that review and to allow state experts to participate in the inspection.”

Reuters (3/23, Wiessner) adds that Cuomo said “It is essential that the NRC move quickly to answer the significant and long-standing safety questions surrounding Indian Point.”

Fox News’ “America’s Newsroom” (3/22, 9:30am) reported, “members of New York governor Andrew Cuomo’s staff are going to try to get some of those answers today as they meet with senior officials with the federal Nuclear Regulatory Commission known as the NRC in the next hour. We have confirmed this meeting is taking place at the NRC headquarters in Maryland to, again, address those concerns. Now, this is a government to government meeting, as we’ve been told, that will help New York state leaders gather further information on Indian Point’s earthquake vulnerabilities, preparedness and risk assessment.”

Bloomberg’s “Final Word” (3/22, 3:33, Carlin) reported, “The NRC officials told New York’s lieutenant governor that the Indian Point nuclear power plant is safe, and the ‘robust design of US plants makes it unlikely that a similar event could occur in the US.’” Indian Point “recently ranked number 1 for vulnerability among US nuclear reactors.”

NY1 Cable New York (3/22, 1:35am) broadcast, “Federal regulators say the Indian Point power plant will be their top priority. Officials from the NRC met with state leaders to address the plant’s overall safety and whether its license should be renewed in 2013. The NRC told the leaders they will share information with Albany and allow them to take part during inspections. The meeting was in response to the nuclear crisis in Japan. Indian Point sits less than 30 miles from the Bronx and sits on two fault lines.” NY1 Cable (3/23) also ran the story on its website. News 12 Cable Westchester, New York (3/22, 1:04am) ran a similar story in the early morning hours.

According to the Albany (NY) Times Union (3/23, Seiler), Cuomo said the “NRC had pegged the odds of damage to one of Indian Point’s reactors after a quake at 1 in 13,000.” In “what Cuomo said would be an ‘expeditious’ process, the NRC will share federal data on seismic risk at the plant with New York experts, and state personnel would join the commission’s staff – including Chair Greg Jaczko – for on-site inspection of the facility.”

WXXI-TV Rochester, New York (3/23, DeWitt) added on its website, Cuomo “did not say that the plant should definitively be shut down, but he did say that if the nuclear power plant is eventually deemed too great a risk to continue to operate, alternative sources of energy would have to be found to replace the power.”

Also covering the NRC meeting were the Wall Street Journal (3/23, Barrett, 2.09M), Westchester (NY) Journal News (3/23, Clary), Mid-Hudson (NY) News (3/23), Gothamist

(3/23, Signore) and WBNG-TV Binghamton, New York (3/22), among other outlets.

### ***NRC Says Indian Point, Other US Plants Are Safe.***

On its website, CNN (3/23, Ariosto) reports that NRC “regulators say that the plant is safe” and safety reviews take into account “even the most extreme conditions,” commission spokesman Neil Sheehan said.”

Bloomberg News (3/23, Lomax) reports that after meeting with New York officials, NRC issued a news release say the “The robust design of US plants makes it highly unlikely that a similar event could occur in the United States.” Bloomberg adds that while a “report last year found ‘slightly higher seismic risk for the Indian Point reactor,’ it was ‘still within safety margins,’ the NRC said.”

On its website, WABC-TV New York City (3/23, Monek) said, “The owner of the power plant has insisted the facility is not susceptible to the kind of earthquake and tsunami that rocked Japan. Entergy’s vice president, John McCann, told Westchester County legislators on Monday that the earthquake in Japan was much more powerful than any recorded around Indian Point.”

In a brief report, the AP (3/23) also notes McCann’s remarks to Westchester County legislators, adding “McCann said he expected changes to be made in response to the events in Japan, but he didn’t say what they would be.”

The Westchester (NY) Journal News (3/23, Clary) reports, “McCann said the earthquake that hit a coastal area 170 miles northeast of Tokyo was 1,000 times more powerful than anything recorded in this region, adding that the plant is too far inland to be hit by a tsunami.” McCann said Entergy has its backup systems protected for a safety margin above the 100-year flood mark. “The committee focused questions on the ability of the plant to contain radiation, to store spent fuel safely and to keep power flowing via backup generators and other systems until the reactors can be safely shut down.”

New Rochelle (NY) Patch (3/23, Taliaferro, Kenny) noted that at the meeting with Entergy and McCann, “lawmakers repeatedly raised concerns about the effectiveness of current evacuation plans, which only cover a 10-mile radius.” Rep. Peter Harckham “said that he was evacuated during the 1979 meltdown at the Three Mile Island plant in Pennsylvania, and that the plan ‘didn’t work. When I hear about evacuation, whether it’s 10 miles or 50 miles, I personally don’t have a lot of confidence,’ he said.”

***NRC Says Upstate Units Not At Risk From Seismic Threats.*** The Syracuse (NY) Post-Standard (3/23, Knauss, 97K) notes the “NRC’s reassessment of seismic data began in 2005” and an “initial review” of the 104 US plants “found no need for additional measures to protect four Upstate New York reactors, including three in Oswego County and one in Wayne County, said Neil Sheehan, speaking for the NRC.”

**Blog Coverage.** On its "Capital Confidential" blog, the Albany Times Union (3/23, Seiler, 83K) reports on Lt. Gov. Bob Duffy and state Director of Operations Howard Glaser meeting with NRC officials and the agency's "willingness to sign a memo of understanding that it would share federal data on seismic risk with New York experts, and that state personnel would be included in the commission's on-site inspection of the facility." Gov. Cuomo "pointed out that the plant's location has prompted worries about the difficulty of evacuation," and said "that if the current 50-mile 'circle of evacuation' around Japan's wounded Fukushima Daiichi Power Station was laid over Indian Point, 'you're talking all of New York City, you're talking about parts of Connecticut, you're talking about Long Island, you're talking about New Jersey.'"

On her "Daily Politics" blog for the New York Daily News (3/23, 527K), Celeste Katz said Cuomo had "demanded a top-to-bottom examination" of Indian Point and noted a "study by a group of leading Columbia University seismologists has revealed that two faults – the Ramapo and the Stamford-Peekskill – intersect just north of Indian Point." The NRC "agreed [to] share federal data regarding seismic risk specific to Indian Point with New York technical experts and include local experts on its inspection team. NRC Chair Greg Jaczko will inspect Indian Point personally." Cuomo said "We appreciate the NRC agreeing to move swiftly and we look forward to working closely with them on this issue to protect the health and safety of New Yorkers."

### **NRC Issues 20-Year Operating License Extension For Vermont Yankee Plant.**

In an updated version of an article that first appeared in yesterday's briefing, the Boston Globe (3/23, Daley, 253K) reports on the NRC announcement that it had "issued the Vermont Yankee nuclear power plant a 20-year license extension yesterday." Plant opponents had hoped an agency-ordered pause, called for after the Japanese earthquake and tsunami, "would translate into a deeper review of the plant, which has the same design as the crippled Fukushima Daiichi nuclear facility in Japan that is releasing radioactive material." But Vermont Yankee spokesman Larry Smith said the "comes after five years of careful and extensive review and confirms that Vermont Yankee is a safe, reliable source of electricity and capable of operating for another 20 years."

On its website, WCAX-TV Burlington, Vermont (3/22, Carlson) reported, "A group of Vermont lawmakers now want the NRC to suspend the license extension until regulators take another look at safety at the Vernon plant. They also want as much radioactive material as possible removed from the water in the spent fuel pool and instead put into dry cask storage." State Rep. David Deen said the plant may be in "a

seismically inactive area but we do face the power of water if nature decides to inundate the Vermont Yankee plant."

On its website, WBUR-FM Boston (3/22, Pfeiffer) reported that "Vermont is the only state that requires legislative approval for the re-licensing of nuclear plants — and last year the Vermont Senate voted against reissuing a new license for Vermont Yankee, whose current license expires in April 2012." The page provides a link to listen to the report.

In a press release (3/22), the anti-nuclear group, Beyond Nuclear "decried the reckless decision-making by the Nuclear Regulatory Commission on March 21 to grant a 20-year license extension to the Vermont Yankee reactor, the same Mark I design as the severely damaged Fukushima Dai-ichi reactors still in an extremely dangerous state in Japan." The group wants the "public to write letters and make calls to the NRC and Congress, to whom the NRC is responsible, condemning this outrageous gamble with public safety."

**Vermont Regulators Poised To Renew Yankee's Water Discharge Permit.** The Keene (NH) Sentinel (3/22, Jarvis, 11K) reported that the Vermont Agency of Natural Resources "plans to renew a permit allowing the Vermont Yankee nuclear power plant to discharge water into the Connecticut River." The decision comes after the Connecticut River Watershed Council petitioned "to review the permit once it's issued so it can examine potential effects on fish populations." The Sentinel adds David L. Deen, of the watershed council noted that an alternative to allowing the plant to "discharge water into the river" would be to have "them to use their cooling towers to return the water back to regular temperatures before discharging it back into the river," he said." But Deen, and others concerned about the effects of the warmer discharge water on aquatic life, said Yankee would have to use its own energy to do that.

**Blog Coverage.** On his blog for Forbes (3/22, 914K), Osha Gray Davidson wrote that the NRC announcement "surprised many because of its timing." Davidson notes that Entergy-owned Vermont Yankee "has a containment vessel identical to the ones at the crippled Fukushima Dai-ichi nuclear power plant — a GE Mark I." In a statement following the announcement, Vermont Sens. Patrick Leahy and Bernie Sanders, along with Rep. Peter Welch, said, "It is hard to understand how the NRC could move forward with a license extension for Vermont Yankee at exactly the same time as a nuclear reactor of similar design is in partial meltdown in Japan."

### **NRC Would Take Two-Pronged Approach To Confirm US Reactor Safety.**

ClimateWire (3/22, Behr) reported NRC Executive Director for Operations, Bill Borchardt said he was "100 percent confident from the review

that we've done and continue to do every single day that we have a sufficient basis to conclude that the US plants continue to operate safely." Even so, Borchardt advised that NRC staff "undertake two additional investigations to confirm the ability of US nuclear reactors to withstand an extreme natural disaster coupled with the loss of outside power, the overheating of reactor cores and spent fuel, and the resulting explosions that struck the Fukushima Daiichi nuclear plant." The first such inspection – a "quick look" check by veteran NRC staff – would confirm that protective and emergency measures are in place and ready for use, while a "deeper inquiry would have to await more evidence" from the Fukushima reactor investigation.

### **IAEA Safety Report Says Some US Plant Upgrades Lacking.**

Reuters (3/23, Doggett) reports that two days before the earthquake and tsunami struck Japan and created a crisis at the Fukushima plant, IAEA watchdogs sounded the alarm about safety at some older US nuclear plants. The IAEA evaluated NRC oversight of the US nuclear industry at the request of the agency and said in its report that "licensee actions to upgrade the quality and reliability of the operating facilities to strive for their safety enhancement appears to be less than in many other countries where aging facilities are in operation." Reuters adds the NRC said it would carefully review the IAEA's conclusions. However, NRC spokesman Scott Burnell said, "We cannot unilaterally impose new requirements unless there is a solid technical base for doing so."

### **Federal Court Wants NRC Assessment Of Japan Crisis Implications For Oyster Creek.**

Concerns about the 2009 renewal of the Oyster Creek Nuclear Generating Station in light of the Japanese nuclear crisis generated a number of stories in New Jersey and elsewhere. The Newark (NJ) Star-Ledger (3/23, Spoto, 248K) reports that the US 3<sup>rd</sup> Circuit Court of Appeals in Philadelphia has written to the NRC seeking information on "what impact the damage to Japan's nuclear reactor may have on the 2009 relicensing of the Oyster Creek Nuclear Generating Station." Noting that the Fukushima plant in Japan is "nearly a carbon copy of the Oyster Creek plant," the Star-Ledger adds that Oyster Creek got a 20-year extension in 2009. However, "The Sierra Club of New Jersey contends the court's request is tantamount to advising the NRC to reconsider its approval."

The Asbury Park (NJ) Press (3/23, Moore) reports that the letter asks if "events at the Fukushima Daiichi reactor site have changed the agency's thinking about the wisdom of granting" Oyster Creek's license extension, and "asks 'what impact, if any, the damages from the earthquake and tsunami...have on the propriety of granting the license renewal application' for Oyster Creek." This piece notes that

the NRC "conferred Monday morning on a plan to quickly evaluate American nuclear plants and their safety preparations against what is known so far about the Japanese accidents."

The Chicago Tribune (3/23, Sachdev, Wernau, 488K) adds that the court "put Chicago-based Exelon Corp. on notice Monday that it will have to answer to more than the US Nuclear Regulatory Commission in the wake of the nuclear disaster in Japan." The Tribune notes that the Oyster Creek plant "is part of a lawsuit that began long before the earthquake" which "had drawn little attention until now and could renew questions about extending the life span of some of the nation's oldest nuclear plants." Patch.com (3/23, Miller) also covers this.

On his MSNBC's "Hardball with Chris Matthews" (3/22, 7:50pm) show, Chris Matthews visited anti-nuclear activists Kate Sheppard of Mother Jones and Joanna Neumann from Public Interest Research Group to discuss relicensing and safety of the US nuclear fleet. Both guests were against relicensing. Neumann said since "1990, there have been four critical instances identified by the NRC at nuclear reactors in South Carolina, Ohio, and three of those plants where the critical instances have happened have actually had their licenses extended, so, you know, the idea that safety problems are only happening in Japan is not true."

### **States Sue Over Lack Of Long-Term Nuclear Waste Storage Site.**

The CBS Evening News (3/22, story 7, 2:30, Couric, 6.1M) reported, "Today a Federal Appeals Court heard arguments in a lawsuit over what to do with spent fuel rods," with South Carolina and Washington "taking the lead on a major problem for many states" that want the NRC to "provide a place to permanently store highly radioactive waste." David Lochbaum, Union of Concerned Scientists: "The federal government has failed the American public by not dealing with spent nuclear fuel for decades." CBS noted that "plans to make Yucca Mountain in Nevada a long-term storage site were scuttled by the Obama Administration a year ago after 20 years of planning costing \$14 billion." NRC chair Gregory Jaczko: "We are looking at a longer time frame for storage of spent fuel than we have in the past, but...we believe that spent fuel certainly can be stored safely and securely with the existing system."

According to the AP (3/23, Pickler), "Arguments before a three-judge panel of the appeals court in Washington focused on whether the federal government has made a final decision yet that the states can appeal. Last year, the Energy Department filed a motion with the Nuclear Regulatory Commission to withdraw its application for the Yucca Mountain repository. The commission has not ruled on that motion, but the Energy Department has gone ahead with dismantling the project."

McClatchy (3/23, Rosen) reports Washington Assistant Attorney General Andrew Fitz argued "that Obama's refusal to fund continued development of the Nevada disposal site violates the 1982 Nuclear Waste Policy Act. 'He's acting unconstitutionally under the separation of powers doctrine because he doesn't have the authority under the statute,' Fitz told a three-judge panel of the US Court of Appeals for the District of Columbia Circuit. 'He had no authority to reverse it.'"

WHNT-TV Huntsville, AL (3/23, 4.48 a.m. CT, 522) reports that "South Carolina and Washington state went to court Tuesday demanding the Nuclear Regulatory Commission find a place to permanently store radioactive waste." WHNT-TV added that "some say the waste is a national security threat, and a danger to those who live nearby, because the storage tanks were never meant to be a permanent solution."

**Judges Suggest Suit May Be Premature.** A "Greenwire" story appearing on the New York Times (3/23, Northey, 1.01M) website adds that the three-judge panel "seemed to agree the petitions were filed too early, before the government had made a final decision that could be legally challenged." The article explains that the "NRC is currently deciding whether to allow DOE to withdrawal its application to develop the repository." Although it remains unclear whether the DOE would comply with the NRC's decision, Judge Brett Kavanaugh asked, "Why shouldn't we wait for the NRC to act?"

The Las Vegas Review-Journal (3/23, Tetreault, 178K) adds that Chief Judge David Sentelle asked, referring to the lack of a final decision from the NRC, "What has the NRC done that you allege has caused harm to your party?" Fitz responded, "The key issue here and it is incredibly frustrating, is the finality issue is a smokescreen." Justice Department attorney Ellen Durkee, who is representing the DOE and NRC, argued that without a final ruling from the NRC, "there is no agency action for the court to review."

**Barbour Expresses Support For Yucca During Nevada Trip.** The Las Vegas Sun (3/23, Damon, 41K) reports Mississippi Gov. Haley Barbour, a potential Republican Presidential candidate, visited Nevada Tuesday, where he "was forthright about his unconditional support for storing nuclear waste at Yucca Mountain." Barbour said, "We've been collecting taxes for that specific purpose and the American people should get their money's worth." When asked whether that would hurt his chances in Nevada, "Nah," he said before turning to the next question.

Also covering Barbour's trip, the Las Vegas Review-Journal (3/23, Myers, 178K) adds that the Mississippi governor said that the nuclear crisis in Japan hadn't changed his thinking about funding and building the nuclear waste repository in Yucca Mountain.

**US Urged To Look To Japanese Crisis As Support For Yucca.** Rick Martinez writes in his column for the Raleigh News & Observer (3/23, 146K) that "even if the Japanese earthquake experience further slows the development of nuclear power here, it should not slow the drive to open Yucca," because if the Japanese experience teaches us anything, it is that "storing spent fuel rods at a nuclear plant is dangerous and an easily avoidable risk." According to Martinez, "the need for isolated nuclear waste storage facilities is separate from the debate about whether nuclear power is safe enough to continue as a major component of our energy portfolio," and he hopes that nuclear energy opponents and supporters can find agreement on this issue.

Najmedin Meshkati, a professor of civil/environmental and industrial and systems engineering at the University of Southern California, writes in an op-ed for McClatchy (3/23) that "we have to learn lessons from Fukushima and count our blessings in the United States. And urgently start, before it is again too late, decommissioning the highly risky spent fuel pools, now scattered all over the country in 33 states," which can be achieved by approving and building the Yucca Mountain repository. Meshkati concludes that "in the age of probable impossibilities, we cannot afford to stick to wishful thinking or romantic fascination of the improbable failure of even a single one of these 65 dangerous sites."

**US Has Almost 72k Tons Of Spent Nuclear Fuel At Plant Sites.** According to state-by-state numbers obtained by the AP (3/23, Fahey, Henry), the US has 71,862 tons of spent nuclear fuel and radioactive waste. "Three-quarters of the waste sits in water-filled cooling pools like those at the Fukushima Dai-ichi nuclear complex in Japan, outside the thick concrete-and-steel barriers meant to guard against a radioactive release from a nuclear reactor. ... The rest of the spent fuel from commercial US reactors has been put into dry cask storage, but regulators only envision those as a solution for about a century and the waste would eventually have to be deposited into a Yucca-like facility."

The Los Angeles Times (3/23, Vartabedian, 681K) adds that when nuclear power plants were initially constructed in the US, "the utilities erroneously thought the pools would be for temporary storage only: The federal government had promised it would find a safe place to bury the used-up fuel rods, which remain radioactive for thousands of years." But the deadlock over Yucca has "kept the decaying radioactive material stationary for decades, accumulating across the country ever since the Eisenhower administration. Now the nuclear disaster in Japan, in which at least one spent fuel pool seems to be damaged and leaking and may have caught fire, has thrown US decisions about its own waste into sharp

focus, exposing what many scientists call a serious compromise in safety."

In a story that focuses on the threat posed by spent nuclear fuel in the crisis in Japan, Reuters (3/22) discusses how the US has addressed the same issue, or, depending on who you ask, has failed to address the issue. David Lochbaum, a nuclear engineer with the Union of Concerned Scientists, said that after plans for permanent storage sites faltered, "We just filled the pools up to capacity without ever rethinking whether we should provide better safety or barriers." But former NRC chairman Richard Meserve said that steps taken by the NRC after the September 11 attacks have increased safety at temporary storage site. Said Meserve, "We have some safety systems in the US reactors that may not be present at the Japanese reactors."

**Massachusetts Officials Press NRC On Spent Fuel Storage.** The Beverly (MA) Citizen (3/22, 4K) reported Massachusetts "Attorney General Martha Coakley and Senate President Therese Murray are urging" NRC regulators to "reexamine the safety of storing spent fuel rods in wet pools at the Pilgrim and Vermont Yankee power plants." In a letter to the NRC and DOE, Coakley and Murray indicate "the NRC has repeatedly rejected the contention by Attorney General's Office that 'wet fuel on-site dense storage' creates an environmental risk, but has failed to disclose the full studies to the state on which their decisions have been based." Coakley and Murray want the NRC to "consider mandating additional 'dry cask storage' at the two plants."

**Alexander Says Disaster In Japan Will Sharpen Focus On Nuclear Safety.** The Kingsport (TN) Times-News (3/22, Hayes, 39K) reported, "US Sen. Lamar Alexander downplayed on Monday any impact that Japan's nuclear crisis might have on the future of nuclear power in the United States." Alexander, who toured construction of the TVA's "\$800 million natural gas-powered John Sevier plant" in Tennessee, said "that a minimum, what happened in Japan has caused nuclear power advocates to stop and take a look at best safety practices."

**Sen. Graham Tours Duke Nuclear Plant, Vows Support For Nuclear Power.** WYFF-TV Greenville, SC (3/23) reports on its website that after touring Duke Energy Nuclear Plant, Sen. Lindsey Graham declared that he still supports nuclear energy. Graham said, "This nuclear plant I live five miles away. I've lived in this area all of my life. A lot of the people I've grown up with work here. I have faith in the American nuclear power industry. We're preparing to build two new reactors in South Carolina and one in Georgia. I think it is imperative we move forward." Graham noted differences between the Duke Energy plant and the one devastated in Japan and said that an earthquake of the

magnitude that struck Japan could never occur "in this area of America." Duke Energy brought Graham and media "inside the control room of reactors one and two."

Graham took the tour, the State (SC) (3/23, Fretwell, 87K) reports, "aware that events in Japan have increased concern about nuclear safety." Lessons will be learned from the Japanese situation, Graham promised, but it "should not slow the push to develop new reactors." The NRC finding from last March that showed "the Oconee plant had problems last year with clogs in a line," which were followed up by unsatisfactory actions by Duke Energy were spun positively by Graham. The Senator said the incident, which caused NRC to place Oconee on a list for low-performing safety, proves US nuclear regulation work. "Duke and NRC officials at Tuesday's media tour said the problems have been addressed."

The Anderson (SC) Independent-Mail (3/22) adds that while touring Duke's Oconee Nuclear Station, Sen. Graham learned that the plant can be shut down with the push of one button. According to Graham, renewable sources like wind and solar cannot replace power generated from coal, but nuclear power can. "Graham said he fears that the nation's nuclear power renaissance could be threatened by calls for a moratorium on new plants." The Senator also commended federal nuclear regulations, including the posting of NRC inspectors "stationed at every nuclear plant in the nation year-round." In remarks, Graham also praised the Administration's proposal for \$36 billion in loan guarantees for new reactors. The tour was the first time Duke Energy allowed cameras into its "football-field-sized turbine/generator room and a control room for two of the reactors" since 2007.

However, WSPA-TV Asheville, NC (3/22, Kanady) observes on its website that cameras have not been allowed into the plant since just after the September 11<sup>th</sup> attacks. According to Graham, the biggest threat to Oconee remains the accidental release of radiation. Graham applauded Oconee procedures, saying, "This plant has a lot of redundancies when it comes to cooling the reactor." The Senator also acknowledged it's too early to discern the lessons from the Fukushima disaster.

The Greenville (SC) News (3/23, Simon) notes, "Nuclear power is clean and safe, Graham said. His single concern is spent fuel storage, and Graham said he is calling on the Obama administration to rebate the money that utility ratepayers have been paying to build a long-term repository at Yucca Mountain in Nevada."

**Japanese Crisis Puts Brakes On NRG's South Texas Expansion Plans.** The Wall Street Journal (3/23, Smith, 2.09M) reports that NRG Energy CEO David Crane said this week that as a result of the Japanese nuclear crisis, his firm's plans to build two new reactors at that South

Texas Nuclear Generating Station may be delayed or canceled. The Journal refers to this as the most serious response yet in the US to the crisis, noting that San Antonio-based CPS Energy is backing out of talks with NRG to buy electricity from the proposed new plants.

Meanwhile, the Houston Business Journal (3/23) reports that Nuclear Innovation North America is waiting for NRC's final assessment of the Japanese crisis before proceeding with its plans to expand at the South Texas facility, noting that NINA "is the company jointly owned by NRG Energy Inc. and Toshiba Corp. that is developing two nuclear reactors at the South Texas Project near Bay City, about 80 miles from Houston." The firm "will limit work on the South Texas Project expansion to securing a license and a federal loan guarantee for the nuclear project."

**NRG Chief Warns Against "Crippling" Cuts To Federal Renewable Energy Loan Guarantees.** Dow Jones Newswires (3/23, Malik) reports that Crane said Tuesday that if the Federal government cut loan guarantees for nuclear and renewable energy products, "the power industry in the United States will become all gas all the time. Would it cripple nuclear or renewables? I think it would."

**TVA Execs Discuss US Reactor Safeguards As Japan Struggles With Nuclear Crisis After Quake.** The AP (3/23) reports, "Two executives with the Tennessee Valley Authority said Tuesday that their information and analysis indicate the utility's six reactors would have weathered a powerful earthquake like that which prompted Japan's nuclear emergency, a claim that drew skepticism from an environmental activist." AP says "TVA's senior nuclear communications manager Ray Golden and chief nuclear officer Preston Swafford discussed Japan's nuclear emergency with reporters in Huntsville in describing safeguards at TVA's nuclear plants along the Tennessee River in Tennessee and Alabama." Notably, "Swafford said some of the differences with Japan's plants stem from 'redundant' safety and power systems" that were set up after the September 2001 terrorist attack.

Swafford also said that "the Japanese reactors handled an earthquake 10 times bigger than they were designed for," noting that "the plant was doing a normal shutdown until the tsunami struck. Then the emergency diesel generators and switch gear failed," reports the Scottsboro (AL) Daily Sentinel (3/23, Bonner, 5K).

On its website and on the air, WAAY-TV Huntsville, Alabama (3/22, Reid) reported that "the TVA is addressing concerns about the Browns Ferry Nuclear plant following the disaster in Japan." The report said that "because of the catastrophe, officials are reviewing safety procedures." Chief Operating Officer Bill McCollum said, "We also challenged our

operations to see if there are lessons learned that we can apply from Japan."

**NRC Inspecting Missouri Nuclear Plant Over Pump Lubrication Concern.** The AP (3/23) reports that after indications that an auxiliary feedwater pump at Ameren Corp.'s Callaway nuclear plant in Missouri may not have been lubricated correctly, an NRC inspection team is on site to investigate. However, "an Ameren spokesman says the inspection is unrelated to heightened concerns at nuclear plants following the damage to the plant in Japan."

The Fulton (MO) Sun (3/23, Norfleet, 4K) reports also covers the "special inspection," noting that an Ameren spokesperson "said the inspection is the lowest of three NRC inspection levels that go beyond the normal, ongoing inspections conducted by the resident NRC inspectors based at the plant," adding that the "current inspection is in response to a Feb. 8 routine oil sample taken during normal maintenance on a pump. The oil showed discoloration, Cleary said, and a subsequent inspection of the pump bearing found some wear."

**Illinois Senators Organizing Nuclear Safety Forum.** The AP (3/23, Webber) reports, "Illinois Sens. Dick Durbin and Mark Kirk have asked federal and state nuclear experts to attend a forum to discuss the safety of the state's nuclear reactors" and the Illinois' emergency preparedness. NRC officials have signed on to attend, as have representatives of the Illinois Emergency Management Agency, Exelon Corp., and environmental advocacy groups. "Some watchdog and environmental groups, however, have said they're concerned that four of the state's 11 reactors -- at the Dresden and Quad City generating plants -- are of the same design and about the same age as those involved in Japan's nuclear crisis."

**Obama's Dealings With Exelon In Illinois Shaped Views on Nuclear Power.** Noting that Illinois generates more electricity from nuclear power than any other state, Bloomberg News (3/23, McCormick) reports that President Obama's "relationship with Exelon, the nation's largest US nuclear power producer, led his top 2008 Democratic primary opponent, then-Senator Hillary Clinton of New York, to charge that he had 'cut some deals' with the industry." Bloomberg notes the concerns about nuclear power being voiced by Durbin and Kirk, touching on their impasse with the Obama Administration over its cancellation of the Yucca Mountain project. Meanwhile, Bloomberg discusses President Obama's "handling of political concerns in 2005-2006 from radioactive tritium leaks at Illinois reactors" and his "battles over disposal of nuclear waste, an issue Kirk is raising following the Japanese disaster." This piece also mentions the forum being organized by Kirk and Durbin.

## Lawmakers Express Grave Concerns About California Nuclear Plants In Fault Zones.

The Christian Science Monitor (3/23, 48K) reports on concerns expressed by California state legislators and members of the state's Federal delegation "are ratcheting up pressure on the Golden State's two operating nuclear power plants – both, like Japan's stricken Fukushima I, located in seismically active regions near the Pacific coastline." The Monitor describes a Sacramento "legislative hearing Monday" at which lawmakers faulted "the overconfidence of engineers and plant employees" and "raised concerns that recent geological evidence indicated a higher earthquake risk for both plants than their designers anticipated." Meanwhile, "US Sens. Barbara Boxer and Dianne Feinstein, both California Democrats, sent a letter on March 16 to the Nuclear Regulatory Commission calling for a 'thorough inspection' of the two plants."

Southern California Public Radio (3/23) adds that the state lawmakers are seeking "a better grasp of the risks of a nuclear accident here. They're pressuring the utilities that operate California's nuclear power plants to complete new seismic studies." Noting that the earthquake in Japan far exceeded projections of potential magnitude, this piece adds that it was also "was 900 times more powerful than Northern California's 1989 Loma Prieta quake."

Meanwhile, the Ventura County (CA) Star (3/23, Herdt, 70K) reports that state Sen. Sam Blakeslee (R) has accused PG&E of operating the Diablo Canyon plant "under 'a culture of disregard of risk'" and is calling on the company "to suspend or withdraw its application for license renewal until the company has completed advanced seismic studies requested by state regulators three years ago. Blakeslee, R-San Luis Obispo, a geophysicist whose district includes the site of the nuclear plant, along the coast of San Luis Obispo County, said Monday that PG&E has consistently downplayed the risks associated with the discovery of an offshore earthquake fault line in 2008."

## Manufacturer Reports Potential Safety Issue At Browns Ferry.

On its website and on the air, WAFF-TV Huntsville, Alabama (3/22, Do) reported, "Workers at TVA's Browns Ferry nuclear plant are closely monitoring the water coming in and out of the plant, after a parts manufacturer recently notified TVA of a possible issue with some important pieces to its reactors." The TV station said the nuclear plant "is one of more than two dozen nuclear plants nationwide that use GE Hitachi control rods or blades in its boiling water nuclear reactors." Notably, "GE Hitachi discovered extensive cracking in some rods at a nuclear plant overseas – a defect which could create a safety hazard."

In a separate story on its website and on the air, WAFF-TV (3/22, Do) reported that "TVA officials are keeping a close

eye on what went wrong with Japan's reactors and what can be improved for the future for Browns Ferry Nuclear Plant." Tennessee Valley Authority CEO Bill McCollum says "the Browns Ferry plant has another thing the Japanese reactors do not have: a hardened vent system that would help prevent a build-up of hydrogen from the reactors containment structures."

## Babcock & Wilcox May Assist With Fukushima Daiichi Disaster.

The AP (3/23) reports that Babcock & Wilcox revealed that "it is in talks with Toshiba to provide nuclear technical assistance and services to secure and maintain the safety of the nuclear power plants at Fukushima Daiichi." The Japanese government and Tokyo Electric Power Co. are being helped with the disaster by Toshiba. Terms of the Babcock & Wilcox-Toshiba pact have not been revealed.

The Charlotte (NC) Business Journal (3/23, 14K) adds that Babcock & Wilcox has no Japanese operations and continues normal worldwide operations. Toshiba has been assisting the disabled plant by working "reinstate power in the region." Babcock & Wilcox CEO Brandon Bethards said, "We are saddened by the loss of life and devastation that has occurred as a result of the earthquake and tsunami in Japan. Our thoughts are with those affected by this tragedy as well as those who continue to recover from its aftermath. Babcock & Wilcox is prepared to support Toshiba's efforts to stabilize the Fukushima Daiichi nuclear power units." The AP (3/22) and the International Business Times (3/22) also report this.

## NuScale Head Says Progress On Small Reactors Should Proceed.

Bloomberg News (3/23, Lippert, Van Loon/Bloomberg) reports, "Nuclear engineer Jose Reyes jolted awake at 4:45 a.m. on March 11 when his son called to warn him that a massive earthquake had unleashed a tsunami that rocked Japan. Giant waves were heading for the Oregon coast, about an hour from Reyes's Corvallis office." Reyes, "55, who founded NuScale Power Inc. in 2007 to design a slimmed-down, 45-megawatt reactor, contemplated the blot on the already beleaguered nuclear industry – and the prospects for his nascent company, Bloomberg Markets magazine reports in its May issue. 'We've been hard-pressed but not crushed,' he says. 'Stopping the progress being made would be a mistake.'"

## NRC May Update Fee Structure.

The Energy Business Review (3/22) reports that NRC may amend its fee, licensing regulation, and inspection schedule for FY2011. During FY2011, the agency must recover 90% of its budget from fees it collects and return them to the US Treasury. "Based on the fiscal year 2011 budget, the NRC's total amount of fees to be recovered by 30 September is

approximately \$915.3m, about less than 1% (\$0.4m) more than in fiscal year 2010.”

**Group Chides Poor Safety Performance At Robinson Plant.** ABC affiliate, WPDE-TV Myrtle Beach, South Carolina (3/23, 1:37am) broadcast, “A report that criticizes operations at the Robinson nuclear power plant is out and officials that Hartsville plant is speaking out.” The Union of Concerned Scientists “say unbelievably poor worker performance” contributed to problems at the plant when operators reported two fires within hours of each other.

**Secretary Chu’s Public Role In Addressing Crisis Profiled.** Under the headline “Problem Solver At Helm As US Faces Test On Nuclear,” Reuters (3/23, Gardner) profiles Energy Secretary Steven Chu, citing his resume, highlighting the award of a Nobel Prize in Physics and his role during the BP oil spill, to argue that he is probably better suited to address the technical issues surrounding the Japanese nuclear crisis than previous officials to fill his post. But Reuters adds that Chu’s technical expertise may not be what Americans need to feel safe from nuclear disaster. After discussing the Secretary’s recent efforts to explain the risks, both in Japan and to the US, on Capitol Hill and to the public, the article quotes William Phillips, a professor at the University of Maryland who shared the Nobel Prize with Chu, who said, “One of the problems with the kind of reactions the general public has to nuclear power is very often they are not based on evidence, but feelings.”

Meanwhile, in its “E2 Wire” blog, The Hill (3/23, Geman, Restuccia, 21K) reports that Secretary Chu “will speak Wednesday at a Pew Environment Group forum on clean energy, an appearance that comes days after Chu suggested the Japanese nuclear reactor crisis could influence the siting of future US nuclear plants” during an interview on “Fox News Sunday.” Said Chu, “Certainly where you site reactors and where we site reactors going forward will be different than where we might have sited them in the past, I would say.” According to the blog, his “brief comment drew widespread attention — tomorrow he could face more questions about the impact of the crisis in Japan.”

**Polls Show Decline In US Support For Nuclear Power.** A series of new polls showing sharp declines in US support for nuclear energy generated coverage in national media outlets. The CBS Evening News (3/22, story 6, 0:25, Couric, 6.1M) reported, “About half of Americans say they’re concerned about radiation from Japan reaching the United States. About seven in ten say they believe nuclear power plants here in the US are generally safe, but more than six in ten don’t want one built near where they live. And 58% say the US government is not prepared for a nuclear accident.”

The New York Times (3/23, Cooper, Sussman, 1.01M) reports that a new CBS News poll shows that “what had been growing acceptance of nuclear power in the United States has eroded sharply in the wake of the nuclear crisis in Japan, with support for building nuclear power plants dropping slightly lower than it was immediately after the accident at the Three Mile Island plant in 1979.” Forty-three percent of respondents “would approve of new US reactors, down from 57% in 2008. ... Support for nuclear power has waxed and waned over the decades, going up as the power-hungry nation looked for ways to meet demand and driven down by nuclear accidents at home and abroad. Support for more nuclear power plants was 69 percent in 1977, the highest level ever recorded in a poll by The New York Times or CBS News.” However, events such as Three Mile Island and the Chernobyl disaster have caused sharp declines in support.

Politico (3/23, Epstein, 25K) adds that “in a CNN/Opinion Research Corporation poll released Tuesday, 53 percent of Americans said they oppose the construction of new plants, up from 47 percent in a CNN poll conducted in March 2010. Forty-six percent said they support the construction of new plants, down from 50 percent in last year’s poll. Support for building more nuclear plants breaks down along party lines, with 34 percent of Democrats and 57 percent of Republicans in favor of new plants.”

Meanwhile, Bill German writes at The Hill (3/23, 21K) “E2 Wire” blog that despite the drop in support for nuclear energy, “nuclear advocates might take heart in the rise in public support for expanded offshore drilling, which had dipped in the months after last year’s massive BP oil spill began. Pew’s poll this month shows that 57 percent of the 1,004 adults polled favor allowing more offshore oil-and-gas drilling in US waters, while 37 percent oppose it.”

Moreover, the Christian Science Monitor (3/23, 48K) reports that a new poll from the Civil Society Institute/OCR shows that the crisis in Japan “has dramatically eroded public support for building new nuclear power plants in the US, throwing into question the ‘nuclear renaissance’ hailed by industry advocates.” The poll “shows that a majority of Americans now favor halting new federal loan guarantees to support reactor construction.” Meanwhile, “Other surveys also show a serious weakening in support for nuclear-power development. While Gallup found 62 percent support for nuclear energy last March – the highest since the polling firm first asked the question in 1994 – support for new nuclear power has now dropped to 44 percent, a new USA Today/Gallup poll shows.”

Reuters (3/23, Doering) also covers the Pew Research Center for the People & the Press poll, in which 52% of respondents said they oppose new nuclear plants in the US, a 5% increase over last October. This piece also mentions the Civil Society Institute poll.

## **US Looks To Secure Radioactive Material Used At Hospitals.**

National Journal Daily (3/22), citing information from a Newsday report published on Monday, says the US "is spending millions of dollars to help hospitals reduce the potential for terrorists to acquire sufficient amounts of medical isotopes to build a radiological 'dirty bomb.'" Funding for the initiative comes from the National Nuclear Security Administration "as part of its initiative to assess and improve radioactive substance safeguards at almost 2,700 sites no later than 2020, according to NNSA Deputy Director Kenneth Sheely." Counterterrorism experts in the US "fear that widely used and inadequately secured devices that house radioactive materials could create an opening for terrorist organizations such as al-Qaeda to produce a dirty bomb, which would use conventional explosives to disperse radiological substance over a wide area," National Journal reported.

## **SRS' H Canyon Closure Could Keep Waste In State "Indefinitely."**

The Augusta (GA) Chronicle (3/23, Pavey) reports that members of the Savannah River Site Citizens Advisory Board told site officials Tuesday that "a plan to scale back operations at [SRS's] H Canyon could keep a still-growing inventory of spent nuclear fuel in South Carolina indefinitely." Rose Hayes, the board's nuclear materials committee chairwoman, said, "H Canyon has become very problematic lately," adding, "Right now, it is the disposition path for foreign and domestic spent nuclear fuel, and without H Canyon, there is no disposition path for this material." Allen Gunter, a senior DOE technical adviser, told committee members "that scheduled shipments of highly enriched spent fuel from research reactors in the US and abroad are still scheduled to arrive at the plant in coming years," and while the site was not intended as a permanent repository, it is still a safe area for storage.

## **Hanford Contractor Announces Layoffs As Stimulus Money Runs Dry.**

The Tri-City (WA) Herald (3/23, Cary) reports that almost 150 people at Hanford contractor Mission Support Alliance "learned Monday that they are losing their jobs at Hanford in the first round of layoffs linked to the end of federal economic stimulus money." While 68 employees had applied for a voluntary layoff, "to help make up the difference, [the contractor] notified 76 employees that they also would be laid off." While "Mission Support Alliance received none of the economic stimulus money directly, it increased staff to support other contractors, including hiring and providing training and information technology services." In total, the company expects to lay off 300 employees by the end of September.

**Hanford Lab Director To Discuss Japanese Nuclear Crisis, Domestic Impact.** The Tri-City (WA) Herald (3/23)

reports James Conca, director of the Waste Sampling and Characterization Facility, a radiological and environmental monitoring lab at Hanford, "will give a presentation today at Columbia Basin College that will include comments on the nuclear crisis in Japan and what it means for American nuclear plans." In a presentation titled "The Geopolitics of Energy: Achieving a Just and Sustainable Energy Distribution by 2040," Conca "will discuss how energy needs affect everything from the economy to national security. ... He also will discuss the Japanese Fukushima nuclear incident's effect on the US nuclear industry, geologic risks and how the latest reactor designs can handle such devastating events."

**Documents Show Possible DOE Involvement In Hanford Whistleblower Demotion.** NPR (3/23) reports, "Documents just surfacing from an ongoing lawsuit are raising questions about the demotion of a Hanford whistleblower and whether a top manager with the Department of Energy was involved." Walt Tamosaitis claims he was demoted last July "because of the questions he raised about the safety" of a radioactive waste treatment plant being built by Betchel and URS, his employer, at Hanford. Tom Carpenter with the watchdog group Hanford Challenge "says email strings found in this court process show that DOE was also involved in Tamosaitis' demotion." Said Carpenter, "The evidence is starting to come out that there certainly did appear to be some internal agreements to get him off the site and the project."

## **Obama's Economic Agenda Overshadowed By Domestic, World Events.**

USA Today (3/23, Page, 1.83M) reports President Obama "returns to the White House today after a six-day trip to Latin America that was intended to focus on jobs, trade and the economy — but the world just wouldn't cooperate." The "partial nuclear meltdown in Japan, a US military operation in Libya, a looming budget showdown in Washington and more have overwhelmed Obama's agenda, raised risks for the nation's fragile economic recovery and opened him to criticism from not only the emerging Republican presidential field but also some congressional Democrats."

## **Senate Panel To Hold Hearing On Costs Of Cybercrime.**

AFP (3/23) reports the Senate Commerce Committee announced yesterday plans to hold a hearing March 29 on "the economic costs of cyberattacks and cyber crimes like identity theft and hacker strikes on government computers." The panel said it "will explore how cyber attacks imperil America's economy, as well as examine the private sector's role in protecting networks from cyber exploitation and theft." The panel will hear testimony from "government officials, the private sector, and security specialists."

## **INTERNATIONAL NUCLEAR NEWS:**

### **Power Supplied To Fukushima Reactors, But Radiation Still Leaking.**

NBC Nightly News (3/22, story 5, 2:45, Williams, 8.37M) reported, "In Japan, radiation has now been found in the seawater near the nuclear plant as well as milk and vegetables from that region. At the Fukushima nuclear plant power cables have been attached to six reactors, but it could take days or weeks of safety checks before the water cooling systems are back up in operation."

The CBS Evening News (3/22, story 5, 2:30, Couric, 6.1M) reported, "Radiation continues to leak from those damaged nuclear reactors but progress is being made. ... Meanwhile, the official death toll from the earthquake and tsunami is approaching 10,000 with nearly 14,000 missing. More than a quarter million survivors have no homes or have been forced to leave them."

According to the AP (3/23, Talmadge, Yamaguchi), "The progress on the electrical lines at the Fukushima Dai-ichi nuclear power plant was a welcome and significant advance Tuesday after days of setbacks." However, Tokyo Electric Power "warned that workers still need to check all equipment for damage first before switching the cooling system on to all the reactor units – a process that could take days or even weeks."

The Washington Post (3/23, Nakamura, Vastag, 605K) adds, "Concerned that the highly corrosive seawater might have damaged equipment, the plant's operator," Tokyo Electric "was 'checking each electrical device on each unit,' said Taro Ishida, a representative of the Federation of Electric Power Companies in Japan. ... In the meantime, the power company resumed rolling blackouts in many areas of Japan in an effort to conserve energy."

USA Today (3/23, Vergano, 1.83M) reports that "modeling by Austria's Central Institute for Meteorology and Geodynamics... suggests that the Japanese nuclear accident has released 20% as much radioactive iodine and 50% as much radioactive cesium – most of it blown to sea – as was released in Russia's 1986 Chernobyl accident."

The Wall Street Journal (3/23, A1, Shirouzu, Landers, 2.09M), in a front-page article titled, "Japan Ignored Warning Of Nuclear Vulnerability," reports that Japanese regulators were slow to address the Fukushima reactors' weaknesses. Takanori Tanaka, head of the Nuclear Power Engineering Center, said Japan's Nuclear Safety Commission "was just starting a basic discussion of the need to install more diverse safety cooling systems in future reactors."

**FDA Restricts Japanese Food Imports.** ABC World News (3/22, story 6, 2:33, Sawyer, 8.2M) reported, "Starting

immediately, the FDA has decided to block all milk, milk products, fruits and vegetables from coming into the United States from the affected regions of Japan. ... About 4% of the food America imports comes from Japan. Including processed fruits and vegetables, cookies, teas, chewing gum and seafood such as scallops, tuna, lobster, shrimp and salmon."

**Biden And Clinton Sign Condolence Book At Japanese Embassy.** AFP (3/23) reports Vice President Biden and Secretary of State Clinton "on Tuesday voiced admiration for the response of ordinary Japanese to the major earthquake as they pledged continued US support." Biden and Clinton "paid separate visits to the Japanese embassy in Washington to sign a condolence book for the thousands of victims. ... After spending several minutes writing his response, Biden said that the world has been impressed by the 'resolve of the Japanese people, the orderly way in which they are dealing with' the crisis."

**Tepco, Japanese Government Faulted For Lack Of Transparency.** In a piece appearing on the Counter Punch (3/22) website, disaster expert Gregory Button, faculty member at the University of Tennessee, wrote of the "increasing criticism" leveled against both the Japanese government and Tokyo Electric Power Company for their "handling of the nuclear crisis at the Fukushima Daiichi nuclear plant." Both are suspected of "withholding or manipulating vital information about the tragedy" and "even the Japanese press along with some diplomatic officials have lashed out at both parties for their failure to provide sufficient information." Button adds that NRC Chairman Gregory Jaczko recently "dispelled any doubts that there were grave inconsistencies in the way in which the Japanese government was representing the seriousness of the event when he gave a grimmer appraisal posed by the threat than that of the Japanese government." Button says governments and companies "often downplay a disaster" and provide overly optimistic appraisals, both to avoid public scrutiny and to safeguard corporate interests.

### **Japanese Nuclear Crisis Could Stymie Australian Plan To Sell Uranium To India.**

Reuters (3/23, Taylor) reports that a plan by Australian Prime Minister Julia Gillard's Labor government to relax a ban on selling uranium to India is facing challenges due to concerns generated by the Japanese nuclear crisis. India is not a signatory to the Nuclear Non-Proliferation Treaty, hence the ban. Reuters explains that moving forward with the plan to overturn the ban would drive a wedge between Labor and the Green party, threatening Gillard's coalition government.

**Merkel: Germany To Launch Two Panels To Study Nuclear Issues.** The Wall Street Journal (3/23,

Hromadko, Radowitz, 2.09M) reports that German Chancellor Angela Merkel has announced that Germany will set up two panels in the next few months to study technical and ethical aspects of the use of nuclear power. The piece quotes Merkel, "I don't rule out that the reviews will have an impact on life-spans" of German nuclear plants. The Journal notes that Italy is halting its new nuclear projects for at least a year.

### **Italian Government Set To Enact One-Year Moratorium On Further Nuclear Expansions.**

The Wall Street Journal (3/23, Renda, Moloney, 2.09M) reports that Italy's government is expected to enact a one-year halt on any new nuclear projects in response to the Japanese nuclear crisis. The Journal quotes Italian Industry Minister Paolo Romani, "Tomorrow the cabinet will declare a one-year moratorium on the decisions and start of procedures to select the sites of nuclear plants."

Reuters (3/23) runs similar content, noting that Italian officials have expressed a desire to reconsider whether its nuclear "relaunch" should go forward, given Italy's seismic activity levels.

### **Despite Greenpeace Objections, Canadian Regulators Approve Nuclear Plant Expansion.**

Reuters (3/23) reports that Greenpeace activists are working to prevent Canadian regulators from approving the expansion of a nuclear plant near Toronto, though the regulators are suggesting that the project at the Darlington plant will likely be approved, notwithstanding concerns raised by the Japanese crisis.

### **China Set To Begin Construction On Fourth-Generation Nuclear Plant.**

Bloomberg News (3/23, Sethuraman, Katakey) reports, "China will start building a nuclear power plant next month using fourth-generation technology that may be less susceptible to meltdown than Japan's damaged Fukushima Dai-Ichi plant." Construction is set to begin on the "first high-temperature, gas-cooled reactor" at Rongcheng in Shandong province, Bloomberg reports, adding, "The Rongcheng plant will use helium, an inert gas, in its cooling system, and reactor cores will be able to withstand temperatures exceeding 1,600 degrees Celsius (2,912 degrees Fahrenheit) for several hundred hours without melting down, China Business News said this week."

### **Turkey Seizes Arms From Iranian Cargo Plane.**

AFP (3/23, Bozarslan) reports Turkish authorities have "seized rifles on a Syria-bound Iranian plane, grounded since the weekend, and questioned its seven-man crew, police and judicial sources" said Tuesday. The cargo plane, which was ordered to land Saturday night on suspicion it was carrying illicit cargo, had "declared a cargo of spare car parts, but the

inspection resulted...in the discovery of a box containing automatic rifles, a police source" told AFP. The Iranian Embassy in Ankara "declined to comment."

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# NUCLEAR REGULATORY COMMISSION NEWS CLIPS

WEDNESDAY, MARCH 23, 2011 7:00 AM EDT

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

## TODAY'S EDITION

### NRC News:

For Cuomo And Indian Point, New Round In A Long Fight (NYT)	2
New York Nuke Plant Seismic Review Gets Top Priority (REU) ..	3
Federal Nuclear Officials Pledge To Make Indian Point Assesment Top Priority (NY1).....	3
Indian Point Site 'Top Priority' (ATU).....	4
NRC Will Make Indian Point Safety Review A "Top Priority" (WXXI).....	5
Indian Point Target Of Quake Review (WSJ).....	5
Indian Point Tops Quake-risk List (WESTJN).....	5
Indian Point Has Its Bases Covered, Entergy Officials Tell Westchester Lawmakers (MIDHUD).....	6
Indian Point Safe, Radiation Good For You, Says Area Man: Gothamist (GOTHAMIST).....	7
Indian Point Power Plant Review (WBNG).....	7
New York Nuclear Plant To Receive 'Top Priority' In Safety Review (CNN).....	8
Indian Point Plant Safe, Japan Accident Unlikely, NRC Says (BLOOM).....	8
New York Officials Meet With Nuclear Regulatory Commission About Indian Point (WABC).....	9
Indian Point Owner Says New York Reactor Is Safe (AP).....	9
Entergy: 'Indian Point Is Not Susceptible' To Japan-type Catastrophe (WESTJN).....	10
Indian Point Review A Top Priority For Federal Regulators (NRPTC).....	10
NRC, NY State Will Review Downstate Nuclear Plants' Ability To Resist Earthquakes (SYPS).....	11
Cuomo: Indian Point Now 'top Priority' For NRC (ATU).....	11
Gov. Cuomo: Feds To Make Indian Point Priority #1: UPDATED (NTDN).....	13
NRC OK's 20-year Extension For Vt. Nuclear Plant (BOS).....	14
Vt. Lawmakers Want NRC To Again Review Vt. Yankee Safety (WCAX).....	14
The Pros And Cons Of Keeping Vermont's Nuclear Plant Open (WBUR).....	14
Beyond Nuclear Decries Reckless Decision Of Nuclear Regulatory Commission To Give Vermont Yankee Reactor 20 More Years To Operate (Common Dreams) ..	15
Discharge Permit To Be Renewed (KEENE).....	16

NRC: Vermont Yankee Nuclear Power Plant 'Good To Go' For 20 More Years (FORBES).....	17
Staff Finds No Reason To Shut Down Any US Reactors And No US Risk From Japanese Radiation (CWIRE).....	17
Safety Upgrades At US Nuke Plants Worried UN Agency (REU).....	19
US Court Questions Oyster Creek Nuclear License After Japan Disaster (NEWARKSL).....	19
Court To NRC: How Does Japan Impact Oyster Creek License Renewal? (ASBPP).....	20
Japan Disaster Spurs Court To Revisit Safety Of Exelon-owned Nuclear Plant (CHIT).....	20
Appellate Court Wants More Information About Oyster Creek, Tsunamis And Earthquakes (PATCH).....	21
Appeals Court Considers Site For Nuclear Disposal (AP).....	22
Obama Lacks Authority To Shutter Yucca Site, Court Told (MCT).....	22
Appeals Court Hints Lawsuit Over Yucca Nuclear Waste Repository May Be Premature (NYT).....	23
Yucca Mountain Fate Argued In Court (LVSRJ).....	24
Mississippi Gov. Haley Barbour Makes Early Swing Through Nevada As He Contemplates Run For President (LVS)....	24
Mississippi Governor Explores Presidential Bid In Nevada (LVSRJ).....	25
Last word in nuclear safety: Yucca (RALEIGH).....	25
Reactors' Spent Fuel Pools: Serious Safety, Security Hazards (BELLH).....	26
AP IMPACT: US Spent-fuel Storage Sites Are Packed (AP).....	27
US Nuclear Waste Problem Gains New Scrutiny (LAT).....	29
Special Report: Fuel Storage, Safety Issues Vexed Japan Plant (NYT/REU).....	30
Mass. Officials Press NRC On Nuclear Waste, Storage Issues (WALPOLE).....	31
Alexander Says Disaster In Japan Will Sharpen Focus On Nuclear Safety (KINGPRT).....	31
Senator Graham Tours Oconee Nuclear (WYFF).....	32
Graham Uses Tour To Push Nuke Power (TSSC).....	32
Sen. Graham: 'I Believe In Nuclear Power' (ADERSN).....	33
Inside Oconee Nuclear: How Safe Is Upstate's Nuclear Power Plant? (WSPA).....	34
Nuclear Industry Works To Sustain Rebirth (GRNVN).....	35
NRG Casts Doubt On Reactor Plans (WSJ).....	36

South Texas Nuke Plant Expansion Faces Delays (HOUBIZ) ...	36	Nuclear Power Loses Support In New Poll (NYT).....	51
NRG CEO:Slashing Loan Guarantees Would Cripple Nuclear Industry (WSJ).....	36	Support For Nuclear Power Is Partisan (POLITCO) .....	52
TVA Execs Discuss US Reactor Safeguards As Japan Struggles With Nuclear Crisis After Quake (AP).....	36	Poll: Japanese Crisis Cuts US Nuke Energy Support (HILL) .....	53
TVA Officials Confident In Its Nuclear Plants (SDS).....	37	Nuclear Power In US: Public Support Plummets In Wake Of Fukushima Crisis (CSM) .....	53
TVA Addresses Brown's Ferry Concerns (WAAY).....	38	US Public Support For More Nuclear Power Slips (REU).....	54
NRC Looks At Lubrication Concern At Nuclear Plant (AP).....	38	US Looks To Safeguard Medical Isotopes From Terrorists (NATJO).....	54
NRC Conducts Special Probe In Callaway (AP).....	38	H Canyon Might Remain Open (AUGC) .....	54
Durbin, Kirk To Host Forum On Ill. Nuclear Safety (AP) .....	39	144 Get Layoff Notices At Mission Support Alliance (TRICITYH).....	55
Nuclear Illinois Helped Shape Obama View On Energy In Dealings With Exelon (BLOOM).....	39	Hanford official's talk to review Japan impacts (TRICITYH) .....	56
Critics Cite 'Severe Seismic Risk' At California Nuclear Power Plants (CSM) .....	41	Hanford Whistle Blower Case More Closely Linked With DOE (NPR) .....	56
California Lawmakers Push For New Seismic Safety Studies Of Nuclear Power Plants (SCPR) .....	41	Global Crises Overshadow Obama's 2011 Agenda (USAT) .....	56
Central Coast Senator Asks PG&E To Suspend Nuclear License-renewal Request (VENCSTR).....	42	US Senate Panel To Weigh Cybercrime Costs (AFP).....	57
Manufacturer Reports Potential Safety Issue At Browns Ferry (WAFF) .....	43	<b>International Nuclear News:</b>	
TVA Officials Keeping Close Eye On Japan's Nuclear Crisis (WAFF) .....	44	Power Lines Up In Progress At Japan Nuclear Plant (AP) .....	58
Energy Company Babcock & Wilcox May Help With Japan Nuclear Power Plants (WP/AP).....	44	Electricity Connected To Daiichi Reactors As Japanese Evacuees Struggle For Normalcy (WP).....	59
Babcock & Wilcox To Support Japan Relief (CLTBIZJ).....	45	Japan Nuclear Fears Ease As Power Is Restored (USAT) .....	61
Babcock & Wilcox May Help With Japan Power Plants (VICTORA) .....	45	Japan Ignored Warning Of Nuclear Vulnerability (WSJ).....	61
B&W In Talks With Toshiba Over Fukushima Daiichi Nuke Plant (INTLBIZ) .....	45	Biden, Clinton Salute Japan Resilience (AFP).....	61
Meltdown-or-Not Future For Nuclear Fuel Seen In Refrigerator-Sized Reactor (BLOOM) .....	45	Informational Uncertainty In The Wake Of Japan's Nuclear Crisis (CounterPunch) .....	62
NRC Proposes To Amend Licensing, Inspection, Yearly Fees Rule (EGYBUS).....	49	Australia Weighs Nuclear Push After Japan Crisis (REU).....	65
NEWSMAKER - Problem Solver At Helm As US Faces Test On Nuclear (REU) .....	49	German Panels To Discuss Nuclear-Safety Issues (WSJ).....	65
OVERNIGHT ENERGY: Get Ready For More Chu (HILL).....	49	Italy To Defer Nuclear Energy's Return For A Year (WSJ).....	65
		Italy Plans One-Year Pause On Nuclear Power (NYT/REU).....	65
		Canada Nuclear Plan Gets Environmental OK (REU).....	65
		China To Build Nuclear Plant Using Fourth-Generation Technology In April (BLOOM).....	66
		Turkey Seizes Rifles On Grounded Iranian Plane (AFP).....	66

## **NRC NEWS:**

### **For Cuomo And Indian Point, New Round In A Long Fight (NYT)**

By Thomas Kaplan

New York Times, March 23, 2011

Two months after the Sept. 11 terrorist attacks, Andrew M. Cuomo signed a petition urging that the Indian Point nuclear power complex in Westchester County be shut down for safety reasons.

In 2002, while campaigning for governor, he convened a news conference in White Plains to call for the plant's immediate closing, and he criticized Gov. George E. Pataki for not taking seriously the vulnerability of the facility to a terrorist attack.

And then as state attorney general, Mr. Cuomo lobbied federal regulators not to relicense the site, calling it a "catastrophe waiting to happen" in part because of questions about its susceptibility to a powerful earthquake.

Now, in the aftermath of the earthquake and the tsunami that devastated Japan, worries about the safety of Indian Point have resurfaced. And Mr. Cuomo is again vowing to push for the permanent closing of the complex, this time as governor – a far loftier perch.

Officials with the Nuclear Regulatory Commission said Tuesday that they would accelerate a planned review of Indian Point and would allow state officials to be part of the inquiry. The announcement came after Lt. Gov. Robert J. Duffy met with regulators at the commission's headquarters in Maryland earlier in the day to express the Cuomo administration's concerns.

"This is not a new situation; this is not a new issue," Mr. Cuomo said at a news conference at the State Capitol after Mr. Duffy returned. "It is imperative that we get it right, and that's why we brought the urgency to the matter."

The two reactors at Indian Point, which sit on the Hudson River, are set to have their licenses extended in 2013 and 2015. The state attorney general, Eric T. Schneiderman, asked regulators on Friday to include seismic risk and other safety issues when they consider whether the plant should be relicensed for 20 years.

The N.R.C. had already planned a separate review of earthquake vulnerabilities at 27 nuclear plants, including Indian Point, and the commission agreed on Tuesday to make Indian Point its first priority in that review and to allow state experts to participate in the inspection. The chairman of the commission, Gregory B. Jaczko, also agreed to visit Indian Point.

The company that owns the plant, Entergy, told officials in Westchester on Monday that Indian Point had been designed to withstand an earthquake much stronger than any recorded in the region.

A spokesman for Entergy said Tuesday that the company welcomed the regulatory commission's review and would assist in the process.

"All citizens of New York need to have access to the pertinent facts regarding Indian Point," the spokesman, James F. Steets, said in a statement. "We strongly believe that knowing the facts will answer the public's questions and will also clearly demonstrate that this facility is safe — designed with a margin of safety beyond the strongest earthquake anticipated in the area."

For Mr. Cuomo, the new discussion about Indian Point represents the latest chapter in a family history of grappling with nuclear power. The concerns he has expressed about Indian Point, particularly the possibility of trying to evacuate millions of residents around the facility, can be traced back decades: his father, former Gov. Mario M. Cuomo, brokered a deal to shut down the Shoreham nuclear plant on Long Island in 1989 because of similar worries.

When he ran for governor last year, Mr. Cuomo said in a policy book that as governor, he would seek to "find alternative sources of energy generation to replace Indian Point nuclear facility because it is too dangerous to continue operating."

Indian Point generates 2,000 megawatts of power, supplying about 30 percent of the electricity used daily by New York City and Westchester.

At the Capitol on Tuesday, Mr. Cuomo read aloud a letter he sent to federal regulators expressing concerns over Indian Point — and then, to some theatrical effect, revealed that the letter was from 2007.

Then, as attorney general, Mr. Cuomo said Indian Point should be shut down "now." He affirmed his concerns on Tuesday, saying "the plant is risky, and the plant should not operate."

But Mr. Cuomo also said that decisions about the plant's future should be made "based on sound information, not on emotion." He acknowledged that there would be no easy solutions on how to replace the energy the plant produces if it were to close.

That has been a major question raised by people who favor keeping the plant open, including State Senator George D. Maziarz, Republican of Niagara County and the chairman of the Energy and Telecommunications Committee.

"If Indian Point is closed, residential and business energy costs are going to rise dramatically in downstate New York," Senator Maziarz said. "It is going to drive jobs out of New York. I think it's over all a very negative thing."

Mr. Cuomo dismissed those concerns on Tuesday. "I continue to reject the position, 'Well, it's 2,000 megawatts of power; we need the power; who cares what the risk is?'" he said.

## **New York Nuke Plant Seismic Review Gets Top Priority (REU)**

By Dan Wiessner

Reuters, March 23, 2011

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

## **Federal Nuclear Officials Pledge To Make Indian Point Assessment Top Priority (NY1)**

NY1 News, March 23, 2011

Governor Andrew Cuomo announced Tuesday that the US Nuclear Regulatory Commission has pledged to make reviewing Indian Point power plant's safety a top priority, following a meeting with state officials earlier in the day.

The NRC is reviewing the seismic risk at 27 nuclear plants throughout the country in the wake of the meltdown at a Japanese nuclear plant after the nation's massive earthquake.

Cuomo says that as a result of the meeting between Lieutenant Governor Robert Duffy and Director of State Operations Howard Glaser and NRC officials in Maryland, the commission has agreed to share federal data of the assessment with state technical experts and include state experts as part of the on-site inspection team.

"It is essential that the NRC move quickly to answer the significant and long-standing safety questions surrounding Indian Point," Cuomo said in a statement. "We appreciate the NRC agreeing to move swiftly and we look forward to working closely with them on this issue to protect the health and safety of New Yorkers."

The plant, which is located about 25 miles from the city in Westchester County, provides about 30 percent of the electricity to New York City and Westchester and employs about 1,700 people.

Entergy Corp – which runs the plant – says in a statement that it welcomes Cuomo's call for a review and is willing to assist the NRC.

The company also says the review will help the public realize that the plant can withstand a magnitude 6.0 earthquake. Indian Point sits on a fault line, but quakes along that fault are rare.

NRC officials say the odds of there being an earthquake that could endanger the facility and surrounding area is one in 13,000.

Entergy also says the plant's back-up generators are on high ground, which are safe from a tsunami that could swell the Hudson River.

Entergy took out a full page advertisement in the New York Times today, saying it welcomes the governor's call for a review of the plant. The company says, "We strongly believe knowing the facts will answer the public's questions and will also clearly demonstrate that the facility is safe."

New Yorkers who we spoke to about the plant were split about its dangers.

"I think we're all in a heightened sensitivity about the issue and, yes, it has been concerning me more recently because of the recent events," said one New Yorker.

"Nuclear power is the safest power there is," said another. "The fears of radiation are ridiculous. You're radioactive; I'm radioactive. Tiny doses of radioactivity are really helpful they've discovered."

Indian Point is one of six nuclear plants in the state.

## **Indian Point Site 'Top Priority' (ATU)**

By Casey Seiler

Albany (NY) Times Union, March 23, 2011

ALBANY – The US Nuclear Regulatory Commission will make the Indian Point nuclear facility's potential vulnerability to an earthquake its "top priority," according to NRC officials who met Tuesday with Lt. Gov. Robert Duffy and state Director of Operations Howard Glaser.

In the two weeks since an earthquake and tsunami critically damaged Japan's Fukushima Daiichi power plant, Gov. Andrew Cuomo's administration has expressed renewed concern about Indian Point. The Westchester County power plant sits on the shore of the Hudson River in proximity to New York City as well as the Ramapo fault zone that extends into New Jersey and Pennsylvania.

In a Tuesday afternoon news conference, Cuomo said the NRC had pegged the odds of damage to one of Indian Point's reactors after a quake at 1 in 13,000. Entergy Nuclear, the plant's operator, insists the facility could withstand a quake up to 100 times worse than any previously experienced in the region, and welcomed the federal and state scrutiny.

In what Cuomo said would be an "expeditious" process, the NRC will share federal data on seismic risk at the plant with New York experts, and state personnel would join the commission's staff – including Chair Greg Jaczko – for on-site inspection of the facility.

In the wake of the crisis in Japan, the NRC has just begun a 90-day review of US plant safety.

"This is not the first time that we've had issues with the Indian Point power plant," Cuomo said. "... My position has been for a long time that the plant is risky and the plant should not operate."

The governor read from a 2007 letter he sent in his capacity as attorney general that called the NRC's decision not to consider seismic issues or potential terrorist threats as part of its licensing process "dangerously irresponsible."

That letter was prompted by an earthquake in Japan that had briefly imperiled a nuclear power plant.

The NRC is slated to relicense one of Indian Point's two operating reactors in 2013, and while the state has no say in the process, Cuomo said the relicensing should look at more than just the integrity of the plant itself.

"The problem with this plant – it's different than a basic or generic conversation about nuclear power," he said.

Cuomo pointed out that the plant's location has prompted related worries about the difficulty of evacuation. He noted the US government was warning its citizens in Japan to stay at least 50 miles from the wounded Fukushima plant. If that zone of exclusion were laid over Indian Point, "you're talking all of New York City, you're talking about parts of Connecticut, you're talking about Long Island, you're talking about New Jersey," he said.

"By some estimates, 6 percent of the nation's population would be in that zone," Cuomo continued. "So evacuation, I don't believe, is even a feasible concept when you're talking about this plant in this area with this density."

The governor said the state would ultimately be able to replace the 2,000 megawatts of power produced by Indian Point through facilities sited and scheduled to go on line in the next few years.

The near-term effects of the loss of power in the state's electrical grid, Cuomo said, shouldn't be yoked to Indian Point's safety. Once that margin of danger has been established by the state and the NRC, he said, the larger discussion about Indian Point's future would begin.

"What risk are you willing to live with?" Cuomo said. "That's what it's going to come down to at the end of the day."

## **NRC Will Make Indian Point Safety Review A "Top Priority" (WXXI)**

By Karen DeWitt

WXXI-TV Rochester, NY, March 23, 2011

Governor Andrew Cuomo says the US Nuclear Regulatory Commission has pledged to make the Indian Point nuclear power plant it's first priority in reviewing seismic risk at the nation's nuclear power plants in light of the disastrous earthquake in Japan. Cuomo stopped short, though, of calling for a shutdown of the Indian Point nuclear power plant.

Cuomo as Attorney General expressed deep concerns, about the safety of the Indian Point nuclear power plant, which is located in the population dense Westchester County around 25 miles north of New York City. The governor says his worries were heightened after the Japan earthquake, and after new information that seismic threats to the plant might be greater than previously believed.

Cuomo says his staff and nuclear regulatory commission staff will soon conduct a new review of the potential dangers posed to the plant, which sits near a significant earthquake fault line.

"What is the risk, what can you do about it, can it be mitigated?" asked Cuomo, who said he's seeking "solid information".

New York State does not have the power to shut the plant down, only the federal government can do that. Cuomo is asking though, that the NRC "reevaluate" it's criteria before it decides whether the plant should be re-licensed in 2013.

Cuomo says he will ask the NRC officials, "given what you know today, should that plant be licensed today?"

Cuomo says evacuation plans were discussed at the meeting, which was attended by Lieutenant Governor Robert Duffy, but he says there's been no decision to revise those plans. The governor says though, a fifty mile radius evacuation that the US is recommending be put in place in Japan after the nuclear power plant failures there would be almost impossible to carry out if a similar situation occurred at Indian Point.

"You're talking all of New York City, you're talking about parts of Connecticut, you're talking about Long Island, you're talking about New Jersey," said Cuomo, who said those locations represents 6% of the entire US population.

"Evacuation, I don't believe, is even a feasible concept," Cuomo said.

The governor did not say that the plant should definitively be shut down, but he did say that if the nuclear power plant is eventually deemed too great a risk to continue to operate, alternative sources of energy would have to be found to replace the power. He admits adequate replacement supplies do not exist right now.

Cuomo says new plants would have to be built, he says he does not believe that hydrofracking of natural gas deposits, which is under debate in New York, would be a reasonable replacement. Cuomo says at the end of the day, it comes down to "what risk are you willing to live with", and he says his threshold for that risk is likely much lower than that of the federal nuclear regulatory commission.

Cuomo's announcement was praised by the New York Public Interest Research Group. NYPIRG's Laura Haight says the original decision to build the nuclear power plant over an active earthquake fault line was "crazy".

## **Indian Point Target Of Quake Review (WSJ)**

By Devlin Barrett

Wall Street Journal, March 23, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

## **Indian Point Tops Quake-risk List (WESTJN)**

By Greg Clary

Westchester Journal News, March 23, 2011

Federal regulators agreed to put Indian Point at the top of their earthquake risk list, Gov. Andrew Cuomo said Tuesday, hours after top officials of his administration met with the Nuclear Regulatory Commission.

The NRC is reviewing seismic risk at 27 of the 104 working commercial reactors across the nation, and though Indian Point was already on that list, Cuomo sought to have it looked at first because of the earthquake-tsunami damage to reactors in Japan.

Cuomo said the NRC has also agreed to allow New York state technical experts to review agency seismic data and work cooperatively on the review, including on-site inspections.

"It is essential that the NRC move quickly to answer the significant and long-standing safety questions surrounding Indian Point," Cuomo said during an afternoon news conference. "We appreciate the NRC agreeing to move swiftly and we look forward to working closely with them on this issue to protect the health and safety of New Yorkers." Cuomo was represented at the NRC's regional headquarters in Rockville, Md., by Lt. Gov. Robert Duffy, Director of State Operations Howard Glaser and six others.

The state came away with a memorandum of understanding from the NRC promising cooperation with the state. In addition, NRC Chairman Gregory Jaczko has agreed to conduct a personal site inspection of Indian Point with officials, Cuomo said.

The NRC confirmed that there was agreement that state inspectors could join the agency in its seismic inspections at Indian Point and that the NRC would share its non-proprietary seismic data.

Jaczko may find himself conducting inspections on the West Coast as well, with the release Tuesday of a letter sent to him by California Sens. Barbara Boxer and Diane Feinstein.

Boxer, chairwoman of the Senate's Environment and Public Works Committee, said she has received new information from the NRC indicating two California nuclear plants are the only ones in the nation that are in the highest seismic hazard areas.

According to the NRC, its rating was based on the "level of seismic activity and the potential for large magnitude earthquakes," Boxer said.

"New information about the severe seismic risk at the San Onofre Nuclear Generating Station and the Diablo Canyon Power Plant make clear that these two plants require immediate attention in light of the catastrophic events in Japan," Boxer said.

The two Democrats asked Jaczko for answers on what has been done since the plants opened in the mid-1980s to improve safety, how emergency notification systems have worked and what the plants would do if they lost power.

The NRC began in the fall to review seismic risk for its plants east of the Rocky Mountains after updated geological information from the US Geological Survey showed increased likelihood of earthquake activity in the east and central United States.

NRC officials have said repeatedly since the Japanese crisis that Indian Point was built strongly enough to handle earthquakes in this region and the review was being done with improved seismic technology to pinpoint the plant's safety margin.

"We continue to believe that the robust design of US plants makes it highly unlikely that a similar event could occur in the United States," NRC spokesman Neil Sheehan said. "(The) NRC will look to see if there may be any safety enhancements needed for a number of plants, including Indian Point."

Indian Point spokesman Jim Steets said the company welcomed the NRC and state's in-depth look at the plant's seismic safety.

"All citizens of New York need to have access to the pertinent facts regarding Indian Point," Steets said. "We strongly believe that knowing the facts will answer the public's questions and will also clearly demonstrate that this facility is safe — designed with a margin of safety beyond the strongest earthquake anticipated in the area."

## **Indian Point Has Its Bases Covered, Entergy Officials Tell Westchester Lawmakers (MIDHUD)**

Mid-Hudson News, March 23, 2011

WHITE PLAINS – The circumstances that led to the issues relating to the Japanese nuclear power plant problems, namely the earthquake and tsunami, are not going to happen one after the other in the vicinity of the Indian Point nuclear power plants in Buchanan, Entergy officials told members of the Westchester County Board of Legislators on Monday.

The Committees on Environment and Energy and Public Safety met with Entergy officials to be briefed on community concerns about Indian Point safety in the wake of the natural disasters in Japan.

The officials said there are plenty of safeguards at the facilities should a mild earthquake occur, and the last one that happened in the region was a minor one in Rockland County over 50 years ago.

Environment and Energy Committee Chairman Legislator Michael Kaplowitz said two issues stand out, storage of spent fuel rods and the 10 mile emergency zone around Indian Point.

"From Kingston to Staten Island, that's 50 miles. Americans are told in Japan to get away from the plant by 50 miles or more," he said. "Why are we only planning for a 10 mile evacuation zone around Indian Point in our nuclear plants here?"

The county board's study into the safety of Indian Point will continue with another meeting, that one to hear from government regulators of the plant.

## **Indian Point Safe, Radiation Good For You, Says Area Man: Gothamist (GOTHAMIST)**

By John Del Signore

Gothamist, March 23, 2011

Lieutenant Governor Robert Duffy and Director of State Operations Howard Glaser are meeting with regulators from the Nuclear Regulatory Commission today to discuss the risks facing the Indian Point nuclear plant in the event of an earthquake. You'll recall that the plant, which is about 25 miles from city limits, is at the intersection of two different fault lines. But there is nothing to worry about, say the plant's owners and this area man on the street, who gives NY1 the quote of the day:

"Nuclear power is the safest power there is," said a knowledgeable man on the street who declined to give his name. "The fears of radiation are ridiculous. You're radioactive; I'm radioactive. Tiny doses of radioactivity are really helpful they've discovered. People in Colorado get two or three times the dose of normal radioactivity, compared to what we get. So I say more nuclear power plants!" Then a smaller, second head growing out of his neck chimed in, "And more equal rights for mutants!" (Watch at the 1:30 mark.)

Entergy Corp - which runs the plant - says the reactors are safe and the plant can withstand a magnitude 6.0 earthquake. John McCann, plant owner Entergy's vice president for nuclear safety, licensing and emergency planning, told Westchester County lawmakers yesterday, "I would say categorically that Indian Point is not susceptible to the type of earthquake that occurred in Japan. And more importantly, perhaps, to the tsunami." Former mayor and presidential hopeful Rudy Giuliani also says there's nothing to fear, and he's certainly an authority, having been hired by Entergy as a security consultant.

Others, like Governor Cuomo, have called for the plant to be shut down. And federal inspectors will soon conduct a full review of the plant's safety. Asked about the possibility of an earthquake, Energy Secretary David Chu said Sunday, "It is an issue. We're going to have to look at whether this reactor should remain [in operation]. This is not to say that we believe that reactor is unsafe." No, not at all, but it sounds like Entergy might have forgotten the three most important rules of nuclear plant building: location, location, location.

Theoretical physics professor and author Dr. Michio Kaku was on The Late Show with David Letterman last night talking about Indian Point, which the talk show host is strongly opposed to. "We have so many gangs and so much violence in this city, why don't we send some of these gangs up there to just take the thing apart?" asked Letterman. Kaku replied, "That's the Letterman solution!"

By the way, last week a magnitude 4.7 earthquake in east-central Canada was felt as far south as New York's Adirondack Mountains. And if you're not cool with Indian Point, you may want to join forces with the Rock the Reactors movement. (Check out the awesome website.) The group's organizer Remy Chevalier tells us why this issue is so important to him: Any asshole with a surface to air missile can shoot it into the water intake and demolish the cooling system... Any asshole can drive a plane into the plant... a multitude of calamities could happen... Can you imagine trying to evacuate Manhattan? The whole thing is insane, has been insane since the beginning. The only reason we're using enriched uranium and now plutonium to boil water to drive a turn of the last century steam turbine is because these jokers at the Pentagon needed to justify the cost of all these centrifuges! Why it's important to me? Because it's the ultimate insult to life... enriched uranium and plutonium do not exist in nature, we created it out of arrogance, like the tower of Babel... Chernobyl wasn't enough? Indian Point wasn't enough? GE had to go and impose their sick brand of ridiculous pretense on the Japanese people, and put their reactors all stacked in a row on top one of the most active earthquake fault on the planet? We can make iPads, we can make Tesla Motor cars? And we can't find a way to capture electrons from the ambient environment where they are free for the taking? We had to create the worse possible poison man has ever known, and fuck with it? Please don't get me going ok? That's why I don't talk about the reasons why... because if by now people don't know why so many are so passionate about their anti-nuclear convictions, there's really nothing we can do to help them... Read my book ELLE on Earth, I was there in the room when that oaf of a man, Pompidou, sold out France to Westinghouse... France is living on borrowed time... one close call after the other... all for what? A few more light bulbs? Buy LEDs!

## **Indian Point Power Plant Review (WBNG)**

WBNG-TV Binghamton, NY, March 22, 2011

Albany, NY (WBNG Binghamton) New York will get answers about the risks an earthquake could pose to the Indian Point Nuclear Power plant.

Governor Andrew Cuomo announced the US Nuclear Regulatory Commission agreed to make Indian Point one of its top priorities in a review of seismic risk at all 27 nuclear power plants in the United States.

Indian Point is located in Buchanan in Westchester County.

It has two nuclear reactors and sits near two fault lines.

The NRC agreed to include New York experts on the inspection team and share its findings with the state.

The plant sits near fault lines that experts have said is modest compared to those in Japan and California.

Yet, it is within 50 miles of where 20 million people live downstate.

Cuomo's office stated he has long opposed the Indian Point facility and has worked to prevent federal relicensing.

## **New York Nuclear Plant To Receive 'Top Priority' In Safety Review (CNN)**

By David Ariosto

CNN, March 23, 2011

A nuclear power plant less than 25 miles from New York is among 27 reactors the Nuclear Regulatory Commission is reviewing after a commission report uncovered higher safety risk than previously thought, officials said.

The Indian Point station – which comprises two operating nuclear reactors – is in Buchanan, New York, and sits atop the Ramapo fault line, causing concern for some residents in the wake of the Japan disaster.

During a news conference Tuesday, New York Gov. Andrew Cuomo said the Nuclear Regulatory Commission has pledged to make Indian Point "its first and top priority."

"It is essential that the NRC move quickly to answer the significant and long-standing safety questions," Cuomo said.

The first-year governor said the station, given its close proximity to major population centers, represents more than "a generic conversation about nuclear power."

"Evacuation is not even a feasible concept with this plant" in a worst-case scenario, he said.

But regulators say that the plant is safe and that an incident similar to Japan's, where a 9.0-magnitude earthquake and ensuing tsunami crippled reactors and raised surrounding radiation levels, is unlikely.

"US plants take into effect even the most extreme conditions," commission spokesman Neil Sheehan said. "The Japanese plants seemed to have withstood the earthquake, but it was the tsunami that knocked out power."

"Indian Point (given its location) is not about to be hit by a tsunami," he said, noting that US facilities are able to operate during electrical blackouts.

"We have diesel generators and backups to the diesel generators," he added.

Eric Leeds, director of the commission's Office of Nuclear Reactor Regulation, said it is "continuing to examine the recently updated earthquake information."

He noted that "reactors in Eastern and central states remain safe, since our analysis confirms that overall seismic risk remains low."

The plant is run by Entergy Corp., which took out advertisements Tuesday in New York newspapers, welcoming the safety reviews.

Each plant reactor produces enough energy to power approximately 1 million households, Sheehan said.

The United States maintains 104 operating nuclear reactors, often considered an alternative to reliance on fossil fuels.

## **Indian Point Plant Safe, Japan Accident Unlikely, NRC Says (BLOOM)**

By Simon Lomax

Bloomberg News, March 23, 2011

Entergy Corp. (ETR)'s Indian Point nuclear power plant in New York is safe and a US accident similar to Japan's atomic disaster is unlikely, federal officials told the state's lieutenant governor, Robert Duffy.

"The robust design of US plants makes it highly unlikely that a similar event could occur in the United States," the Nuclear Regulatory Commission said today in an e-mail after meeting Duffy and other state officials.

The crisis at Japan's Fukushima Dai-ichi plant after a 9.0 magnitude earthquake and tsunami should prompt the US regulator to shut the Indian Point reactors, New York Governor Andrew Cuomo, a Democrat, said March 19. Indian Point is about 24 miles north of New York City.

While a report last year found "slightly higher seismic risk for the Indian Point reactor," it was "still within safety margins," the NRC said. After Japan's earthquake and tsunami, the agency "will look to see if there may be any safety enhancements needed for a number of plants, including Indian Point."

New York officials can join NRC officials at plant inspections and have access to the site's seismic data, the agency said.

Duffy spokesman, David Doyle, didn't immediately respond to a voicemail or e-mail seeking comment.

The two reactors at Entergy's Indian Point plant began operating in 1974 and 1976, according to NRC data. The operating licenses are set to expire in 2013 and 2015, according to the NRC. Entergy has applied to extend the licenses for 20 years.

The NRC, which says US reactors are designed to withstand earthquakes, tsunamis and natural disasters, announced yesterday a 90-day review of US plant safety in light of Japan's crisis. An initial report will be released after 30 days, the NRC said.

The agency granted a 20-year license extension yesterday to Entergy's Vermont Yankee nuclear plant in Vernon, Vermont. The decision was based on reviews completed before the March 11 earthquake and tsunami in Japan.

## **New York Officials Meet With Nuclear Regulatory Commission About Indian Point (WABC)**

By Bob Monek, Eyewitness News

WABC-TV New York City, March 23, 2011

ALBANY (WABC) -- New York Governor Andrew Cuomo says that the US Nuclear Regulatory Commission has pledged to make Indian Point its top priority in its review of seismic risk at 27 nuclear plants throughout the country.

The owner of the power plant has insisted the facility is not susceptible to the kind of earthquake and tsunami that rocked Japan.

Entergy's vice president, John McCann, told Westchester County legislators on Monday that the earthquake in Japan was much more powerful than any recorded around Indian Point.

State officials met with the NRC on Tuesday. At the request of the Cuomo Administration, the NRC has agreed to a cooperative review of Indian Point as a joint effort between the NRC and New York State.

The governor's office says NRC has also agreed to sign a memorandum of understanding that will:

Share federal data regarding seismic risk specific to Indian Point with New York technical experts

?Include New York experts as part of the NRC on-site inspection team that will evaluate Indian Point with regard to seismic risk

In addition, NRC Chair Greg Jaczko has agreed to conduct a personal site inspection of Indian Point with New York officials.

Governor Cuomo has long been an opponent of Indian Point and has worked to prevent the federal relicensing of the facility.

"I've had concerns about Indian Point for a long time," Cuomo said. "As attorney general, I did a lot of work on Indian Point. My position was that it shouldn't be re-licensed. My position was that it should be closed."

The facility is situated near a fault line and concerns have been raised about whether it was designed to withstand the seismic activity that could result from an earthquake.

Chief among those concerns is the size of the evacuation zone around Indian Point. Right now, it's just 10 miles. But the zone for US citizens near Japan's damaged nuclear plant is 50 miles.

"If it's 50 miles, it takes us through New York City," Westchester Legislator Michael Kaplowitz said. "If it's 50 miles, I don't know how you design an evacuation plan."

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Do you have something to add to this story? [Click here to contact Eyewitness News.](#)

## **Indian Point Owner Says New York Reactor Is Safe (AP)**

Associated Press, March 23, 2011

NEW YORK (AP) -- The owner of New York's Indian Point nuclear power plant says the facility is not susceptible to the kind of earthquake and tsunami that rocked Japan.

Entergy Corp.'s vice president, John McCann, told Westchester County legislators on Monday that the earthquake in Japan was much more powerful than any recorded in the region of Indian Point.

McCann said he expected changes to be made in response to the events in Japan, but he didn't say what they would be.

Entergy on Monday took out a one-page ad in The New York Times reassuring the public that the facility is designed to withstand the strongest earthquake anticipated in the area.

The plant is located in Buchanan, N.Y., 35 miles north of New York City.

## **Entergy: 'Indian Point Is Not Susceptible' To Japan-type Catastrophe (WESTJN)**

By Greg Clary

Westchester Journal News, March 23, 2011

WHITE PLAINS – The one-two punch of a massive earthquake and a tsunami knocking out Indian Point is unlikely in the Hudson Valley, plant officials told Westchester County lawmakers Monday.

"If it were only the earthquake that they had to deal with, we probably wouldn't be discussing (the Japanese) event here today," said John McCann, plant owner Entergy's vice president for nuclear safety, licensing and emergency planning. "I would say categorically that Indian Point is not susceptible to the type of earthquake that occurred in Japan. And more importantly, perhaps, to the tsunami."

McCann said the earthquake that hit a coastal area 170 miles northeast of Tokyo was 1,000 times more powerful than anything recorded in this region, adding that the plant is too far inland to be hit by a tsunami.

Flood planning is set against a 100-year flood mark and the company has its backup systems protected for a safety margin above that high-water mark.

Members of the county's Board of Legislators' Environment and Energy Committee asked Indian Point to brief them about how the Japanese circumstances compare with this area.

"There is no interest on the part of any of us to panic or, in fact, to act in haste," said Michael Kaplowitz, D-Somers, one of the committee's chairmen. "It's a chance to ask questions and get answers ... to see what changes can be made... to make sure people are safe."

The committee focused questions on the ability of the plant to contain radiation, to store spent fuel safely and to keep power flowing via backup generators and other systems until the reactors can be safely shut down.

Before a phalanx of television cameras, the lawmakers raised concerns about emergency planning and evacuation, possible panic among residents, and how quickly nuclear plant officials would be willing and able to make changes at the plant.

"We need to be careful about not moving too quickly," McCann said. "I have no doubt that there will be changes made in response to this event."

Phillip Musegaas, Riverkeeper's lead Indian Point expert, said he didn't hear much new from plant officials.

"They didn't answer any hard questions," he said. "Where's the supporting data on (withstanding) a 6.0 earthquake. And there's nothing preventing them from moving more spent fuel to dry cask storage, except the expense."

Indian Point spokesman Jim Steets said the earthquake data was in the plant's "Final Safety Analysis Report."

Steets said the spent-fuel pools are safe and the company has already emptied the shuttered Indian Point 1 pool and started a program to take more fuel from both of the working reactors to give them more room to empty the reactors during refueling.

"It's not the expense; it takes time and planning," Steets said. "There's a lead time for everything. These are big projects. We're waiting for NRC (Nuclear Regulatory Commission) approval to move more from Unit 3 now."

He said about 10 percent of Indian Point's spent fuel has been moved to dry cask storage on-site.

The committee expects to continue its plant review at its Monday meeting and scheduled earthquake experts to detail the region's risk.

## **Indian Point Review A Top Priority For Federal Regulators (NRPTC)**

By Lanning Taliaferro and Alice Kenny

New Rochelle (NY) Patch, March 23, 2011

In the wake of the Japanese earthquake and resulting nuclear catastrophe, Gov. Andrew Cuomo on Tuesday said that federal nuclear regulators have promised to make Indian Point their top priority in a nationwide review of nuclear plants.

The Indian Point nuclear power plant will be the first in the country to undergo a review of seismic risk by federal regulators, Gov. Andrew Cuomo said Tuesday.

The announcement came after members of the Cuomo administration, including Lt. Gov. Robert Duffy, met with officials from the US Nuclear Regulatory Commission (NRC) at the agency's Maryland headquarters.

"Indian Point will be the NRC's top priority and will be reviewed first among the 27 plants that are being reviewed by the NRC," Duffy said, adding that he did not know when the review would take place.

According to a report released last fall Indian Point, which lies near the Ramapo fault line, is at greater risk for an earthquake than any other nuclear plant in the eastern or central United States. That fact has come into focus in the aftermath of the March 11 earthquake and tsunami in Japan that destroyed the Fukushima Dai-ichi nuclear plant.

Cuomo has been a vocal opponent of Indian Point since at least 2007, when he was serving as the state's attorney general, and has repeatedly called for the NRC to deny the plant's reactors new licenses when the current ones expire in 2013 and 2015.

"My position has been that the plant is risky and should not operate, and that being said I was surprised to hear of the significant seismic risk," Cuomo told reporters on Tuesday.

The freshman governor went on to say that he took issue not only with Indian Point, but with the NRC's entire process of reviewing nuclear sites.

"They don't take a whole new look. They see it more as an update on the physical plant capacity," he said. "Things have happened, the world has changed."

The NRC has also agreed to share seismic data with state officials and include members of Cuomo's cabinet in on-site inspections of the Westchester plant.

Officials from Entergy, the company that owns the plant, discussed a range of issues with county legislators at a committee meeting on Monday.

John McCann, the company's vice president for nuclear safety, insisted that Indian Point could not face a disaster similar to that in Japan. But he did concede that federal regulators will likely force an overhaul of procedures designed to mitigate fallout from an earthquake.

"I have no doubt there will be changes we make in response to this event," McCann said, adding "we need to be careful about not moving too quickly."

At that meeting, lawmakers repeatedly raised concerns about the effectiveness of current evacuation plans, which only cover a 10-mile radius. About 18 million people live within 50 miles of Indian Point.

Legislator Peter Harckham (D-Katonah) said that he was evacuated during the 1979 meltdown at the Three Mile Island plant in Pennsylvania, and that the plan "didn't work."

"When I hear about evacuation, whether it's 10 miles or 50 miles, I personally don't have a lot of confidence," he said.

Cuomo on Tuesday echoed Harckham's concerns.

"Evacuation, I don't believe, is even a feasible concept when you're talking about this plant, in this area, with this [population] density," he said.

## **NRC, NY State Will Review Downstate Nuclear Plants' Ability To Resist Earthquakes (SYPS)**

By Tim Knauss

Syracuse (NY) Post-Standard, March 23, 2011

Albany, NY – Federal regulators will cooperate with New York officials as they review the vulnerability to earthquakes of two Downstate nuclear reactors, Gov. Andrew Cuomo said Tuesday after meeting with representatives of the US Nuclear Regulatory Commission.

Two controversial reactors at Indian Point Energy Center in Westchester County are among 27 units the NRC targeted for extra scrutiny last fall based on new earthquake data that became available several years ago, agency officials said.

The planned inspections have taken on new urgency since the March 11 earthquake and tsunami that caused a nuclear crisis in Japan.

The NRC's reassessment of seismic data began in 2005. An initial review of all 104 US plants found no need for additional measures to protect four Upstate New York reactors, including three in Oswego County and one in Wayne County, said Neil Sheehan, speaking for the NRC.

At 27 facilities, the NRC wants to collect more information about seismic risks to see if upgrades are needed, Sheehan said. The two Indian Point units are the only ones in New York on the list.

Cuomo, who opposes Indian Point's application for relicensing, said the NRC agreed to share seismic information with the state and to allow state representatives to participate in seismic inspections.

Relicensing of Indian Point has drawn significant opposition, in part because 20 million people live or work within 50 miles of the plants, Cuomo said.

## **Cuomo: Indian Point Now 'top Priority' For NRC (ATU)**

**Capitol Confidential**

By Casey Seiler, Capitol bureau chief  
Albany Times Union (blog), March 23, 2011

Gov. Andrew Cuomo, Lt. Gov. Bob Duffy and state Director of Operations Howard Glaser appeared in the Red Room to announce the outcome of Duffy and Glaser's meeting earlier today with officials of the Nuclear Regulatory Commission. The subject: the seismic vulnerability of the Indian Point nuclear facility in Westchester County.

Duffy detailed the NRC's agreement to make Indian Point its "top priority," and its willingness to sign a memo of understanding that it would share federal data on seismic risk with New York experts, and that state personnel would be included in the commission's on-site inspection of the facility.

Cuomo read from a letter he sent in 2007 in his capacity as Attorney General that called the NRC's decision not to consider seismic issues or potential terrorist threats as part of its licensing process "dangerously irresponsible." That letter was prompted by an earthquake in Japan that had briefly imperiled a nuclear power plant.

"This is not the first time that we've had issues with the Indian Point power plant," Cuomo said. "... My position has been for a long time that the plant is risky and the plant should not operate."

The NRC is slated to relicense Indian Point's reactor in 2013, and while the state has no say in that process, Cuomo signaled that he wouldn't be heartbroken if that assessment resulted in the plant's demise.

Cuomo pointed out that the plant's location has prompted worries about the difficulty of evacuation, among other issues. He noted that if the current 50-mile "circle of evacuation" around Japan's wounded Fukushima Daiichi Power Station was laid over Indian Point, "you're talking all of New York City, you're talking about parts of Connecticut, you're talking about Long Island, you're talking about New Jersey," he said. "By some estimates, 6 percent of the nation's population would be in that zone. So evacuation, I don't believe, is even a feasible concept when your talking about this plant in this area with this density."

Cuomo said the state would ultimately be able to replace the 2,000 megawatts of power produced by Indian Point through power facilities sited and scheduled to go on line in the next few years. (Plants capable of producing 3,000 megawatts have already been permitted, he said, while plants capable of producing another 3,000 megawatts are awaiting permits.)

The near-term effects of the loss of power in the state's electrical grid, Cuomo said, shouldn't be yoked to the entirely separate question of Indian Point's safety.

Once that margin of danger has been established by the state and the NRC, he said, the larger discussion about Indian Point's future would begin.

"What risk are you willing to live with?," Cuomo said. "That's what it's going to come down to at the end of the day."

Here's the news release from the governor's office:

Governor Andrew M. Cuomo today announced that the US Nuclear Regulatory Commission (NRC) has pledged to make Indian Point its first and top priority in its review of seismic risk at 27 nuclear plants throughout the country. At the request of the Cuomo Administration, the NRC has agreed to a cooperative review of Indian Point as a joint effort between the NRC and New York State.

As a result of the meeting today at NRC headquarters in Maryland between Lieutenant Governor Robert Duffy, Director of State Operations Howard Glaser, and top NRC officials, the NRC has also agreed to sign a memorandum of understanding that will:

Share federal data regarding seismic risk specific to Indian Point with New York technical experts

Include New York experts as part of the NRC on-site inspection team that will evaluate Indian Point with regard to seismic risk

In addition, NRC Chair Greg Jaczko has agreed to conduct a personal site inspection of Indian Point with New York officials.

"It is essential that the NRC move quickly to answer the significant and long-standing safety questions surrounding Indian Point," Governor Cuomo said. "We appreciate the NRC agreeing to move swiftly and we look forward to working closely with them on this issue to protect the health and safety of New Yorkers."

"I thank the NRC for hosting us today and for recognizing the legitimate concerns that exist regarding Indian Point," Lieutenant Governor Duffy said. "Seismic activity is a serious concern regarding the facility and we will now work with the federal government to make sure we get answers for the people of New York."

Indian Point is located in Westchester County, within fifty miles of where more than 20 million people live and work. Among its other structural and safety flaws, the facility is situated near a fault line and concerns have been raised about whether it was designed to withstand the seismic activity that could result from an earthquake.

Governor Cuomo has long been an opponent of Indian Point and has worked to prevent the federal relicensing of the facility. Governor Cuomo and senior officials will continue to work with the NRC to monitor the status of Indian Point and protect residents.

## **Gov. Cuomo: Feds To Make Indian Point Priority #1: UPDATED (NTDN)**

By Celeste Katz

New York Daily News, March 23, 2011

In the wake of Japan's earthquake-triggered nuclear disaster, Westchester's Indian Point nuclear power plant will become the US Nuclear Regulatory Commission's top priority first in a risk review of 27 plants nationwide, Gov. Cuomo said this afternoon.

As our Rich Sisk reported yesterday,

"Cuomo, who has long advocated closing the Buchanan plant because of its close proximity to 21 million people, demanded a top-to-bottom examination of the aging double-reactor plant last week. A study by a group of leading Columbia University seismologists has revealed that two faults – the Ramapo and the Stamford-Peekskill – intersect just north of Indian Point.

"It is an issue. We're going to have to look at whether this reactor should remain in operation, US Energy Secretary David Chu said in a TV interview Sunday. 'This is not to say that we believe that reactor is unsafe.'"

Lieutenant Governor Robert Duffy and Director of State Operations Howard Glaser met with top NRC officials in Maryland today. (Sisk has much more about that meeting on my NYDN brother blog in DC, Mouth of the Potomac.)

The federal agency has agreed to work with New York State to assess any dangers. The NRC has agreed share federal data regarding seismic risk specific to Indian Point with New York technical experts and include local experts on its inspection team. NRC Chair Greg Jaczko will inspect Indian Point personally.

"It is essential that the NRC move quickly to answer the significant and long-standing safety questions surrounding Indian Point," Cuomo said in a statement. "We appreciate the NRC agreeing to move swiftly and we look forward to working closely with them on this issue to protect the health and safety of New Yorkers."

UPDATE FROM KEN LOVETT:

"These are very good first steps," Duffy said at a Capitol news conference. "We want to make sure New York has answers to these issues regarding Indian Point."

No timeframe was given, but Cuomo said the NRC promised the review would be done in an "expeditious" manner. "It's an emotional topic," he said. "We want to make sure that before we reach any decisions, we have the facts and they are solid facts."

The governor said he wants answers to what the seismic risk is at Indian Point and if a significant risks is found, can it be mitigated.

The fact that the state will have its own team as part of the inspection ensures "people will have an independent source of evaluation, an independent source of information and that is good news."

He also said he believes seismic risks should be a factor in the plant relicensing decision.

Rather than doing a new risk assessment when it relicenses a plant, the NRC does an update on the physical plant capacity.

"My position was, new things have happened," Cuomo said. "There's new information. The world has changed. Reevaluate and look at the situation and decide whether or not you should grant this facility a license today."

Indian Point is a more serious question because of its proximity to New York City and other major population centers.

He said the NRC adjusted the seismic risk at Indian Point from 1 in 10,000 to 1 in 13,000. One in 10,000 is the standard that poses an immediate risk, he said.

Cuomo said he still believes the plant should be shut down rather than relicensed: "My position hasn't changed," he said. "This is a new factor and a new situation aside from whether or not the facility should be relicensed."

He acknowledged that presently there isn't enough power capacity for New York City to make up for the closure of Indian Point. But he said if Indian Point is found to be a safety risk, the state would have to find the replacement power.

"You would have to build it," he said.

Even with state involvement, ultimately relicensing decisions rest squarely with the feds and not the state, Cuomo acknowledged.

Former Westchester state Assemblyman Richard Brodsky, who has brought a lawsuit against the NRC over Indian Point, lauded Cuomo on the issue, but complained the NRC cannot be trusted to review the safety of the plant. Today, Brodsky, who is teaching at NYU, released a letter requesting more information about the plant.

"The NRC is the problem – it's not the remedy," said Brodsky. "You can't ask the NRC to go back and say whether all their decisions have been wrong. The NRC is to Indian Point what the SEC was to Wall Street three years ago."

## **NRC OK's 20-year Extension For Vt. Nuclear Plant (BOS)**

By Beth Daley

Boston Globe, March 23, 2011

The Nuclear Regulatory Commission issued the Vermont Yankee nuclear power plant a 20-year license extension yesterday, but the plant must still get state legislative approval to continue operating after its original license expires next year.

The NRC instructed its staff to issue the renewal March 10, the day before the Japanese earthquake and tsunami, but then placed a hold on the license because agency staff were too busy aiding Japan. Opponents of the reactor in Vernon, near the Massachusetts border, had hoped the pause would translate into a deeper review of the plant, which has the same design as the crippled Fukushima Daiichi nuclear facility in Japan that is releasing radioactive material.

"Today's action comes after five years of careful and extensive review and confirms that Vermont Yankee is a safe, reliable source of electricity and capable of operating for another 20 years," Larry Smith, Vermont Yankee spokesman, said in a statement.

NRC officials said yesterday that the staff had completed an in-depth review since Vermont Yankee first filed for an extension in 2006, including an environmental assessment in 2007 and safety evaluation in 2008. The independent Advisory Committee on Reactor Safeguards also reviewed the proposal.

Vermont is the only state that requires a nuclear plant to get legislative approval for an extension. Last year, the state Senate voted, 26-4, to close the plant when its license expires next year. Entergy, the plant's owner, has declined to discuss its plans. On Sunday, a vigil was held outside the plant to show solidarity with Japan, but also to protest nuclear power. Police said about 250 people attended; organizers say there were twice that many.

Yesterday, Governor Peter Shumlin of Vermont called the NRC's relicensing action "puzzling."

"Fortunately, Vermont has taken steps to close down the aging Yankee plant, and I have urged other states with older nuclear facilities to follow our example and take control of the lifespan of their plants," said Shumlin.

## **Vt. Lawmakers Want NRC To Again Review Vt. Yankee Safety (WCAX)**

By Kristin Carlson, WCAX News

WCAX-TV Burlington, VT, March 23, 2011

Following the nuclear crisis in Japan some Vermont lawmakers want federal regulators to review Vermont Yankee's safety again.

Yankee shares the same reactor design and is about the same age as the Fukushima plant in Japan. A day before the quake, the Nuclear Regulatory Commission announced it would extend Vermont Yankee's operating license for another 20 years, concluding a 5-year review of the plant's operations.

A group of Vermont lawmakers now want the NRC to suspend the license extension until regulators take another look at safety at the Vernon plant. They also want as much radioactive material as possible removed from the water in the spent fuel pool and instead put into dry cask storage.

"The radioactive release in Japan is the result of inundation by water," said Rep. David Deen, D-Westminster. "We may be a seismically inactive area but we do face the power of water if nature decides to inundate the Vermont Yankee plant. Is it – and the emergency support systems around it – up to the task of protecting the people of Vermont?"

Entergy owns Vermont Yankee and says its plants are designed to withstand earthquakes and floods.

## **The Pros And Cons Of Keeping Vermont's Nuclear Plant Open (WBUR)**

**All Things Considered**

By Sacha Pfeiffer

WBUR-FM Boston, March 23, 2011

BOSTON – Federal regulators have given final approval to continued operations at the nuclear reactor just across the Massachusetts border, in Vernon, Vt. But the fight over the Vermont Yankee plant may not be over.

Vermont is the only state that requires legislative approval for the re-licensing of nuclear plants – and last year the Vermont Senate voted against reissuing a new license for Vermont Yankee, whose current license expires in April 2012.

WBUR's All Things Considered host Sacha Pfeiffer spoke with Vermont Gov. Peter Shumlin, a plant opponent, and Vermont state Rep. Michael Hebert, a plant supporter, about their respective stances on Vermont Yankee.

## **Beyond Nuclear Decries Reckless Decision Of Nuclear Regulatory Commission To Give Vermont Yankee Reactor 20 More Years To Operate (Common Dreams)**

Common Dreams, March 22, 2011

TAKOMA PARK, MD - March 22 - Beyond Nuclear today decried the reckless decision-making by the Nuclear Regulatory Commission on March 21 to grant a 20-year license extension to the Vermont Yankee reactor, the same Mark I design as the severely damaged Fukushima Dai-ichi reactors still in an extremely dangerous state in Japan. Beyond Nuclear is urging the public to write letters and make calls to the NRC and Congress, to whom the NRC is responsible, condemning this outrageous gamble with public safety.

"The accident is not even over in Japan and the NRC chose this week to relicense the reactor that is a dead ringer for the Fukushima reactors that they are still struggling to save," said Paul Gunter, director of Reactor Oversight at Beyond Nuclear of the decision to relicense Vermont Yankee.

Meanwhile, Beyond Nuclear simultaneously welcomed an Order issued on March 21 by the United States Court of Appeal for the 3rd Circuit in Philadelphia questioning the wisdom of the NRC decision in April 2009 to extend the operating license by 20 years for the Oyster Creek nuclear power plant in New Jersey. Oyster Creek, owned by Exelon Nuclear, is not only currently the oldest nuclear reactor in the United States (Oct. 1969) but identical to the General Electric Mark I Boiling Water Reactors in various states of early meltdown at Fukushima. The court is considering a public challenge to the NRC 2009 decision that was granted after four years of litigation opposing the operating license extension for the Mark I Oyster Creek reactor.

Despite the NRC decision, Exelon negotiated a settlement in December 2010 with the State of New Jersey to only operate the reactor for another nine years. The agreement was made to avoid more litigation costs possibly leading to a multi-million dollar retrofit of cooling towers to prevent significant ecological damage to Barnegat Bay which is directly used to cool the reactor with 1.5 billion gallons of water per day.

The Vermont reactor, owned by Entergy, has been showing signs of deterioration with tritium leaks from unmaintained buried pipes carrying radioactive water; a cooling tower collapse; and a fire in the plant's transformer. The state of Vermont, supported by Governor Peter Shumlin, has voted to close the Mark I reactor on schedule at the end of its current license on March 21, 2012.

"These design problems and breakdowns at Vermont Yankee are all early warning signs that Entergy and the NRC are pushing production margins ahead of safety margins," Gunter said. "This will ultimately come at the expense of public health and safety. The NRC is demonstrating a rush to judgment when there is no need for it. This decision is not safety driven, it is schedule driven."

The GE Mark I Boiling Water Reactor design was recognized in 1972 as too vulnerable to containment rupture and radiation release in the event of a severe accident by Dr. Stephen Hanauer, a chief safety scientist in the Atomic Energy Commission. Dr. Hanauer recommended that the safety agency adopt a policy discouraging further use of the Mark I. In 1985, then NRC senior safety official, Harold Denton, said the Mark I had a 90% likelihood of containment failure in the event of an accident.

Rather than shut down the Mark I fleet, the NRC adopted a voluntary fix that will temporarily vent or defeat the undersized containment under severe accident conditions in order to save it. Early indications are that just such operations may have significantly failed Tokyo Electric Power Company operators at Fukushima Dai-ichi Unit 2 when a vent failed to open and release hydrogen gas generation which then exploded in containment possibly damaging the vital component.

At Oyster Creek, the carbon steel containment has shown signs of rusting and severe corrosion, a serious safety concern as the steel containment is the component credited for containing an accident.

"The Mark I was brought on line because the containment was small and so they were cheap and quick to build," Gunter said. "But given we have known this design is too dangerous since 1972, it is an unacceptable risk not only to still operate them but to extend their operating lives by another 20 years." Beyond Nuclear today decried the reckless decision-making by the Nuclear Regulatory Commission on March 21 to grant a 20-year license extension to the Vermont Yankee reactor, the same Mark I design as the severely damaged Fukushima Dai-ichi reactors still in an extremely dangerous state in Japan. Beyond Nuclear is urging the public to write letters and make calls to the NRC and Congress, to whom the NRC is responsible, condemning this outrageous gamble with public safety.

"The accident is not even over in Japan and the NRC chose this week to relicense the reactor that is a dead ringer for the Fukushima reactors that they are still struggling to save," said Paul Gunter, director of Reactor Oversight at Beyond Nuclear of the decision to relicense Vermont Yankee.

Meanwhile, Beyond Nuclear simultaneously welcomed an Order issued on March 21 by the United States Court of Appeal for the 3rd Circuit in Philadelphia questioning the wisdom of the NRC decision in April 2009 to extend the operating license by 20

years for the Oyster Creek nuclear power plant in New Jersey. Oyster Creek, owned by Exelon Nuclear, is not only currently the oldest nuclear reactor in the United States (Oct. 1969) but identical to the General Electric Mark I Boiling Water Reactors in various states of early meltdown at Fukushima. The court is considering a public challenge to the NRC 2009 decision that was granted after four years of litigation opposing the operating license extension for the Mark I Oyster Creek reactor.

Despite the NRC decision, Exelon negotiated a settlement in December 2010 with the State of New Jersey to only operate the reactor for another nine years. The agreement was made to avoid more litigation costs possibly leading to a multi-million dollar retrofit of cooling towers to prevent significant ecological damage to Barnegat Bay which is directly used to cool the reactor with 1.5 billion gallons of water per day.

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Beyond Nuclear aims to educate and activate the public about the connections between nuclear power and nuclear weapons and the need to abandon both to safeguard our future. Beyond Nuclear advocates for an energy future that is sustainable, benign and democratic.

## **Discharge Permit To Be Renewed (KEENE)**

By Kyle Jarvis, Sentinel Staff

The Keene (NH) Sentinel, March 23, 2011

A Vermont agency plans to renew a permit allowing the Vermont Yankee nuclear power plant to discharge water into the Connecticut River.

The move comes after a petition to the Vermont Agency of Natural Resources by the Connecticut River Watershed Council, which wants to review the permit once it's issued so it can examine potential effects on fish populations.

Vermont Yankee's discharge permit was last renewed in 2006, said David L. Deen, river steward for the watershed council.

The permit allows Vermont Yankee to discharge water into the river after it's used it to condense the steam generated by the nuclear reaction process, Deen said.

"The option is for them to use their cooling towers to return the water back to regular temperatures before discharging it back into the river," he said. "But they would have to use their own energy to do that." Deen and others are concerned that discharging the warmer water into the river creates confusion among American shad populations, he said.

"I spent 25 years as a fishing guide," he said. "Shad, like many aquatic species, their behavior is influenced by temperature. When they hit water that's 60 to 65 degrees, they stop and spawn right there."

That stops upward migration, which has caused the number of shad moving up the river above the plant to drop precipitously, he said.

"In 1991, 37,000 shad crossed the Vernon Dam," Deen said. "In 2009, 16 crossed."

Plant spokesman Larry Smith declined to comment on the petition without consulting the legal department, but called it “nothing new.”

The Vermont Agency of Natural Resources is preparing to start the process for issuing the permit, now that a few barriers have been conquered, said Deborah L. Markowitz, secretary for the agency. Those included new Environmental Protection Agency standards and the fact that few of these permits are issued by the Vermont agency, so outside help is needed for the process.

If the agency issues the permit, the council has 30 days to review and comment on it, Deen said.

“We’d review it to see if they’ve incorporated our concerns,” he said. “If they haven’t, we can appeal to the Vermont Environmental Court.”

Markowitz said the process for the renewal could take up to a year or more since the agency needs to hire a consultant to do the work. Kyle Jarvis can be reached at 352-1234, extension 1433, or [kjarvis@keenesentinel.com](mailto:kjarvis@keenesentinel.com).

## **NRC: Vermont Yankee Nuclear Power Plant ‘Good To Go’ For 20 More Years (FORBES)**

By Osha Gray Davidson

Forbes, March 23, 2011

In an announcement that surprised many because of its timing, the Nuclear Regulatory Commission announced that the Vermont Yankee Nuclear Power Plant has been relicensed to operate for 20 years. The plant, owned by Entergy Corporation, was first licensed in March, 1972. It has a containment vessel identical to the ones at the crippled Fukushima Dai-Ichi nuclear power plant – a GE Mark I.

“Obviously, we’re very pleased by the NRC’s action,” Entergy spokesman Mike Burns told me by phone. “This confirms that [Vermont Yankee] is a safe and reliable source of electricity...and it will be for another 20 years.”

Vermont’s congressional delegation begs to differ.

In a statement released today, US Senators Patrick Leahy (D), and Bernie Sanders (I), and Representative Peter Welch (D), said,

It is hard to understand how the NRC could move forward with a license extension for Vermont Yankee at exactly the same time as a nuclear reactor of similar design is in partial meltdown in Japan. We believe that Entergy should respect and abide by Vermont’s laws and the (memorandum of understanding) signed with the state in 2002, which requires approval by the Vermont Legislature, and then the Vermont Public Service Board, for the plant to continue to operate beyond 2012.”

The legislature voted to deny relicensing after radiation leaks were found outside the plant in February, 2010.

I asked Burns what reassurances can Entergy give that a natural disaster similar to the one that caused the catastrophe in Japan couldn’t happen at the aging Vermont reactor.

“All American nuclear power plants are required to have emergency plans,” he said, adding that Entergy’s policy is to go even further. “Our goal is to make sure [the plant] is safe.”

While some experts have speculated that the Mark I is inherently unsafe, Burns said Entergy is confident in the containment vessel’s integrity.

“The tsunami appears to have been a key factor,” in the Fukushima crisis, not the Mark I design, said Burns.

Key Facts about Vermont Yankee (from the NRC):

Location: Veron, VT

Operator: Entergy Nuclear Operations, Inc

Operating License: Issued – 3/21/1972

Original License Expires – 3/21/2012

Reactor Type: Boiling Water Reactor

Electrical Output: 510 MWe

Reactor Vendor/Type: General Electric Type 4

Containment Type: Wet, Mark I

## **Staff Finds No Reason To Shut Down Any US Reactors And No US Risk From Japanese Radiation (CWIRE)**

By Peter Behr

ClimateWire, March 22, 2011

The Nuclear Regulatory Commission staff has concluded that the Japanese nuclear crisis provides no reason to temporarily shut any US reactors for inspection or doubt their ability to operate safely.

"I am 100 percent confident from the review that we've done and continue to do every single day that we have a sufficient basis to conclude that the US plants continue to operate safely," Bill Borchardt, NRC executive director for operations, told commission members yesterday at a special meeting called on the Japanese reactor catastrophe.

He also said the staff has concluded there is no risk to US populations from radioactive releases from the Japanese plant.

"We ask ourselves the question every single day, should we take a regulatory action based on the latest information" from Japan, he said. So far, the staff has seen no need to do so, he added.

At the same time, Borchardt proposed that the staff undertake two additional investigations to confirm the ability of US nuclear reactors to withstand an extreme natural disaster coupled with the loss of outside power, the overheating of reactor cores and spent fuel, and the resulting explosions that struck the Fukushima Daiichi nuclear plant.

If approved by the commission, the first inspection would be a "quick look" check by veteran NRC staff and possibly retired senior staff at all 104 commercial nuclear reactors, to confirm that protective and emergency measures are in place and ready for use, he said. That could take three months, with an interim report to the commission after 30 days, Borchardt said.

Deeper inquiry awaits evidence from Japan

A deeper inquiry would have to await more evidence of the impact of the quake and tsunami on the Japanese reactor complex, he said. It could take a year to complete, and the "lessons learned" could lead to recommendations for NRC orders or guidance to the reactor owners, he added.

The longer review will also include staff and nuclear industry analyses of possible threats to reactors in the central and eastern United States, based on a new evaluation of seismic hazards completed by the US Geological Survey.

NRC Chairman Gregory Jaczko said he hoped the commission could respond soon to the staff's proposal and determine the kinds of investigations it wanted following up on the Japanese crisis.

Japanese crews continued preparations Tuesday to restore outside electric power to the Fukushima 1 nuclear complex, hoping that explosions and hydrogen fires have not damaged cooling systems for reactors and spent fuel pools and electrical connections at the reactors.

If electrical systems remain intact, power could be reconnected today to reactor unit No. 2, where an internal explosion has occurred, or at unit No. 4, where the spent fuel pool has lost all or most of its cooling water, according to US officials.

Tokyo Electric Power Co. is also hoping to restore electricity to the control rooms at units 1 through 4, to permit technicians to check the availability of instruments measuring temperatures inside the reactors and water levels in spent fuel pools, NHK World reported. Crews worked yesterday to check the condition of cabling and instruments before hooking up power to the No. 2 control room. Outside power has been restored to unit No. 5, which was shut down when the March 11 earthquake struck and has not been a center of the crisis.

But challenges and threats remain. Radiation levels at parts of the complex remain high. Work had to be suspended temporarily when smoke issued from reactor No. 3, and there now is concern about rising temperatures in a separate storage pool at the site that holds 2,000 tons of older, spent nuclear fuel. Crews began spraying water on that pool Tuesday, the Associated Press reported. TEPCO said the smoke from No. 3 was abating as of noon Tuesday local time.

"I would say optimistically that things appear to be on the verge of stabilizing," Borchardt said yesterday.

Borchardt told the commission yesterday, "It is likely that Units 1, 2 and 3 have experienced some degree of core damage. Today, all three units appear to be in stable condition," he said, adding that the integrity of primary containment shells around the reactors appears to be currently maintained.

But he added, "We don't know what the impacts of the earthquake are inside the reactor building. It may have survived perfectly well ... or there may be damage we just don't know about. We need to see what the inspection results are.

"I don't believe we have anywhere near a clear understanding of what the plant conditions are like within the reactor buildings: what kind of electrical cables have been damaged, what kinds of pumps and valves remain operable is a significant unknown.

"As the immediate crisis in Japan comes to an end, we will look at any information we can to gain experience from the event and to see if there are changes we need to make to further public health and safety."

Fukushima situation 'much better'

At a briefing for reporters yesterday, David Lochbaum, director of nuclear safety projects for the Union of Concerned Scientists, agreed that reports from Japan indicated progress in the crisis.

"There continue to be challenges, but the situation overall is much better than it was a couple of days ago," Lochbaum said. He said it was not clear whether, by the NRC's definition, the Fukushima's primary reactor containment was undamaged, or damaged but currently intact.

"Even if cooling is restored," Lochbaum said, "there may be issues restoring adequate cooling to all the material in all the vessels. It seems it's a big unknown."

Borchardt said the staff's confidence in the ability of the reactors to withstand natural disasters was based on the NRC's principle of "defense in depth," which includes redundant systems and features intended to prevent radioactive releases in the case of a severe accident.

These defenses were strengthened by the lessons learned from the 1979 Three Mile Island accident and, after Sept. 11, 2001, a recognition of risks to reactors from a potential terrorist attack utilizing a captured airliner, he said.

The NRC has a "station blackout" rule that requires plant licenses to have emergency backup electrical power sources that can continue operating if the outside power grid is down. There are rules requiring plants to be able to withstand flooding, and measures to deal with the risks of hydrogen explosions if equipment fails or is damaged in emergencies, he said.

"All of these relate in one way or another to the tragic events in Japan."

## **Safety Upgrades At US Nuke Plants Worried UN Agency (REU)**

By Tom Doggett

Reuters, March 23, 2011

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

## **US Court Questions Oyster Creek Nuclear License After Japan Disaster (NEWARKSL)**

By MaryAnn Spoto

Newark Star-Ledger, March 23, 2011

LACEY — A federal court has asked the US Nuclear Regulatory Commission to explain what impact the damage to Japan's nuclear reactor may have on the 2009 relicensing of the Oyster Creek Nuclear Generating Station in Ocean County.

In the midst of hearing arguments over whether Oyster Creek should have received an operating extension, the US 3rd Circuit Court of Appeals in Philadelphia sent a letter Monday asking the nuclear commission to "advise the court what impact, if any, the damages from the earthquake and tsunami at the Fukushima Dai-ichi Nuclear Power Station have on the propriety of granting the license renewal application for the Oyster Creek Generating Station."

That facility is nearly a carbon copy of the Oyster Creek plant.

The NRC approved a 20-year license renewal for Oyster Creek, the nation's oldest operating nuclear plant on April 8, 2009, the day before the license was scheduled to expire.

But the plant's owner, Illinois-based Exelon Corp., announced it would shut the operation in 10 years, a move that allowed the company to avoid spending \$800 million to install eco-friendly cooling towers at the Lacey Township nuclear facility.

The Sierra Club of New Jersey contends the court's request is tantamount to advising the NRC to reconsider its approval.

"I see this as a very clear letter to the NRC saying, 'You ought to reconsider your position,'" said New Jersey Sierra Club director Jeff Tittel. "This is the best thing we've seen since the plant was relicensed."

Radiation has been released at Japan's reactor since a tsunami triggered by an earthquake about two weeks ago knocked out power to the facility, disabling the system's ability to cool the spent fuel rods.

Diane Screnci, an NRC spokeswoman, said it's not uncommon for courts to ask additional questions based on current events.

"We were asked a question by the court, and we'll be providing them with an answer," she said.

Environmental groups contend that corrosion of the facility's dry well liner — a steel structure designed to contain nuclear releases — and a more recent release of tritium into nearby aquifers are evidence the 42-year-old plant is not safe.

Insisting the plant is safe, Larry Ragonese, a spokesman for the state Department of Environmental Protection, said his agency is reviewing Oyster Creek's design plans in the wake of the Japanese incident "just to see if there aren't any lessons that need to be learned here."

Previous coverage:

- US Sen. Menendez wants safety assurances on N.J. nuclear plants
- Japanese Fukushima Daiichi, N.J. Oyster Creek nuclear plants use same reactor design
- N.J. opposes 60-year limit for storing used nuclear fuel
- PSEG Nuclear's reactors in Lower Alloways Creek Township built to withstand natural disasters, operators and federal officials say
- Japan nuclear plant has second explosion, injuring 11 workers

## **Court To NRC: How Does Japan Impact Oyster Creek License Renewal? (ASBPP)**

By Kirk Moore

Asbury Park Press, March 23, 2011

A federal appeals court is asking the US Nuclear Regulatory Commission if events at the Fukushima Daiichi reactor site have changed the agency's thinking about the wisdom of granting a license renewal for the Oyster Creek nuclear power plant in Lacey.

The Third Circuit Court of Appeals in Philadelphia heard oral arguments in January on an appeal by the New Jersey Environmental Federation and other groups challenging the NRC's 20-year license extension.

In its letter, the court asks "what impact, if any, the damages from the earthquake and tsunami at the Fukushima Daiichi Nuclear Power Station have on the propriety of granting the license renewal application" for Oyster Creek.

News of the letter cheered plaintiffs in the appeal, who said it raises another range of issues for the court to consider.

"Old plants in highly populated areas shouldn't be relicensed for 20 years," said Jeff Tittel of the Sierra Club. "What the court is really telling the agency is, 'Hey, you need to take a look at this.' It's a very important sign because America needs to re-examine its policy on these old plants."

NRC spokesman Neil Sheehan said he had not seen the letter Monday and could not comment directly. But federal nuclear commissioners and staff conferred Monday morning on a plan to quickly evaluate American nuclear plants and their safety preparations against what is known so far about the Japanese accidents.

"They want the staff to do a quick look at US reactors to see if any changes are

warranted," Sheehan said. That will be followed within 90 days by a more in-depth report and follow-ups in the months to come, he said.

The NRC license renewal enabled Oyster Creek owner Exelon Corp. to potentially operate the plant until 2029. But Exelon struck a deal with Gov. Chris Christie to close the plant by 2019, under pressure from New Jersey environmental officials who wanted cooling towers built to reduce the plant's daily draw of cooling water from Barnegat Bay.

Opened in 1969, Oyster Creek is a General Electric Mark 1 boiling water reactor similar to the Japanese installations, but the New Jersey plant does have a number of differences and safety improvements made over the years, according to the NRC and a recent filing that plant owner Exelon Corp. submitted to the agency last week.

(Page 2 of 2)

Inert nitrogen gas inside the reactor containment and a venting system to safely release hydrogen are designed to guard against a buildup of the explosive gas that blew out roofs and wall panels at the Japanese plants.

Emergency generators and their electrical equipment are protected from floods by elevation or watertight doors, as are emergency core cooling systems, the company says.

Oyster Creek has two backup diesel generators – engines about the size of locomotives – plus two gas combustion turbine generators. Backup systems start automatically with the loss of external power lines coming into the plant, according to the company filing. The plant has portable pumps in addition to backup systems.

"In effect, all Exelon plants have six or more ways to put water into the core for emergency cooling," the company says.

In line with NRC rules, the plants can withstand historic earthquake strength in their

regions within 200 miles, between 6.0 and 6.9 on the Richter scale for Exelon's territory in Illinois, Pennsylvania and at Oyster Creek. Tsunamis are less of a threat, Oyster Creek is afforded some protection by barrier beaches that would take the first impact and nearly four miles of Barnegat Bay shallows, the company says.

While tsunamis are rare on the East Coast, hurricanes are a factor in emergency planning for Oyster Creek. The plant's location on a neck of land between the South Branch of the Forked River and its namesake stream puts it 23 feet above sea level, above the 7- to 19-foot hurricane surge height scenarios that have been calculated for that part of Barnegat Bay by the US Army Corps of Engineers and emergency planners.

The highest historic storm tide recorded in the area was about 7 feet above sea level during the great gale of March 1962, the company says.

## **Japan Disaster Spurs Court To Revisit Safety Of Exelon-owned Nuclear Plant (CHIT)**

By Ameet Sachdev And Julie Wernau

Chicago Tribune, March 23, 2011

An Exelon spokesman said, "We will consider internally what the right response is and respond by the deadline accordingly."

Sheehan said the NRC plans to respond to the court's request for more information but would not comment further.

The court's request for more information comes near the conclusion of the case.

In May 2009, a coalition of public-interest groups, including the New Jersey Environmental Federation and Grandmothers, Mothers and More for Energy Safety, challenged the NRC's decision a month earlier to extend Oyster Creek's license.

The groups charged in court papers that the license had been renewed despite evidence of corrosion in the reactor's steel containment structure.

The coalition requested additional hearings during the relicensing proceedings to address the frequency and scope of tests to monitor the containment vessel but were denied by the NRC, said Richard Webster, a New Jersey lawyer who represents the coalition.

"If there's corrosion you don't know about, that's a big problem, especially in light of containment failures in Japan," Webster said.

Legal briefs on the coalition's appeal were filed last year, and the court heard arguments in January. It's unusual for a court to ask for additional briefs on an issue that wasn't addressed before, Webster said. Then again, the events in Japan were extraordinary.

"I'm very gratified that the court is asking questions," Webster said. "It goes to show the court is taking nuclear safety very seriously."

Exelon in December announced that it would shut down Oyster Creek by 2019, 10 years before its license expires. The company negotiated a deal with the New Jersey governor's office to end power generation rather than build expensive cooling towers to handle the plant's thermal discharge.

asachdev@tribune.com

## **Appellate Court Wants More Information About Oyster Creek, Tsunamis And Earthquakes (PATCH)**

By Patricia A. Miller

Patch.com, March 23, 2011

The Third Circuit Court of Appeals has directed lawyers for the federal Nuclear Regulatory Commission to provide more information about the "propriety" of relicensing the Oyster Creek Nuclear Generating Station in the wake of the earthquake and tsunami in Japan.

The NRC relicensed the then-40-year-old plant on April 8, 2009 to operate for another 20 years, over the objections of a coalition of citizen groups that fought the plant's relicensing. Oyster Creek is the oldest nuclear plant in the United States.

"At the direction of the court, counsel for the United States Nuclear Regulatory Commission is directed to advise the court what impact, if any, the damages from the earthquake and tsunami at the Fukushima Daiichi Nuclear Power Station have on the propriety of granting the license renewal application for the Oyster Creek Generating Station," the court's directive states.

The court gave NRC attorneys and Exelon -Oyster Creek's owner - until April 4 to submit any relevant information.

NRC attorneys are reviewing the court's order and will respond in time to meet the deadline, NRC spokesman Neil A. Sheehan said today.

"On Monday morning, the five-member, presidentially appointed Commission that oversees the NRC was briefed by the agency's staff on reviews the agency plans to undertake in response to the Japan reactor events," Sheehan said. "One will be a "quick-look" assessment to determine if any immediate actions are needed, with the results due in 30 days. There will also be a more extensive review done. The findings of that evaluation are expected within 90 days. Of course, the NRC will continue to look for lessons learned from the events in Japan."

Richard Webster, the lead attorney for the citizens' coalition, said he was surprised by the appellate court's action.

"Normally the court doesn't do that," he said. "The more information the court has, the better. It certainly helps us make our case."

The coalition includes the New Jersey Environmental Federation, The New Jersey Chapter of the Sierra Club, the Nuclear Information and Resource Service, the New Jersey Public Interest Research Group and Grandmothers, Mothers and More for Energy Safety. Attorneys for the coalition have until April 18 to respond to submissions.

The Nuclear Information and Resource Service today launched a campaign for the permanent shutdown of the 23 General Electric Mark I reactors currently operating in the United States. That includes Oyster Creek.

"For nearly 40 years, top US safety officials at the Atomic Energy Commission and later the Nuclear Regulatory Commission have warned about the safety shortcomings of the GE Mark I design," said NIRS Executive Director Michael Mariotte. "A 1972 recommendation that the US stop licensing the design was accepted on technical grounds but denied by the AEC's (Atomic Energy Commission) top safety official, Joseph Hendrie, because it 'could very well be the end of nuclear power.'"

In 1986 Harold Denton, then the top safety official at the NRC, warned that Mark I containments have a 90 percent probability of failing under accident conditions."

The Nuclear Information and Research Service also said the reactors have a design flaw that places the irradiated fuel pools above the reactor core and outside the primary containment.

"When the containment buildings exploded, release pathways from the irradiated fuel pools appeared," said Mariotte. "And the explosions might not have merely exposed the fuel pools, but damaged them as well, allowing the loss of water and subsequent release of radiation."

But Sheehan said that although the Oyster Creek plant does have a Mark I boiling water reactor and containment, there are design differences.

Boiling water reactors in the United States with Mark I containments have hardened vents that allow for venting hydrogen to prevent the kind of explosions seen in Japan, Sheehan said.

Toruses - large reservoirs below the reactors used for cooling - at boiling water reactor, Mark I plants in the United States were reinforced years ago, he said.

"We are still endeavoring to learn more about differences between the US and Japanese plants, though the focus for now is on safely shutting down the Japanese units," Sheehan said.

Oyster Creek is the only one of Exelon's nuclear plants located near the Atlantic Ocean. But Exelon notes on its website that the tsunamis and earthquakes are "not typical" on the East Coast. The plant is more than five miles inland from the ocean and 23 feet above mean sea level, the company's website states.

## **Appeals Court Considers Site For Nuclear Disposal (AP)**

By Nedra Pickler, Associated Press

Associated Press, March 23, 2011

WASHINGTON – Federal appeals court judges heard arguments Tuesday in a case over whether the Obama administration had the authority to stop plans to bury the nation's nuclear waste in Nevada.

South Carolina and Washington state are among those suing the president and other federal officials to try to restart plans to ship their radioactive spent nuclear fuel to a repository 90 miles from Las Vegas at Yucca Mountain.

Congress had chosen Yucca Mountain as the leading candidate for waste disposal, but opponents are concerned about contamination and the Obama administration said it would not consider the site and would look for alternatives.

The case comes as the nation is questioning the future of nuclear plants in the wake of a nuclear crisis in Japan. A plant has been leaking radiation since a powerful earthquake and resulting tsunami hit the country on March 11.

The United States has no long-term plans to dispose of its nuclear waste. Arguments before a three-judge panel of the appeals court in Washington focused on whether the federal government has made a final decision yet that the states can appeal.

Last year, the Energy Department filed a motion with the Nuclear Regulatory Commission to withdraw its application for the Yucca Mountain repository. The commission has not ruled on that motion, but the Energy Department has gone ahead with dismantling the project.

Barry M. Hartman, an attorney arguing against the administration's decision, said Energy Department was acting on the orders of the president, who he contended can't just opt out of the choice of Yucca Mountain made by Congress in law. "He had no authority to reverse it," Harman argued.

The three appellate judges assigned to the case — all Republican nominees — questioned whether they can get involved at this point when the commission's decision is still pending. But they pressed the Obama administration's lawyer, Ellen Durkee, on when — or if — the commission is going to rule.

Durkee said she didn't know when the commission plans to act — the commission's chairman recently refused to tell reporters whether it ever will. Durkee argued there's no deadline and although there hasn't been much action lately, "the licensing proceeding is going forward."

"It's going forward by standing in place," replied the court's chief judge, David Sentelle. Sentelle asked what would happen if the commission sits on the motion with no action for 20 years. Durkee replied that a new case could be filed arguing the commission was making an unreasonable delay, but she didn't think they were there yet.

Judge Brett Kavanaugh questioned whether the Energy Department would comply if the commission overturned its decision. She said it would, while exploring options to appeal.

## **Obama Lacks Authority To Shutter Yucca Site, Court Told (MCT)**

By James Rosen, McClatchy Newspapers

McClatchy, March 23, 2011

WASHINGTON — Lawyers for Washington state and South Carolina on Tuesday accused President Barack Obama of having exceeded his constitutional power in shuttering the Yucca Mountain nuclear waste repository.

Washington Assistant Attorney General Andrew Fitz told a federal appellate court that Obama's refusal to fund continued development of the Nevada disposal site violates the 1982 Nuclear Waste Policy Act.

"He's acting unconstitutionally under the separation of powers doctrine because he doesn't have the authority under the statute," Fitz told a three-judge panel of the US Court of Appeals for the District of Columbia Circuit. "He had no authority to reverse it."

In 1987 amendments to the nuclear waste law, Congress designated Yucca as the central site for radioactive debris from the nation's 104 commercial reactors — and from nuclear weapons sites that have held even more toxic waste since the Cold War.

The government has spent \$10 billion developing the Yucca site, but Obama has stripped funding for it from his last two budget proposals to Congress.

Republicans, who have crafted legislation to revive the repository, accuse Obama of making a political gesture to Senate Majority Leader Harry Reid of Nevada, whose residents dislike the notion of burying radioactive debris from across the country at a subterranean site 90 miles northwest of Las Vegas.

Washington, home to the Hanford nuclear reservation in the eastern part of the state, and South Carolina, which hosts the Savannah River Site on its border with Georgia, filed suit against Obama. Aiken County, S.C., where Savannah River is based, and three businessmen in Washington state, also joined the suit.

Other large former nuclear weapons complexes include the Idaho National Laboratory and the Oak Ridge National Laboratory in Tennessee.

Chief Judge David Sentelle and Judge Brett Kavanaugh repeatedly challenged Fitz on whether the lawsuit by Washington and South Carolina is premature.

Sentelle and Kavanaugh said three administrative judges within the Nuclear Regulatory Commission in June had rejected a bid by Energy Secretary Steven Chu to withdraw the Energy Department license to build and operate the Yucca repository.

The case has been before the NRC since then, with no indication of when the full commission will rule on the license withdrawal.

The judges and lawyers didn't address the substantive merits of the case, avoiding the complex scientific and environmental issues tied to the Yucca site.

South Carolina Attorney General Alan Wilson echoed Fitz's courtroom claims in comments after the hearing.

"The government's decision to arbitrarily break federal law and derail Yucca Mountain is wrong and unconstitutional," Wilson said. "Congress passed laws to build Yucca Mountain as a safe repository for America's nuclear waste."

At Obama's direction, Chu set up the Blue Ribbon Commission on America's Energy Future in January 2010 and gave it two years to come up with an alternative to drilling deep tunnels beneath Yucca for nuclear waste disposal.

"Nuclear waste storage at Yucca Mountain is not an option," said Lee Hamilton, the panel's co-chairman and a former Indiana congressman. "The commission will be looking at better alternatives."

## **Appeals Court Hints Lawsuit Over Yucca Nuclear Waste Repository May Be Premature (NYT)**

By Hannah Northey

Greenwire, March 23, 2011

A federal appeals court suggested today that challenges to the Obama administration's decision to withdraw from developing the Yucca Mountain, Nev., nuclear waste repository could be premature.

But the three-judge panel of the US Circuit Court of Appeals for the District of Columbia also told the challengers that they could file a new petition when there is a final agency decision to dispute.

At least one judge appeared to question the administration's political maneuvers in attempting to circumvent the 1982 Nuclear Waste Policy Act, which outlines a limited procedure for choosing a permanent nuclear waste repository.

South Carolina, Washington and other petitioners challenged the federal government's Jan. 29, 2010, decision to withdraw "with prejudice" an application the Department of Energy had submitted to the Nuclear Regulatory Commission to construct the Yucca Mountain dump. The repository would have stored high-level nuclear waste and spent nuclear fuel.

The states maintain that the federal government's withdrawal of its application violates the very specific and prescriptive 1982 nuclear waste law, which Congress designed to be detailed and restrictive after two prior siting attempts crumbled under

intense local political opposition. Senate Majority Leader Harry Reid (D-Nev.) ran his successful re-election bid in 2010 in part on his success in shutting down the project.

By changing course as it did, the government violated the Administrative Procedure Act and the National Environmental Policy Act (NEPA), the petitioners say.

But the three-judge panel today seemed to agree the petitions were filed too early, before the government had made a final decision that could be legally challenged.

NRC is currently deciding whether to allow DOE to withdraw its application to develop the repository. The agency could decide at any time.

"We have to have finality," said Chief Judge David Sentelle.

While it is not clear whether DOE would comply with NRC's decision, Judge Brett Kavanaugh asked: "Why shouldn't we wait for the NRC to act?"

The petitioners argue the federal government never said why Yucca Mountain was scientifically unsuitable for use as a repository and that after spending more than 15 years and billions of dollars investigating the site, DOE has ended agreements with contractors, closed the site and abandoned any funding for the program.

Under the process laid out under the nuclear waste law, the federal government must move forward with the application process until NRC issues a decision on the merits of the application, the petitioners said.

The decision to withdraw the application violates NEPA because it constitutes a "major federal action" that must be supported by environmental analysis, which the government failed to conduct, they said. Even if the government did not violate NEPA, the decision is not supported by any administrative record and therefore violates the APA.

The Obama administration counters that Energy Secretary Steven Chu has broad authority under the Atomic Energy Act and the DOE Organizational Act and that he is authorized to make "discretionary policy decisions regarding disposal of nuclear waste and spent nuclear fuel."

Justice Department lawyer Ellen Durkee did not dwell on the merits of the decision, preferring instead to focus on the premature filing of the petition.

"Judicial review ... is neither appropriate nor available," Durkee said.

That prompted Sentelle to ask what would happen if NRC never acts. Durkee responded that the challengers would be required to file a new petition. She also pledged to the court that the government would comply with NRC's decision after the appeals process is complete.

Of the three judges, Kavanaugh seemed most skeptical of the government's motives.

"It does seem that DOE has made a considered decision not to comply with the law passed by Congress," he said.

Reporter Lawrence Hurley contributed.

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## **Yucca Mountain Fate Argued In Court (LVSRJ)**

[Las Vegas Review-Journal](#), March 23, 2011

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

## **Mississippi Gov. Haley Barbour Makes Early Swing Through Nevada As He Contemplates Run For President (LVS)**

By Anjeanette Damon

[Las Vegas Sun](#), March 23, 2011

Mississippi Gov. Haley Barbour swung through Reno and Carson City today, meeting with party leaders, lobbyists, lawmakers and Gov. Brian Sandoval in an attempt to prove he'll take Nevada seriously if he runs for president.

He was direct about his purpose, eschewing the traditional candidate's pre-campaign obfuscation about his real reason for being in an early contest state.

"I'm here because I'm thinking about running for president," he told reporters assembled at the Plaza Hotel in Carson City. "If I run, I will compete to win Nevada."

Nevada is the third state on the presidential primary calendar after Iowa and New Hampshire.

In a brief question and answer session, Barber said he was well received by Nevada Republicans, rejecting the idea that Southern Republicans and Western Republicans, who are traditionally more libertarian, are all that far apart on the issues.

"I don't see a big difference between Mountain Republican and Southern Republicans," he said.

Barbour also was forthright about his unconditional support for storing nuclear waste at Yucca Mountain.

"We've been collecting taxes for that specific purpose and the American people should get their money's worth," he said.

Will that position hurt his candidacy in Nevada?

"Nah," he said before turning to the next question.

When it comes to legalized prostitution, however, Barbour said that's up to Nevadans.

"We don't have legalized prostitution in Mississippi," he said. "I'd be against it if someone proposed it."

Although Barbour met with Sandoval, he said he didn't ask Nevada's popular new governor to support his presidential bid.

"He's a great guy, we're very proud of him," Barbour said. "If I were he, I wouldn't even think about endorsing anybody for president for a long, long time. I assume he's going to keep his powder dry until we get up to or even beyond the Nevada caucuses."

## **Mississippi Governor Explores Presidential Bid In Nevada (LVSRJ)**

Las Vegas Review-Journal, March 23, 2011

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

## **Last word in nuclear safety: Yucca (RALEIGH)**

By RICK MARTINEZ

Raleigh News & Observer, March 23, 2011

It's becoming increasingly clear that the biggest threat of uncontained radiation from Japan's earthquake-induced nuclear-plant disaster lies in the spent fuel rods stored on site, not the active power plant cores. I don't know if the prime minister can order that Japan's spent fuel rods be placed in a secured storage facility deep inside a mountain. But I do know that option is available to President Barack Obama. He should take it.

Although the president has claimed he's a convert to the environmental and economic benefits of nuclear power, he's gutted his support by taking off the table the long-awaited Yucca Mountain nuclear waste storage facility in Nevada. Obama has yielded to the ultimate "Not In My Back Yard" selfishness demonstrated by Nevada residents who have chosen to ignore the safety evidence generated by more than \$10 billion worth of scientific and environmental studies conducted on the project.

Instead, Energy Secretary Steven Chu has formed a panel to look for alternatives to Yucca Mountain. The president went even further by eliminating funding for Yucca's development from his proposed 2012 budget even though it has a dedicated revenue stream.

Back in 1982 when Congress passed a law creating the nuclear waste storage facility, it authorized a fee on utilities that use nuclear power. Among those that pay the fee are Duke and Progress Energy, North Carolina's electric cooperatives and the state's municipal power agencies. Since Yucca still isn't open, the money has been piling up. The fee now generates about \$750 million a year, which explains why the federal Nuclear Waste Fund has a balance that exceeds \$24 billion. North Carolina ratepayers have paid nearly \$1 billion into the fund. Earlier this month, electric utilities went to court to stop collection of the fee.

On another legal front, Washington and South Carolina have begun a court challenge of Obama's unilateral abandonment of Yucca Mountain, which the administration did without securing congressional repeal of the law that created the project.

Legalities aside, the president should learn the lessons Japan's nuclear calamities are teaching us. Obama should not only resume development of Yucca Mountain, he should speed it up.

Such a move has the Republican support he says is key to doing what's best for the American people. On March 3, 64 Republicans introduced legislation that calls for building 200 more nuclear plants in the US by 2030.

Included in the bill is a call for the Nuclear Regulatory Commission to license Yucca Mountain within six months unless there are technical and scientific reasons not to do so. Whining from Nevada tourism officials and the no-nuke crowd doesn't count.

Even if the Japanese earthquake experience further slows the development of nuclear power here, it should not slow the drive to open Yucca. If anything, Japan's experience should accelerate it. Storing spent fuel rods at a nuclear plant is dangerous and an easily avoidable risk

According to the Nuclear Energy Institute, a trade association, 64,000 metric tons of spent fuel are stored at US nuclear sites. Of that, 49,000 tons are stored in deep water pools like those used at the Japanese plants and at the Shearon Harris plant in Wake County.

What Japan is demonstrating to us is clear: the need for isolated nuclear waste storage facilities is separate from the debate about whether nuclear power is safe enough to continue as a major component of our energy portfolio. I wish the no-nuke folks and environmentalists would champion this key point - because even if they were successful in stopping the construction of new nuclear plants and in closing existing plants, one more step would be necessary.

The next logical step in nuclear safety? Gather up the 64,000 tons of nuclear waste spread throughout the country and store it inside a single mountain in Nevada.

## **Reactors' Spent Fuel Pools: Serious Safety, Security Hazards (BELLH)**

By NAJMEDIN MESHKATI

Bellingham (WA) Herald, March 23, 2011

"Probable impossibilities are to be preferred to improbable possibilities." - Aristotle

An unimaginable natural disaster which was a combination of a monster 9.0 earthquake and an ensuing powerful tsunami triggered unprecedented "secondary" and "tertiary" effects of reactors meltdown, fire and radiation release at the Fukushima Daiichi Nuclear Power Station in Japan.

What is unfolding is the realization of probable impossibilities: The compromise of a nuclear power plant, as a result of a tsunami caused by an earthquake, would be a creative mind's scenario in a Hollywood disaster movie. Yet is happening before our own eyes. And it is a rude awakening to reconsider seriously our wishful assumptions of our systems' reliability and the vulnerability of the redundant safety systems to common mode failures.

Out of the six nuclear reactors at the Fukushima plant, two have had partial meltdowns, accompanied by powerful hydrogen explosions. Thankfully, their primary containment vessels, made of concrete and steel and able to prevent radiation from escaping, were mostly holding on (at least for five of the six reactors), despite the very strong motions from the earthquake. (Reactor number 2 suffered a minor breach of the primary containment.) These reactors are not out of the danger zone yet as their fuel rods contain residual heat and they need to be cooled. Most likely this will be accomplished by dumping more seawater into the vessel, then venting the resulting steam to the atmosphere and continuing this process of "feed and bleed" until they can be stabilized.

But at present, the gravest danger at the Fukushima plant is the dire condition of the spent fuel storage facilities which contain tons of still highly radioactive and "hot" spent fuel rods. Spent fuel (otherwise known as nuclear waste) has been of a secondary concern prior to this impending disaster, despite its immense importance. In many of nuclear plants around the world, the practice is for old rods to be stored in 30- to 40-foot deep body of water pools with a cooling system to dissipate the intense heat they give off. These pools are located in the containment area. However, loss of water or its circulation could convert the pools to a wet "lethal sauna" with rising levels of radioactive steam. An explosion last Tuesday damaged the building of Reactor No. 4, its roof and, according to last Wednesday's Congress testimony of the chairman of the US Nuclear Regulatory Commission, resulted in all the water in these pools to boil dry. In his words: the radiation levels are extremely high, which "impact the ability to take corrective measures."

Spent fuel pools are currently in use at all 65 sites with operating commercial nuclear power reactors in the United States. The unfolding nightmare in Fukushima tells us that these are major safety and security sitting ducks in 33 states of the union. A major study by the National Research Council in 2005 on the safety and security of spent fuel storage found that an accidental or a terrorist attack that "partially or completely drained the spent fuel pool could lead to a propagating zirconium cladding fire and the release of large quantities of radioactive materials to the environment." It recommended that "the NRC should ensure that power plant operators take prompt and effective measures to reduce the consequences of loss-of-pool-coolant event in spent fuel pools that could result in propagating zirconium cladding fires."

More ominously, these spent fuel pools are gradually approaching their full capacity, and it is projected that up to three or four nuclear power plants will reach full capacity in their spent fuel pools, each year for at least the next 11 years.

The Japan disaster notwithstanding, and just to highlight the urgency to paying serious attention to this issue in the United States, one can point to the dangerous safety condition of the spent fuel pool at the Unit 1 of the Millstone nuclear power plant in Connecticut, which was the subject of a protracted and controversial investigation by the NRC and was the topic of a special investigation and article in the Time magazine. This case, according to the article, resulted in some major policy changes in the NRC, as well the inclusion of all Millstone reactors in the NRC's "hall of shame," which is the high-scrutiny "watch list" of troublesome reactors.

We have to learn lessons from Fukushima and count our blessings in the United States. And urgently start, before it is again too late, decommissioning the highly risky spent fuel pools, now scattered all over the country in 33 states. This can be accomplished by reactivating the Yucca Mountain deep geologic disposal site for high-level nuclear waste, the study of which has been going on for more than 25 years with the staggering cost of \$38 billion to date.

Making Yucca Mountain the solution to the nuclear waste disposal problem is a vital public policy issue that requires bold leadership from the administration and bipartisan support. It is fortuitous that in this critical juncture, Dr. Steven Chu, a Nobel physicist, is leading the US Department of Energy. In light of what's happening in Japan, he ought to lead the effort to reconsider the decision to withdraw Yucca Mountain's license application from the NRC, restore its funding, and urgently reactivate the project.

In the age of probable impossibilities, we cannot afford to stick to wishful thinking or romantic fascination of the improbable failure of even a single one of these 65 dangerous sites. Exhibit A: Fukushima.

#### ABOUT THE WRITER

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### **AP IMPACT: US Spent-fuel Storage Sites Are Packed (AP)**

By Jonathan Fahey And Ray Henry, The Associated Press

Associated Press, March 23, 2011

The nuclear crisis in Japan has laid bare an ever-growing problem for the United States — the enormous amounts of still-hot radioactive waste accumulating at commercial nuclear reactors in more than 30 states.

The US has 71,862 tons of the waste, according to state-by-state numbers obtained by The Associated Press. But the nation has no place to permanently store the material, which stays dangerous for tens of thousands of years.

Plans to store nuclear waste at Nevada's Yucca Mountain have been abandoned, but even if a facility had been built there, America already has more waste than it could have handled.

Three-quarters of the waste sits in water-filled cooling pools like those at the Fukushima Dai-ichi nuclear complex in Japan, outside the thick concrete-and-steel barriers meant to guard against a radioactive release from a nuclear reactor.

Spent fuel at Dai-ichi overheated, possibly melting fuel-rod casings and spewing radiation into the air, after Japan's tsunami knocked out power to cooling systems at the plant.

The rest of the spent fuel from commercial US reactors has been put into dry cask storage, but regulators only envision those as a solution for about a century and the waste would eventually have to be deposited into a Yucca-like facility.

The US nuclear industry says the waste is being stored safely at power-plant sites, though it has long pushed for a long-term storage facility. Meanwhile, the industry's collective pile of waste is growing by about 2,200 tons a year; experts say some of the pools in the United States contain four times the amount of spent fuel that they were designed to handle.

The AP analyzed a state-by-state summary of spent fuel data based on information that nuclear power plants voluntarily report every year to the Nuclear Energy Institute, an industry and lobbying group. The NEI would not make available the amount of spent fuel at individual power plants.

While the US Department of Energy previously reported figures on overall spent fuel storage, it no longer has updated information available. A spokesman for the US Nuclear Regulatory Commission, which oversees nuclear power plant safety, said the capacities of fuel pools are public record, but exact inventories of spent fuel are tracked in a government database kept confidential for security reasons.

The US has 104 operating nuclear reactors, situated on 65 sites in 31 states. There are another 15 permanently shut reactors that also house spent fuel.

Four states have spent fuel even though they don't have operating commercial plants. Reactors in Colorado, Oregon and Maine are permanently shut; spent fuel from all three is stored in dry casks. Idaho never had a commercial reactor, but waste from the 1979 Three Mile Island accident in Pennsylvania is being stored at a federal facility there.

Illinois has 9,301 tons of spent nuclear fuel at its power plants, the most of any state in the country, according to industry figures. It is followed by Pennsylvania with 6,446 tons; 4,290 in South Carolina and roughly 3,780 tons each for New York and North Carolina.

Spent nuclear fuel is about 95 percent uranium. About 1 percent are other heavy elements such as curium, americium and plutonium-239, best known as fuel for nuclear weapons. Each has an extremely long half-life — some take hundreds of thousands of years to lose all of their radioactive potency. The rest, about 4 percent, is a cocktail of byproducts of fission that break down over much shorter time periods, such as cesium-137 and strontium-90, which break down completely in about 300 years.

How dangerous these elements are depends on how easily can find their way into the body. Plutonium and uranium are heavy, and don't spread through the air well, but there is a concern that plutonium could leach into water supplies over thousands of years.

Cesium-137 is easily transported by air. It is cesium-137 that can still be detected in a New Jersey-sized patch of land around the Chernobyl reactor that exploded in the Ukraine in 1986.

Typically, waste must sit in pools at least five years before being moved to a cask or permanent storage, but much of the material in the pools of US plants has been stored there far longer than that.

Safety advocates have long urged the NRC to force utility operators to reduce the amount of spent fuel in their pools. The more tightly packed they are, the more quickly they can overheat and spew radiation into the environment in case of an accident, a natural disaster or a terrorist attack.

Industry leaders say new technology has made fuel pools safer, and regulators have taken some steps since the 9/11 terror attacks to reduce fuel pool risks. Kevin Crowley, who directs the nuclear and radiation studies board at the National Academy of Sciences, says lessons will be learned from the crisis in Japan. And NRC Chairman Gregory Jaczko says his agency will review how spent fuel is stored in the US

A 2004 report by the academy suggested that fresh spent fuel, which is radioactively hotter, be spread among older, cooler assemblies in the spent fuel pool. "You're buying yourself time, basically," says Crowley. "The cooler ones can act as a thermal buffer."

First Energy, which runs two nuclear power stations in Ohio and one in Pennsylvania, was able to reconfigure the spent fuel rods in its pools to make more room. Still, the company is now running out of space, says spokesman Todd Schneider. Ohio has 1,136 tons of spent fuel in pools and 37 tons in dry casks.

The casks in the US are kept outdoors, generally on concrete pads, but industry officials insist they are safe. Unlike the pools, the casks don't need electricity; they are cooled by air circulation.

One cask model, selling for \$1.5 million, places spent fuel inside a stainless steel canister, which is placed inside an "overpack" — an outside shell composed of a layer of carbon steel, 27 inches of concrete and another layer of carbon steel. When in place, the system stands 20 feet tall and weighs 150,000 pounds, said Joy Russell, a spokeswoman for manufacturer Holtec International of Florida.

Russell said engineers have designed the system to withstand a crash from an F-16 fighter jet and survive the resulting jet fuel fire.

Plant operators in some states have moved aggressively to dry cask storage. Virginia has 1,533 tons of nuclear waste in dry storage and 1,105 tons in spent fuel pools. Maryland has 844 tons in dry storage and 588 tons in spent fuel pools.

Utilities in Texas, though, have not. There are 2,178 tons kept in spent fuel pools at reactor sites there, and zero in dry casks. In New York, 3,345 tons are in spent fuel pools while only 454 tons are in dry storage.

No cask is totally invulnerable, but the academy report found that radioactive releases from casks would be relatively low.

"If you attacked a fuel cask and managed to put a hole in it, anything that came out, the consequences would be very local," Crowley said.

Casks can be licensed for 20 years, with renewals, said Carrie Phillips, a spokeswoman for the Atlanta-based Southern Co., which has a dozen such casks at its two-reactor Joseph M. Farley plant near Columbia, Ala. She said officials have "every expectation" the casks could last "in excess of 100 years by design."

But not the needed tens of thousands of years. For long-term storage, the government had looked to Yucca Mountain. It was designed to hold 77,160 tons — 69,444 tons designated for commercial waste and 7,716 for military waste. That means the current inventory already exceeds Yucca's original planned capacity.

A 1982 law gave the federal government responsibility for the long-term storage of nuclear waste and promised to start accepting waste in 1998. After 20 years of study, Congress passed a law in 2002 to build a nuclear waste repository deep in Yucca Mountain.

The federal government spent \$9 billion developing the project, but the Obama administration has cut funding and recalled the license application to build it. Nevadans have fiercely opposed Yucca Mountain, though a collection of state governments and others are taking legal action to reverse the decision.

Despite his Yucca Mountain decision, President Barack Obama wants to expand nuclear power. He created a commission last year to come up with a long-term nuclear waste plan. Initial findings are expected this summer, with a final plan expected in January.

"They are 13 years late," says Terry Pickens, Director of Nuclear Policy at Xcel Energy, the Minneapolis-based utility that operates three reactors in Minnesota. Xcel is building steel-and-concrete cask containers to hold old waste on site, and suing the government periodically to pay for them. "We would like them to get done with what they said they would get done."

Some countries — such as France, Japan, Russia and the United Kingdom — reprocess their spent fuel into new nuclear fuel to help reduce the amount of waste.

The remaining waste is solidified into a glass. It needs to be stored in a long-term waste repository, but reprocessing reduces the volume of waste by three-quarters.

Because reprocessing isolates plutonium, which can be used to make a nuclear weapon, Presidents Gerald Ford and Jimmy Carter put a stop to it in the US. The ban was later overturned, but the country still does not reprocess.

France produces 1,300 tons of nuclear waste per year, and reprocesses 940 tons. Still, fuel is only reprocessed once and then it, too, needs to be stored. France is expecting that engineers will eventually succeed in building a new type of nuclear reactor called a fast reactor that will use the waste it can't reprocess as fuel.

"They've kicked the can down the road," says Frank von Hippel, a director of the Program on Science and Global Security at Princeton University.

Other countries, such as Germany, store spent fuel in casks. Finland is building a repository it says will store waste safely for 100,000 years.

Even though there is no long-term storage in the US, utility customers and taxpayers have been paying for it — twice.

Customers have paid \$24 billion into a fund Congress established in 1982 to pay for such storage. The charge — a penny for every 10 kilowatt-hours — would typically add up to about \$11 a year for a household that received all its electricity from nuclear plants.

Users pay as taxpayers, too — for dry storage. Utilities that have run out of storage space in pools successfully sued the federal government for breach of contract, because it failed to keep to the 1998 deadline to establish long-term storage. By law, the money for dry casks cannot come from the nuclear waste fund, and must come from the federal budget.

## **US Nuclear Waste Problem Gains New Scrutiny (LAT)**

**Japan's nuclear accident has focused attention on the US practice of packing spent-fuel pools at power plants far beyond their capacity, which some scientists call a serious compromise in safety.**

By Ralph Vartabedian

Los Angeles Times, March 23, 2011

When the first US nuclear power plants went on line more than half a century ago, utilities built small cooling pools next to the reactors to store their radioactive waste, like the ones at Japan's Fukushima plant that overheated and probably leaked radiation into the environment.

The utilities erroneously thought the pools would be for temporary storage only: The federal government had promised it would find a safe place to bury the used-up fuel rods, which remain radioactive for thousands of years.

It has yet to make good on that commitment.

Technical miscalculations, multibillion-dollar lawsuits and political stalemates over nuclear waste have kept the decaying radioactive material stationary for decades, accumulating across the country ever since the Eisenhower administration.

Now the nuclear disaster in Japan, in which at least one spent fuel pool seems to be damaged and leaking and may have caught fire, has thrown US decisions about its own waste into sharp focus, exposing what many scientists call a serious compromise in safety.

The risks taken at the Fukushima Daiichi plant were actually less than those in the US, nuclear scientists say, because utilities here have been forced to pack more fuel rods into pools than they were designed to hold, increasing the density and therefore the chance that they could catch fire if they were to lose the water that cools them.

"The pools in Fukushima were not filled to capacity, and the accident could have been a lot worse if they were filled as densely as ours are," said Edwin Lyman, a physicist with the Union of Concerned Scientists.

The Nuclear Regulatory Commission, which oversees commercial reactors in the US, this week launched a 90-day review of reactor safety and plans a more comprehensive long-term examination of its regulations. The pools, considered by outside experts the most important nuclear energy safety issue, almost certainly will be part of that.

The decision to massively overfill the pools has been pushed by the growing inventory of nuclear waste and a lack of a place to send it.

The US now has about 65,000 tons of the material spread from the East Coast to the West Coast and from the northern woods to Mexican-border states. With growing anxiety, experts have debated the waste's short-term vulnerability to accident or terrorist attack and its long-term potential to leak into the environment through political neglect.

"US operators are going to have to go back and rethink their decisions because of what happened in Japan," said Kevin Crowley, director of the board on radioactive waste management at the National Research Council, which advises the federal government.

Crowley led a 2005 study that reported that overloading the US pools put them at risk if they were to lose cooling. The study considered a terrorist attack that could puncture a hole in the pools, as well as human errors or natural events.

Without cooling, the spent fuel can get so hot that zirconium tubing that holds uranium pellets begins to oxidize and potentially melt radioactive isotopes, sending them into the atmosphere.

The report recommended that the Nuclear Regulatory Commission force utilities to partially unload their pools and move their oldest waste into dry casks, which are widely considered much safer.

Utilities at plants all over the country have already loaded hundreds of dry casks with nuclear waste. But they could be loading much more and reducing the amount stored in pools, the study authors said.

And though utilities did rearrange fuel rods to checkerboard newer and older fuel, nuclear experts said the commission did not require plant operators to reduce the density of the fuel.

The industry maintains that there is nothing to worry about.

"We believe the pools are safe," said Rod McCullum, director of used-fuel programs at the Nuclear Energy Institute, the industry's primary trade group. "It is not necessary to move the fuel. You don't gain a considerable amount of safety by moving to dry casks."

McCullum said that the US pools have multiple layers of safety, including redundant cooling systems and leakage monitoring, though he declined to say that US pools are safer than those at Fukushima.

He said the industry would review its procedures and plans to ensure that they are adequate. And he said he believed the Japanese were handling their accident well.

"The radiation levels, while not acceptable, are manageable," he said.

The Nuclear Regulatory Commission has essentially accepted the industry's rationale on the safety of dense-packing fuel rods. Over the last two decades, the agency has repeatedly approved license applications by utilities to pack more rods into the pools.

Nuclear safety experts say that plants have packed up to five times more spent fuel rods than the pools were designed to store, though Nuclear Energy Institute officials say the pools contain no more than twice their original capacity.

The only advantage to keeping the pools packed so tightly is the cost of the dry casks, which would run about \$5 billion to \$10 billion nationwide, said Frank N. von Hippel, a Princeton University physicist who first disclosed the problem in a paper he co-wrote in 2003. He said he considers fixing the fuel pool problem one of the most important steps toward making US nuclear plants safer.

"It is such a huge risk that it is worth the cost," he said. "We may not be as lucky as the Japanese were to have the wind blowing the radioactive emissions out to sea."

The reason so much waste has built up is the failure of the Energy Department to hold to its decades-old pledge to take ownership of it, triggering multibillion-dollar law suits by utilities against the government.

Under federal law, the waste was supposed to go to a repository at Yucca Mountain, about 100 miles north of Las Vegas. President George W. Bush approved the plan in 2002. But President Obama has taken steps to kill the plan, saying he wants to find a different site.

Energy Secretary Steven Chu warned last week that it could be decades before any permanent solution for the waste is developed, so the heavily packed fuel pools will be around for a long time.

"The utilities say that even if an accident happens here, they can deal with it," said Lyman of the Union of Concerned Scientists. But, he said, the Fukushima accident shows that some events will be difficult to anticipate and plan for.

"The Japanese have run out of pages of their operating manual, and they are just making things up," he said.

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## **Special Report: Fuel Storage, Safety Issues Vexed Japan Plant (NYT/REU)**

Reuters, March 22, 2011

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

## **Mass. Officials Press NRC On Nuclear Waste, Storage Issues (WALPOLE)**

By Beverly Citizen

Walpole (MA) Times, March 23, 2011

As engineers work to contain a potential devastating nuclear meltdown in Japan, Attorney General Martha Coakley and Senate President Therese Murray are urging US regulators to refocus their attention on two plants closer to home.

Coakley and Murray sent a letter to the US Department of Energy and the Nuclear Regulatory Commission on Monday requesting that the DOE and NRC reexamine the safety of storing spent fuel rods in wet pools at the Pilgrim and Vermont Yankee power plants.

The letter indicates the NRC has repeatedly rejected the contention by Attorney General's Office that "wet fuel on-site dense storage" creates an environmental risk, but has failed to disclose the full studies to the state on which their decisions have been based.

Coakley and Murray are asking the NRC to consider mandating additional "dry cask storage" at the two plants, as well as expediting the process for developing a national nuclear waste storage solution that has languished for decades despite billions in funding being collected for the purpose of developing safe disposal.

"Despite our continuous advocacy for the NRC to consider alternative storage at these plants, the NRC has refused to do so – saying that the risk of breach and fire is 'insignificant.' The events in Japan show that a breach can occur, and we are asking the NRC to revisit that assessment," the two Massachusetts Democrats wrote.

US Energy Secretary Steven Chu has set up a Blue Ribbon Commission to study safer alternatives for the disposal of nuclear waste, but Coakley and Murray said they are "deeply concerned" that more than a decade has passed without the federal government meeting its obligation to begin the disposal of nuclear waste pursuant to the Nuclear Waste Policy Act of 1982.

A national nuclear repository planned for Yucca Mountain in Nevada never materialized over local and Congressional opposition, leaving power plants around the country continuing the practice of storing fuel rods in pools of water on-site. Some facilities store the partially cooled rods in dry, cement-reinforced bunkers.

Under the 1982 law, the federal government began collecting a fee from nuclear power generators – one-tenth of a cent per kilowatt hour of electricity generated – for the Spent Nuclear Fuel Fund in order to develop a safe central repository for spent fuel rods and highly radioactive waste by 1998. The fund, to which Massachusetts customers have contributed for almost 30 years, holds \$24 billion today, according to Murray and Coakley.

"We expect the federal government to comply with the NWPA and remove this material from our generation facilities and decommissioned sites in a timely matter," Coakley and Murray wrote.

The NRC on Monday officially renewed the 20-year license of the Vermont Yankee plant near the Massachusetts border, while Plymouth's Pilgrim plant is currently seeking a similar 20-year license renewal.

Since the earthquake in Japan, President Barack Obama has ordered the NRC to conduct a safety review of all nuclear plants in the United States.

"Nuclear power can and should play an important part of meeting our future energy needs. However, the federal government should ensure that these plants are safe and that their decisions are transparent. We are urging you to re-evaluate these issues in light of the events in Japan," Coakley and Murray wrote.

## **Alexander Says Disaster In Japan Will Sharpen Focus On Nuclear Safety (KINGPRT)**

Kingsport (TN) Times-News, March 23, 2011

US Sen. Lamar Alexander downplayed on Monday any impact that Japan's nuclear crisis might have on the future of nuclear power in the United States.

The Tennessee Republican said that at a minimum, what happened in Japan has caused nuclear power advocates to stop and take a look at best safety practices.

"But we need to keep this in perspective," Alexander said after touring construction of the Tennessee Valley Authority's \$800 million natural gas-powered John Sevier plant. "Nuclear power provides 70 percent of our country's clean electricity. It's low cost and reliable. There's never been a death in connection with our reactors. ... At our only big accident at Three Mile Island 30 years ago, not a single person was hurt. When you compare that safety record with coal and oil spills and gas plant explosions, it's very impressive. ... Every form of energy production has some danger to it. And certainly we ought to take lessons

from Japan, but TVA's nuclear reactors (TVA operates six nuclear units at three locations) and all those in the United States are among the safest operating energy producers in our country."

Alexander liked what he saw at the John Sevier facility, which is about 40 percent complete moving toward a summer 2012 completion date.

After the gas turbine facility goes online, two of four coal-fired units at the nearby John Sevier Fossil Plant will be idled, according to TVA.

TVA says the gas facility puts out 40 percent less emissions than a coal-fired plant.

## **Senator Graham Tours Oconee Nuclear (WYFF)**

WYFF-TV Greenville (SC), March 23, 2011

Despite the tragic earthquake in Japan that led to a tsunami, which then knocked out back up power at a nuclear plant's cooling system, US Sen. Lindsey Graham is still in support of expanding nuclear power in the United States.

Graham shared his thoughts after taking a tour of the Duke Energy Nuclear Plant.

"This nuclear plant I live five miles away. I've lived in this area all of my life. A lot of the people I've grown up with work here. I have faith in the American nuclear power industry. We're preparing to build two new reactors in South Carolina and one in Georgia. I think it is imperative we move forward," said Graham.

Duke Energy officials took Graham, WYFF News 4 and other members of the media inside the control room of reactors one and two.

There are three reactors on site.

Graham wants the public to know he considers nuclear plants a safe and efficient form of creating energy.

"This plant has design characteristics that would prevent what happened in Japan from occurring here. We do not sit on an earthquake fault like they have in Japan. It is impossible to have an earthquake of that magnitude in this area of America," said Graham.

The Oconee County nuclear plant started generating power in 1973.

## **Graham Uses Tour To Push Nuke Power (TSSC)**

By Sammy Fretwell

The State (SC), March 23, 2011

SENECA — US Sen. Lindsey Graham was home Tuesday, talking about one of his favorite subjects: nuclear energy and why it's the best way to power South Carolina and America.

Aware that events in Japan have increased concern about nuclear safety, Graham took the media on a tour of Duke Energy's Oconee atomic power station to show why he thinks nuclear energy needs to be expanded.

Graham said the visit reinforces his belief that a nuclear disaster like that in Japan could not happen at Duke's three reactors. Graham said the US will learn some lessons from Japan but should not slow the push to develop new reactors.

Nestled in the mountains five hours from the ocean, the Duke power plant couldn't be affected by a tsunami, he noted. The reactors also are of a different design that ensures they could continue to operate safely in the event of a disaster, he said. He conceded that a broken dam at Lake Jocassee could affect the plant, but said Duke Energy is working on a plan to address such a disaster.

"This nuclear plant, I live five miles away" from, said Graham, R-S.C. "I've lived in this area all of my life. A lot of the people I have grown up with and went to high school with work here. I have faith in the American nuclear power industry."

Graham said the plant "cannot explode like a nuclear bomb."

Oconee is one of just four sites in the country that received the lowest marks on one federal scale for safety performance, according to a March 8 news release from the NRC. The Oconee plant had problems last year with clogs in a line and what the NRC said was an unsatisfactory response by Duke Energy.

Graham said, however, that the NRC's findings show that the system of regulating atomic power plants works. Duke and NRC officials at Tuesday's media tour said the problems have been addressed.

"If you showed me a reactor site where there was never a safety concern, I'd be suspicious," Graham said. "The fact that we're identifying safety concerns independent from the company itself, and the company is getting on top of it, is reassuring."

The senator faced criticism Tuesday from anti-nuclear activist Tom Clements, who disputed that all of the problems were resolved. Clements also said the press event was little more than an attempt to advance an industry on which Graham relies for campaign funds.

Clements gave reporters data showing that Graham has received in the past two years about \$40,000 in campaign contributions from those sympathetic to the nuclear industry, such as major power companies. Clements, who is with Friends of the Earth, raised those questions during a press briefing after the tour.

"The reason people in the nuclear power industry support me is because I believe in what they do," Graham told Clements. "I don't get any money from your organization because I disagree with you."

Graham and a horde of reporters and photographers started the tour outside, viewing Oconee's three reactor containment buildings – the tall visible buildings with the round tops many people recognize. Later, Duke Energy officials took the media through the plant's turbine building, where steam drives the power that runs into major transmission lines outside the facility. A network of pipes, platforms and huge tanks ran the length of the building, about the size of a football field.

Graham also visited the control room, or nerve center, for two of the three reactors. The control room contains walls of blinking lights that keep track of the nuclear reaction process. Duke executives answered the senator's questions as members of the media looked on. Graham learned that the reactors could be shut down with the push of one button, which he said was enlightening. The tour did not take the media to the company's spent fuel pools, where deadly radioactive waste is held in huge vats of water to keep them from overheating – one of the major concerns about safety at a nuclear power plant.

The first of Duke's triple reactors went on line in 1973 – the same year Graham graduated from high school. The three supply much of the power Duke provides to customers in the Carolinas.

The pressurized water reactors are just a few miles north of Seneca, located in the middle of upscale communities along the shores of Lake Keowee, at the foot of the Appalachians. The Oconee nuclear station is one of four sites in South Carolina that supply atomic power. Another site near Hartsville, like Oconee, has faced more intense NRC scrutiny recently because of questions about how the plant was operated.

### **Sen. Graham: 'I Believe In Nuclear Power' (ADERSN)**

Anderson Independent-Mail, March 22, 2011

SALEM — US Sen. Lindsey Graham stood in the welcome center of Duke Energy's Oconee Nuclear Station and said he had learned something new about his hometown nuclear plant.

"I didn't know how easy it is to shut down," Graham said. "There's one button they can press and it drops the fuel rods. With one button, they can shut down the reactor within a second."

Graham was visiting the three-unit nuclear station Tuesday along with about 20 guests from the media and top Duke officials. For the first time since 2007, Duke Energy allowed outside cameras to shoot the station's football-field-sized turbine/generator room and a control room for two of the reactors.

Graham repeated his call for the American public to support expanded nuclear power even as scientists study the causes and lessons that can be learned from the partial meltdown of a reactor in Japan after a devastating earthquake and tsunami there on March 11.

At stake, Graham said, is a clean energy source for future generations of Americans. Wind and solar power, he said, can't replace the coal-fired plants that dominate the energy production landscape today, but nuclear can.

Graham said he fears that the nation's nuclear power renaissance could be threatened by calls for a moratorium on new plants.

The nation's first two new nuclear plant projects since 1979 are the Southern Co.'s Vogtle Plant on the Savannah River outside Waynesboro, Ga., and SCANA's new plant outside Jenkinsville, S.C. Both are within two hours' drive of Anderson.

Duke's chief nuclear officer, Dhiaa Jamil, heads operations at all seven of the energy company's reactors at three sites in North Carolina and South Carolina. He said about half of all energy going to its Carolinas customers is generated at nuclear plants. This is ahead of the national rate of nuclear power, which is 20 percent. Eighty percent of power in France is generated at nuclear plants.

Graham also underlined the station's role in the local economy, as it has a \$90 million payroll and has paid \$27 million in property taxes to Oconee County. About 1,500 people work regularly at the plant, said Richard Freudenberger, the plant's regulatory support manager. Another 2,000 or so are on site now working with Duke on upgrades and refueling the station's first unit.

Graham said he saw nothing in the tour to change his mind about the safety of nuclear power; his primary purpose in organizing the event was to familiarize the public with a plant's operations.

"No one working here has ever been hospitalized because of radiation exposure," Graham said. "Every worker when they leave is tested for radiation."

He said federal regulations, including Nuclear Regulatory Commission inspectors stationed at every nuclear plant in the nation year-round, are rigorous and reflect lessons learned from the meltdowns at Three Mile Island and Chernobyl. Duke Energy also increased security measures dramatically at Oconee Nuclear Station after the terrorist attacks of 9/11, with several secure checkpoints and armed guards stationed throughout the facility.

"If you short-change safety, you always pay for it later," Graham said. "So the regulatory and permitting process is very strenuous."

Preston Gillespie, vice president for Duke Energy and head of operations at Oconee Nuclear Station, said Duke has been sending engineers to the Institute of Nuclear Power Operations in Atlanta to work through data coming from the disaster in Japan and share changes in operations that should come of it.

The nuclear industry set up the institute in 1979 a few months after the meltdown at Three Mile Island to share safety standards and operating procedures. Oconee Nuclear Station started operating in 1973.

"The industry itself has pulled together a team in Atlanta to collect and disseminate data about the problem in Japan," Gillespie said.

Graham repeated his praise for the Obama administration's \$36 billion in loan guarantees for energy companies wanting to invest in new reactors; and he repeated his call for a central repository for spent fuel rods at Yucca Mountain in Nevada.

Spent fuel rods containing beads of uranium are removed about every 18 months from the reactors at Oconee Nuclear Station and stored in cooling pools. After nine years these radioactive rods are moved to a dry-cask storage facility on site.

Gillespie said the company cannot reveal how many spent fuel rods are in storage at Oconee Nuclear Station, other than saying there remains a "prudent operating reserve" of space left.

Environmentalist Tom Clements of Columbia asked Graham during his press briefing about campaign contributions the senator has received from political-action committees connected to the nuclear industry — including \$17,500 from Duke since 2001. Clements, a member of Friends of the Earth, has worked to block construction of four new reactors in South Carolina, including a new Duke site in Cherokee County.

Clements said modern reactor designs, including the AP1000 model from Westinghouse that Duke intends to use at a new site in Cherokee County, are not robust enough to contain a radiation leak.

The nearly 40-year-old domed towers at Oconee Nuclear Station are among the strongest in the industry, with four-foot-thick cement containment walls reinforced by steel cables.

"I'm here because I believe in nuclear power," Graham said. "I don't get money from your organization because I don't support your views."

## **Inside Oconee Nuclear: How Safe Is Upstate's Nuclear Power Plant? (WSPA)**

By Robin Kanady

WSPA-TV Asheville (NC), March 22, 2011

News cameras have not been inside Oconee Nuclear Plant, since right after 9/11. But Tuesday we got a rare look at plant operations.

News Channel 7 was there with Senator Lindsey Graham as he went inside the nuclear plant to review safety measures after Japan's nuclear disaster caused by an earthquake.

Inside the turbine room at Oconee Nuclear, which is right beside the plant's nuclear reactors, it can heat up to over 100 degrees. Having the right cooling systems can help prevent a nuclear disaster like the one following Japan's earthquake and tsunami. Senator Graham says, "This plant has a lot of redundancies when it comes to cooling the reactor."

US Senator Lindsey Graham went with TV cameras inside Oconee Nuclear Tuesday for a rare look at safety measures in place at the plant. Graham says there are some major differences between the Oconee plant and the ones in Japan. He says, "This plant (Oconee) has design characteristics that would prevent what happened in Japan from occurring here. We do not sit on an earthquake fault like they have in Japan."

Graham says the biggest concern at Oconee is a radiation leak. Plant officials say releasing small amounts of gas are routine and permitted because of pressure build-up in the reactors. But a Duke Energy Spokeswoman says there have not been any radiation leaks in the facility's nearly 40 year history.

In light of the earthquake in Japan, Oconee Nuclear, along with plants around the country, is reviewing equipment and procedures.

Graham says it's too early to tell the exact lessons that can be learned from Japan, but he points to September 11 as an example of changes being made because of a man-made disaster. Graham says, "We have reinforced the containment vessel."

One of things we learned after 9-11 is that someone could drive a plane into a nuclear plant. A terrorist attack is something we train for and prepare for."

Graham also says the country is on the verge of a nuclear power renaissance. He says coal-fired plants produce major pollutants and that nuclear power is a much cleaner source.

## **Nuclear Industry Works To Sustain Rebirth (GRNVN)**

By Anna Simon

Greenville News, March 23, 2011

The nuclear industry in the United States and its allies have launched a campaign to reassure the public and keep alive a budding renaissance of new reactor construction as Japan struggles to control a damaged nuclear complex.

On Tuesday, U.S. Sen. Lindsey Graham invited the press on a tour of the three-reactor Oconee Nuclear Station on the shores of Lake Keowee. Graham said he fears an illogical reaction to the events in Japan will snuff out what until this moment has been the quickening rebirth of reactor construction.

"My fear is that companies who decided to embark on a new building program for nuclear power will be deterred," Graham said.

Nuclear power is clean and safe, Graham said. His single concern is spent fuel storage, and Graham said he is calling on the Obama administration to rebate the money that utility ratepayers have been paying to build a long-term repository at Yucca Mountain in Nevada.

"Once you close Yucca Mountain, then you are requiring facilities like this to store spent fuel on site in perpetuity. I think that was a huge mistake," Graham said.

Graham praised President Barack Obama's inclusion of \$36 billion in loan guarantees to build the nation's next generation of nuclear plants.

"The loan guarantees will reassure the private sector that if you invest in building a nuclear power plant, the government will stand behind you, which will give some confidence to the private sector to invest in nuclear power," Graham said.

The planned U.S. plants are "totally different" from those in Japan and have gravity-fed cooling systems, Graham said.

As Graham expressed hope that a domestic nuclear renaissance will move forward, Tom Clements, a nuclear campaign coordinator in the southeastern region for the environmental group Friends of Earth, said nuclear industry contributions account for a third of political action committee contributions to Graham's last campaign.

Graham has become a paid spokesman for the nuclear industry, said Clements, who ran on the Green Party ticket last year in an unsuccessful effort to defeat Republican U.S. Sen. Jim DeMint.

Graham said the contributions came because of his support for the nuclear industry, not the other way around, and he is proud of contributions donated by employees at plants like Oconee.

"I believe in nuclear power," Graham said.

The press tour was done at Graham's request, said Sandra Magee, a Duke Energy spokeswoman at Oconee.

Duke and the industry "want to make sure that people still understand the value of nuclear power and the contribution it makes," Magee said.

There will be lessons learned from Japan, Graham said.

However, he expressed confidence in safeguards at U.S. nuclear plants, including plans put in place in the 1980s to enable back-up power in the event of blackouts and work following the terrorist attacks of Sept. 11, 2001, to strengthen containment structures.

"America needs as much safe, abundant, affordable power as possible for our economy in the 21st century," Graham said, calling for use of all energy technologies including nuclear, clean coal, natural gas, solar and wind.

Graham said he has changed his mind on the issue of reprocessing, as is done in France, reducing the amount of waste to be stored. Graham said Energy Secretary Steven Chu has convinced him that there is new technology to develop advanced systems rather than spending millions to duplicate the 1970s technology used in France.

"I would like the Savannah River site in South Carolina to be the demonstration site to come up with these new waste disposal systems for nuclear power," Graham said.

"Like everybody else, I want to know why can't this happen here," Graham said as he toured the control room for units 1 and 2 of the plant's three reactors.

Duke hopes to put two next-generation nuclear reactors online at a Cherokee County site in 2021 and 2022. The Charlotte-based utility's chief executive officer, James Rogers, recently told GreenvilleOnline.com. that Duke hopes to have licenses from the U.S. Nuclear Regulatory Commission in 2013 for the \$11 billion plant.

Half of the electricity Duke provides in the Carolinas is produced by nuclear power.

CBS News reported Tuesday that its CBS News Poll taken following the start of the events in Japan found that 50 percent of Americans disapprove of building new nuclear plants, an increase of 16 points since the question was last asked in 2008. The network reported that its survey found 43 percent approve of building more nuclear plants, a drop of 14 points from 2008. The poll of 1,022 adults nationwide has a margin of error of plus or minus 3 percentage points, the network reported.

## **NRG Casts Doubt On Reactor Plans (WSJ)**

By Rebecca Smith

Wall Street Journal, March 23, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

## **South Texas Nuke Plant Expansion Faces Delays (HOUBIZ)**

Houston Business Journal, March 23, 2011

Nuclear Innovation North America LLC is scaling back its expansion plans for the South Texas Project until the US Nuclear Regulatory Commission and other stakeholders can effectively assess the impact of the events in Japan.

Nuclear Innovation North America (or NINA) is the company jointly owned by NRG Energy Inc. and Toshiba Corp. that is developing two nuclear reactors at the South Texas Project near Bay City, about 80 miles from Houston.

Given the tragedy of the earthquake and tsunami that struck Japan on March 11, NINA officials will limit work on the South Texas Project expansion to securing a license and a federal loan guarantee for the nuclear project.

Tokyo Electric Power Co. employees in Japan are still working to stabilize the reactors at the Fukushima Daiichi nuclear plant. The outcome of those efforts may affect the future of nuclear power development throughout the world.

Executives with NRG Energy, Toshiba and CPS Energy are all watching developments in Japan closely.

"Since STP is very differently situated from the stricken nuclear plant in Japan — 10 miles from the Gulf of Mexico, in a non-seismic area with hardened watertight protection around both its backup generation and its spent fuel storage facilities — it is not obvious to us that any modifications are necessary to regulatory requirements applicable to either our existing or planned nuclear facilities," said David Crane, president and CEO of New Jersey-based NRG Energy (NYSE: NRG).

Meanwhile, CPS Energy officials on Monday released a statement that San Antonio's municipally owned utility has decided to suspend discussions indefinitely with NRG Energy with respect to buying additional supplies of nuclear power from the South Texas Project.

CPS Energy is not ruling out future discussions with NRG, however.

CPS Energy owns a 40 percent interest in South Texas Project and a 7.625 percent minority ownership in two units that have yet to be constructed.

## **NRG CEO: Slashing Loan Guarantees Would Cripple Nuclear Industry (WSJ)**

By Naureen S. Malik

Dow Jones Newswires, March 23, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

## **TVA Execs Discuss US Reactor Safeguards As Japan Struggles With Nuclear Crisis After Quake (AP)**

Associated Press, March 23, 2011

HUNTSVILLE, Ala. — Two executives with the Tennessee Valley Authority said Tuesday that their information and analysis indicate the utility's six reactors would have weathered a powerful earthquake like that which prompted Japan's nuclear emergency, a claim that drew skepticism from an environmental activist.

TVA's senior nuclear communications manager Ray Golden and chief nuclear officer Preston Swafford discussed Japan's nuclear emergency with reporters in Huntsville in describing safeguards at TVA's nuclear plants along the Tennessee River in Tennessee and Alabama. Swafford said some of the differences with Japan's plants stem from "redundant" safety and power systems installed at nuclear plants in the United States after the September 2001 terrorist attack.

TVA has invited the media to a Friday tour at its Browns Ferry Nuclear Plant in Athens, Ala., which has boiling water reactors similar to the malfunctioning reactors in Japan. TVA has said the Browns Ferry Plant was designed to withstand a 6.0-magnitude quake based on its distance from the New Madrid fault.

The TVA's Watts Bar Nuclear Plant at Spring City, Tenn., and its Sequoyah plant at Soddy-Daisy, Tenn., are designed to withstand a 5.8-magnitude quake based on an 1897 tremor at Giles County, Va., officials said.

Swafford said he and others at TVA “expect to learn a lot from the Japan event” in which the magnitude 9.0 quake touched off a devastating tsunami along a wide swath of Japanese coastline.

Swafford said no TVA nuclear plant is vulnerable to a flooding emergency from a break of any dam or multiple dams.

Stephen Smith, director of the Southern Alliance for Clean Energy, said of TVA’s claim: “Without some documentation of the assumptions that were made to come to that conclusion, talk is cheap.”

“They should put that documentation up on their web site and let it be examined,” Smith said in a telephone interview. “Maybe it’s true.”

Smith said the nuclear industry is “in full-scale damage control mode right now.”

Swafford said TVA has invited the media to a Friday tour at the Browns Ferry Plant, where one of the reactors is currently idle.

Days after the disaster in Japan, TVA called off a long-scheduled media tour at its Watts Bar plant that is the site of a second unit that is the nation’s only reactor under construction.

The TVA board at its April meeting in Chattanooga, Tenn., is expected to discuss committing funds to future nuclear projects.

Golden said changing the pace of the utility’s nuclear plans would be “up to the board.”

TVA, the country’s largest public utility, supplies power to about 9 million people in Tennessee, Alabama, Mississippi, Kentucky, Georgia, North Carolina and Virginia.

## **TVA Officials Confident In Its Nuclear Plants (SDS)**

Scottsboro (AL) Daily Sentinel, March 23, 2011

TVA officials confident in its nuclear plants

Reactors Safe and Reliable TVA officials confident in its nuclear plants

While admitting that its nuclear reactors at the Browns Ferry Nuclear Plant near Athens are similar to the ones at Japan’s Fukushima Dai-ichi facility TVA’s chief nuclear officer Preston Swafford said Tuesday that the utility’s units would have survived the effects of an earthquake and tsunami that crippled the Tokyo Electric Power Co. reactors.

“The Japanese reactors handled an earthquake 10 times bigger than they were designed for,” Swafford said during a meeting with reporters in Huntsville. “The plant was doing a normal shutdown until the tsunami struck. Then the emergency diesel generators and switch gear failed.”

TVA senior manager of nuclear communication Ray Golden accompanied Swafford.

The utility is continuing construction on a second reactor at its Watts Bar Plant near Spring City, Tenn. Design and engineering work continues on one unit at the Bellefonte Nuclear Power Plant near Scottsboro though no decision has yet been made to complete the facility. Golden said that the utility should be ready to load fuel at its Watts Bar site in approximately 300 days.

TVA’s Board of Directors may discuss continued work at Bellefonte at its April board meeting in Chattanooga. Between 400-500 employees and contractors work at the site each day preparing engineering plans and developing upgrades needed during the construction process. The plant was idled before construction was completed.

“It will be up to our board to make a determination on Bellefonte,” Golden said. “If they don’t take any action there will be an August meeting where they may consider it. Right now we’re thinking this unit, if we go forward with it, will be (ready) in the 2018 range.”

Opponents of nuclear power have come out against not only the construction of any new nuclear plants but the continued operation of the energy source in the US in the wake of the accident at Fukushima Dai-ichi.

“In the light of the unfolding tragedy in Japan, the United States must revisit all nuclear issues...” Earthquakes are not unusual in Japan. If an advanced, industrial nation with all known safeguards in place can be blindsided by such an event the United States should question all its assumptions about nuclear technology,” a spokesperson for the Blue Ridge Environmental Defense organization said on March 19.

Swafford said there had been misinformation on the Japanese accident in part because of communication barriers and because of the difference in culture. He said there was no need for scaring people unnecessarily. More than 8,000 people died in the earthquake and tsunami and thousands more are listed as missing.

“It’s so sad at the carnage that has occurred in Japan and all the deaths,” Swafford said. “But the news has become more focused on the nuclear incident than on those affected by the earthquake and tsunami. In the end there probably will not be one death tied to the nuclear situation.”

"There's no reason to add more nuclear power with its legacy for our children of radioactive waste and health concerns when there are safer and cheaper ways to produce electricity," Gretel Johnson, founder of Mothers Against Tennessee River Radiation said.

Swafford said all US nuclear plants have "redundant" safety and power systems due to a number of factors including the September 2011 terrorist attack. No TVA plant is susceptible to damage from a flooding emergency from a dam break or "worst case" from multiple breaks.

"Nuclear energy is a complex subject. It is very difficult for most people to equate," Swafford said. "But, it's a well-understood technology that is proximity safe."

Media members have been invited to tour TVA's Browns Ferry Nuclear Plant on Friday. One of the three units at the plant is in the refueling stage.

Editor's Note: For more information on TVA's response to the nuclear accident in Japan and its plans for the future of nuclear power check out Thursday's print and online edition of The Daily Sentinel.

## **TVA Addresses Brown's Ferry Concerns (WAAY)**

By Reid

WAAY-TV, March 23, 2011

The TVA is addressing concerns about the Browns Ferry Nuclear plant following the disaster in Japan. Because of the catastrophe, officials are reviewing safety procedures. Chief operating officer Bill Mccollum is reminding residents how safe they're nuclear plants already are. "We also challenged our operations to see if there are lessons learned that we can apply from Japan" Mccollum said

The Tennessee Valley Authority has three nuclear plants. Two in Tennessee and one right here in Limestone county. The Browns Ferry plant is located near Athens in Tanner. It was built in the 1960's and went on-line in 1974. It produces enough electricity to provide power for roughly 2 million homes. Bill Mccollum says local residents have nothing to fear. "Our plants are designed, built and operated safely and have many redundant features in case we have any sort of emergencies".

Some residents living near the Browns Ferry plant say they are used to living so close to the Nuclear plant and they feel safe. Matt Jackson lives near Athens. "It was a terrible thing that happened in Japan, but I think its something we can learn from and I certainly feel safe having a nuclear plant around here" Jackson said. Decatur resident Jim Pyron shared similar feelings. "Its kind of always in the back of my mind that I do live this close and something could happen. But you try not to think about it".

The Browns Ferry facility is a boiling water reactor. It has a safety feature called containment venting. It works by safely removing hydrogen from the containment structures. TVA employs one thousand people to maintain and operate Browns Ferry. The plant has an annual payroll of 107 million dollars.

## **NRC Looks At Lubrication Concern At Nuclear Plant (AP)**

Associated Press, March 23, 2011

FULTON, Mo. (AP) – A Nuclear Regulatory Commission inspection team is at Ameren Corp.'s Callaway nuclear plant near Fulton after concerns were raised about lubrication of an auxiliary feedwater pump.

An Ameren spokesman says the inspection is unrelated to heightened concerns at nuclear plants following the damage to the plant in Japan.

The NRC says an oil sample taken Feb. 8 showed the auxiliary pump might have been inadequately lubricated. The pump is used to supply water to steam generators during some accident conditions.

The oil sample indicated that the oil level may have been too low to properly lubricate the pump bearing. If that happens, the pump may not be able to run long enough during an accident scenario.

The NRC says the inspection was begun because a similar finding occurred at Callaway in 2009.

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## **NRC Conducts Special Probe In Callaway (AP)**

By Don Norfleet

Fulton Sun, March 23, 2011

A United States Nuclear Regulatory Commission (NRC) inspection team conducted a special inspection Monday of the Callaway Nuclear Power Plant after concerns were raised about lubrication of an auxiliary feedwater pump.

Mike Cleary, an Ameren Missouri spokesman, said the inspection is the lowest of three NRC inspection levels that go beyond the normal, ongoing inspections conducted by the resident NRC inspectors based at the plant.

"It is not related to the current nuclear plant problems in Japan," Cleary said.

Cleary said the current inspection is in response to a Feb. 8 routine oil sample taken during normal maintenance on a pump.

The oil showed discoloration, Cleary said, and a subsequent inspection of the pump bearing found some wear.

"Callaway Plant personnel identified the issue during routine maintenance and reported it to the NRC," Cleary said.

The oil and bearings were replaced. "An engineering evaluation showed the pump would have performed its intended function if needed," Cleary said.

The NRC said the pump is used to supply water to steam generators during some accident conditions.

The oil sample indicated the oil level may have been too low to properly lubricate the pump bearing. The NRC was concerned that if that occurred, the pump may not have operated as efficiently during an accident.

The NRC reported the inspection was ordered because a similar finding occurred at the Callaway Nuclear Power Plant in 2009.

## **Durbin, Kirk To Host Forum On Ill. Nuclear Safety (AP)**

By Tammy Webber

Associated Press, March 23, 2011

CHICAGO

Illinois Sens. Dick Durbin and Mark Kirk have asked federal and state nuclear experts to attend a forum to discuss the safety of the state's nuclear reactors and whether Illinois is prepared for an emergency, citing Japan's still-unfolding crisis.

Officials from the Nuclear Regulatory Commission, the Illinois Emergency Management Agency, Exelon Corp. and environmental groups say they plan to attend the meeting Friday at the Dirksen Federal Building in Chicago.

"I have no reason to believe we have a particular concern (in Illinois), but what happened in Japan, I think, is fair warning that we ought to periodically review this," Durbin said Tuesday.

Some watchdog and environmental groups, however, have said they're concerned that four of the state's 11 reactors – at the Dresden and Quad City generating plants – are of the same design and about the same age as those involved in Japan's nuclear crisis.

Dave Kraft, director of the Nuclear Energy Information Service, an Illinois watchdog group, said the Mark I boiling-water reactors are flawed because spent fuel rods are stored above the reactor containment chamber instead of at ground level, and the containment system around the reactor is too small and could allow pressure to build quickly in the event of an emergency.

The head of the Illinois Environmental Law and Policy Center, Howard Learner, said he is concerned about plans by Exelon to "uprate" or rev up the amount of electricity generated by the Mark I reactors, all of which already are more than 40 years old.

"It's time for Exelon and the Nuclear Regulatory Commission to hit the pause button and go back and carefully reassess the risks and rewards," squeezing more power from the plants, Learner said. "I'm not throwing stones at the nuclear plants, but it would be prudent and wise at this point."

President Barack Obama has called on the NRC to review the nation's nuclear plant safety and Illinois Gov. Pat Quinn said the state also will conduct a "full-scale" review. Quinn also wants to increase the annual fees Exelon pays to Illinois – currently pays about \$20 million annually – to ensure the state Emergency Management Agency has what it needs to oversee safety at the plants.

Illinois has six nuclear plants, with a total of 11 reactors, more than any other state in the US. In addition to NRC inspectors, the state has a on-site inspect for each plant.

Although the chance of an earthquake as large as the one that rocked Japan is remote and a tsunami all but impossible in Illinois, Kraft said he is not sure the state's reactors could withstand something like an airplane crash.

Exelon spokesman Marshall Murphy said all the company's reactors are safe and built to withstand natural and potential manmade disasters, and that the uprating also is safe.

But that doesn't mean the company won't learn from the events that are unfolding in Japan, he said.

"There will be an opportunity to learn more from Japan ... and we will apply (those lessons) if we need to," Murphy said.

## **Nuclear Illinois Helped Shape Obama View On Energy In Dealings With Exelon (BLOOM)**

By John McCormick

Bloomberg News, March 23, 2011

If Illinois were a country, it would have the world's 12th-largest number of nuclear power reactors, behind China and ahead of Sweden. No other US state generates more energy through fission.

Exelon Corp. (EXC), which operates all 11 of the state's reactors, is no stranger to President Barack Obama. The Chicago-based company has served as a source of campaign contributions and also created environmental and political challenges to navigate.

Even as his administration reviews all US reactors following the March 11 earthquake and tsunami that triggered radiation leaks from a crippled Japanese plant, Obama last week called nuclear power an "important part" of his energy agenda. That mirrors the balancing act he displayed in his adopted home state, which generates more than a tenth of US nuclear power.

"It's a large part of our power generation," said Senator Mark Kirk, a Republican who won Obama's old seat in November. "And we have more waste than any other state."

Obama's relationship with Exelon, the nation's largest US nuclear power producer, led his top 2008 Democratic primary opponent, then-Senator Hillary Clinton of New York, to charge that he had "cut some deals" with the industry.

His experience also reflects his handling of political concerns in 2005-2006 from radioactive tritium leaks at Illinois reactors. And it includes battles over disposal of nuclear waste, an issue Kirk is raising following the Japanese disaster.

"We need to get nuclear waste away from Lake Michigan," Kirk, 51, said. "The United States needs a permanent nuclear waste storage solution, and that's overwhelmingly Yucca." The Obama administration announced in February 2009 that it wouldn't move forward on a proposed storage center at Yucca Mountain in Nevada.

Democrat Dick Durbin, the state's senior senator, and Kirk plan a Chicago briefing March 25 to review the safety of Illinois reactors and address waste storage with Exelon representatives.

Obama's 2012 budget calls for an additional \$36 billion in US loan guarantees for new nuclear power plants.

"The administration's energy priorities are based solely on how best to build a 21st century, clean energy economy," White House spokesman Clark Stevens said yesterday in a statement. "That policy is not about picking one energy source over another."

The existing 104 reactors in the US provide about 20 percent of the nation's electricity. Those in Illinois provide about half the state's power.

Obama's Exelon ties came under fire as he campaigned for the Democratic nomination for president in 2008.

"Senator Obama has some questions to answer about his dealings with one of his largest contributors, Exelon, a big nuclear power company," said Clinton, then his party primary opponent and now his secretary of state. "Apparently he cut some deals behind closed doors to protect them from full disclosure."

The Washington Post at the time reported that Clinton stretched the truth, although it also said Obama had "exaggerated his legislative accomplishments" as a nuclear-industry watchdog.

Obama also offered assurances to Nevadans on waste storage during the 2008 campaign.

"I will bring to this issue not just independent judgment and careful deliberation, but a personal appreciation that comes from my own experience of living in the back yard of hazardous nuclear materials," Obama wrote in a May 2007 letter to the editor of the Las Vegas Review-Journal.

Exelon and its employees were the seventh-largest source of campaign money for Obama, 49, during his four-year Senate career, contributing at least \$71,850, according to the Washington-based Center for Responsive Politics.

When he ran for president, the company's employees gave at least \$200,000, and board member John Rogers Jr., chairman of Chicago-based Ariel Investments LLC, was a top Obama fundraiser.

Exelon "actively engages in the political process and supports candidates from both parties who we believe will support sensible energy policies," company spokeswoman Judith Rader said yesterday in a statement.

Obama's legislative involvement with nuclear energy started after Exelon issued a December 2005 news release that said it had detected "higher than normal concentrations" of tritium in an underground pipe inside the boundary of a plant it operated in Braidwood, about 60 miles (97 kilometers) southwest of Chicago.

Tritium, a radioactive form of hydrogen and a byproduct of nuclear power generation that in large doses can increase cancer risk, was found days later in a home's drinking water well near the plant, although levels didn't exceed safety standards.

Two months later, Exelon announced tritium leaks had been found at two more nuclear power plant sites in Illinois. One of those, a plant located in Grundy County, about 60 miles southwest of Chicago, has the Mark 1 design, developed by General Electric Co. (GE) in the 1960s and used at the Fukushima Dai-ichi plant in Japan.

On March 1, 2006, Obama introduced legislation that would have required utilities to notify federal nuclear regulators as well as state and county officials whenever there was "an unplanned release of fission products in excess of allowable limits."

Exelon and other industry interests said they were already doing more reporting voluntarily and the measure wasn't needed. A modified version of it never became law.

Two top former Obama aides, onetime senior adviser David Axelrod and ex-White House Chief of Staff Rahm Emanuel, had business dealings with Exelon earlier in their careers.

Emanuel, who left the administration to successfully run for mayor of Chicago, worked on the \$8.2 billion merger that created Exelon in 2000. Axelrod, currently helping run Obama's re-election bid, had ownership in a consulting business that had Exelon as a client before he joined the White House in 2009.

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## **Critics Cite 'Severe Seismic Risk' At California Nuclear Power Plants (CSM)**

Christian Science Monitor, March 23, 2011

Representatives from both facilities said they could withstand the maximum events predicted for their sites. But wary legislators weren't buying such confidence. Skip to next paragraph

"In light of the disaster in Japan, I think the average person's response is: We should be safer," said state Sen. Christine Kehoe (D) of San Diego. "They weren't expecting a 9.0 earthquake."

Pacific Gas and Electric (PG&E), which runs the Diablo plant, has begun its relicensing process, despite the fact that current NRC licenses for the two reactors don't expire until 2024 and 2025.

That's a bad move, considering the discovery two years ago of a previously unknown fault just a half mile from the plant, says state Sen. Sam Blakeslee (R) of San Luis Obispo, who wants the utility to withdraw its license application until new studies have assessed the potential damage from this new discovery.

"I'm concerned mostly about this culture of disregard of risk," Senator Blakeslee, who has a doctorate in geophysics, told the panel. "It's potentially putting my constituents in a place of great risk."

Lloyd Cluff, PG&E's director of earthquake risk management, defended the facility's approach to as-yet-unknown dangers.

"There's uncertainty in everything," Mr. Cluff said, pointing out that their disaster modeling took unforeseen events into account. "We don't see a concern about the uncertainty," he added.

Senator Kehoe turned her fire on Southern California Edison, who run the San Onofre plant, in addressing what she considers complacency about the maximum events contemplated in the plant design.

While San Onofre is built to withstand a magnitude 7 earthquake, no reassessment had been done in light of a 7.2 quake – just across the Mexico border – in April 2010.

Caroline McAndrews, director of licensing for the San Onofre plant, says, "We do evaluate for the probability of those larger earthquakes," McAndrews said, "and we have confidence."

The NRC cited the San Onofre plant for "serious issues" two years ago, notes USC's Meshkati, "and after people raised questions, they came up with what I call 'reasonable' or 'satisfactory' answers, but – satisfactory isn't good enough. They have to go above and beyond."

After such disasters as Three Mile Island and Chernobyl, the modern nuclear industry is exceptionally safe, with multiple redundancies and backup plans for emergencies, says Gwyneth Cravens, author of "Power to Save the World: The Truth About Nuclear Energy." As the technology continues to improve, she says, the most pressing issue is human error. Wakeup calls, even though framed by such human tragedy as the events unfolding in Japan, are what the industry needs to further training.

"Human engineering is a big issue," she says.

It is too early to assess all the lessons of the Fukushima crisis for the US nuclear industry, says Meshkati, who sat on a committee that oversaw the followup to the BP Gulf Oil disaster. But if he could point to one lesson that seems to run through disaster preparedness of all sorts, he says, it is "too much confidence."

## **California Lawmakers Push For New Seismic Safety Studies Of Nuclear Power Plants (SCPR)**

Southern California Public Radio, March 23, 2011

In the aftermath of Japan's magnitude 9.0 quake, California lawmakers want a better grasp of the risks of a nuclear accident here. They're pressuring the utilities that operate California's nuclear power plants to complete new seismic studies.

Japan is more prepared than any county in the world to cope with massive earthquakes and tsunamis. Since seismologists began recording such events, a dozen massive earthquakes have rocked the island nation.

Geologists figured the fault line near Fukushima was capable of producing a 7.9-magnitude earthquake at most. But at a legislative hearing this week in Sacramento, Keith Knudsen with the US Geological Survey said the quake that hit this month blew a hole in those careful projections.

"The shaking that these people experienced - we've seen some of the videos online - the shaking went on for two to three minutes." Knudsen said.

The Japan quake was 900 times more powerful than Northern California's 1989 Loma Prieta quake. Knudsen showed lawmakers a slide of what made the Japan quake so powerful: a massive rupture in the Earth's crust under the water right off Fukushima's eastern coast.

"This polygon here represents the area of the Earth that ruptured during this earthquake," Knudsen explained. "It wasn't just ruptured at this epicenter but that entire area, roughly an area 300 by roughly 150 miles."

The Fukushima Dai-ichi nuclear power plant complex survived the giant quake. Its reactors shut down automatically and emergency generators powered up to run the cooling system.

But the tsunami flooded the emergency generators and they failed. The Fukushima plant was built to withstand a 22-foot wave but the giant wall of water that engulfed it was as much as 10 feet higher than that.

"What I hear you say is it's not surprising that we underestimate the potentiality of a fault system like we did in Japan," Sen. Sam Blakeslee responded.

Blakeslee said California's nuclear power plant operators need to do more to ensure the safety of facilities. The San Luis Obispo Republican has pushed Pacific Gas & Electric to conduct new seismic risk studies of its Diablo Canyon nuclear power plant. Diablo Canyon and Southern California Edison's San Onofre nuclear plant lie near known fault lines. But three years ago, geologists discovered a new fault within a mile of Diablo Canyon.

"I'm a little concerned that PG&E, which had the primary responsibility for identifying the seismic safety of the facility and the seismic environment in which they were operating, failed to notice a fault of this size, given that earthquakes have been occurring throughout time virtually right under their nose," Blakeslee said.

PG&E insists there is "no uncertainty" about whether Diablo Canyon can withstand a seismic threat. At this week's hearing, Blakeslee asked PG&E seismic expert Lloyd Cuff if the utility still thinks there's "no uncertainty" about seismic risk at Diablo Canyon.

Cuff said there's always uncertainty in earthquakes, but "we don't see a concern about the uncertainty because we've quantified where it is and what would happen if we changed the uncertainty."

"So PG&E still sees no concern about the uncertainty?" Blakeslee asked.

"No," Cuff insisted.

"You see uncertainty but you have no concern about it?" Blakeslee continued.

"No, we do not," Cuff replied.

PG&E has applied to renew Diablo Canyon's licenses despite the California Energy Commission's request that the utility first conduct new studies on seismic risks.

PG&E's Cuff said the company plans to apply in April for a permit to begin new seismic studies.

A spokeswoman for Southern Gas and Electric testified that San Onofre is invulnerable to massive quakes and can withstand a 30-foot tsunami.

## **Central Coast Senator Asks PG&E To Suspend Nuclear License-renewal Request (VENCSTR)**

By Timm Herdt

Ventura County Star, March 23, 2011

A Central Coast state senator has accused the operator of the Diablo Canyon nuclear power plant of operating under "a culture of disregard of risk."

The lawmaker, Sen. Sam Blakeslee, also asked Pacific Gas & Electric Co. to suspend or withdraw its application for license renewal until the company has completed advanced seismic studies requested by state regulators three years ago.

Blakeslee, R-San Luis Obispo, a geophysicist whose district includes the site of the nuclear plant, along the coast of San Luis Obispo County, said Monday that PG&E has consistently downplayed the risks associated with the discovery of an offshore earthquake fault line in 2008. That "culture of disregard," he said, "has become endemic at PG&E. It's a culture that puts my constituents at risk."

Blakeslee represents District 15, which also includes coastal Monterey County, as well as portions of Santa Cruz, Santa Clara and Santa Barbara counties.

His remarks came during a special Senate committee hearing designed to examine lessons California might learn from this month's earthquake and tsunami in Japan and the subsequent crisis at a nuclear power plant whose reactors were crippled by the shutdown of essential cooling systems needed to prevent a meltdown.

Lawmakers were told that seismic studies at the sites of both California nuclear plants - the other is at San Onofre, in San Diego County - are insufficient to assess risks associated with geologic data that has become available since the plants were built.

James Boyd, vice chairman of the California Energy Commission, testified that "recent studies have found that ground motion near a fault could be stronger and more variable than previously thought, which could be important at Diablo Canyon, since the offshore Hosgri Fault is 4.5 kilometers west of the plant."

The commission recommended in November 2008 that both plants should use three-dimensional seismic mapping to update their seismic research, but Boyd noted that has not yet been done.

Daniel Hirsch, a lecturer in nuclear policy at UC Santa Cruz, said recent problems at Diablo Canyon, including the fact that emergency cooling pumps had been disabled for 18 months before the problem was discovered, show that safety systems are insufficient.

(Page 2 of 2)

"I don't believe what happened in Japan is something we're immune to here," he said.

Steve David, PG&E's director of site services at Diablo Canyon, said the company has "large margins for safety" at the plant. He noted the elevations of the plant and all of its safety systems, including diesel-powered generators and their fuel tanks, are much higher than is the case at Japan's Fukushima plant.

The plant, located at Avila Beach, about 130 miles south of Salinas, has had a troubled history of dealing with unexpected seismic issues. The Hosgri Fault, capable of producing a 7.5 magnitude quake, was discovered a year after its construction permits were issued in 1970, forcing a redesign that caused construction costs to balloon from the \$320 million estimate to more than \$5 billion.

Later, in 1981, PG&E discovered it had built seismic supports based on a reversed blueprint, requiring another \$2.2 billion in retrofits to correct the mistake.

Then, a little more than two years ago, the US Geological Survey discovered another previously unknown offshore fault, the Shoreline Fault, less than a mile from the plant.

PG&E and the federal Nuclear Regulatory Commission determined the plant's design could withstand an earthquake along that fault. However, Boyd of the state Energy Commission, testified the fault's "major characteristics are largely unknown," including the question of whether an earthquake beginning on one of the offshore faults could continue along the other to produce a larger quake than would be anticipated along either one individually.

The plant is licensed through 2024. PG&E submitted an application to the Nuclear Regulatory Commission in November 2009, seeking a 20-year extension.

Under the commission's rules, Boyd testified, seismic activities are considered not relevant and are "not taken into account in relicensing."

He noted, however, that the recent events in Japan led President Barack Obama and Energy Secretary Steven Chu to request in-depth studies of existing US power plants, which will possibly now mean the advanced seismic studies will be required before the license can be extended.

Blakeslee said if PG&E does not agree to suspend its license application he will seek legislation to try to force it to do so.

Given that the current license is good for another 13 years, he said, "There is more than enough time to address this uncertainty."

## **Manufacturer Reports Potential Safety Issue At Browns Ferry (WAFF)**

By Do

WAFF-TV Huntsville (AL), March 23, 2011

Workers at TVA's Browns Ferry nuclear plant are closely monitoring the water coming in and out of the plant, after a parts manufacturer recently notified TVA of a possible issue with some important pieces to its reactors.

Brown Ferry is one of more than two dozen nuclear plants nationwide that use GE Hitachi control rods or blades in its boiling water nuclear reactors.

Control rods in a nuclear reactor are like the brakes on a car. When you want to slow down your car, you hit the brakes. When you want to reduce the amount of energy produced at a nuclear reactor, you insert more control rods.

Depending on where the rod is placed in a reactor, it could last as long as three decades.

However, GE Hitachi recently informed the Nuclear Regulatory Commission in a report that the rods need to be replaced more frequently than the company initially thought.

GE Hitachi discovered extensive cracking in some rods at a nuclear plant overseas – a defect which could create a safety hazard.

Out of 555 control rods in Brown's Ferry's three reactors, 56 of them are the GE Hitachi brand.

TVA spokesman Ray Golden says plant officials are well aware of the issue. One way to tell if the rods begin cracking is if higher levels of certain chemicals begin appearing in the plant's runoff water. Golden says this has not yet been a problem at Browns Ferry.

"We are continuously monitoring the water that goes in and out of the reactor all the time," Golden said. "We know that if these blades started to crack, we would see elevated levels of boron and elevated levels of tritium."

NRC spokesman Roger Hannah says it's not an immediate safety concern, but something that does need to be closely watched.

Golden says TVA officials are considering switching to a different brand of control rods once the current ones are ready to be replaced.

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## **TVA Officials Keeping Close Eye On Japan's Nuclear Crisis (WAFF)**

WAFF-TV Huntsville, AL, March 23, 2011

TVA officials keeping close eye on Japan's nuclear crisis

North Alabama News, Radar, Weather, Sports and Jobs-TVA officials keeping close eye on Japan's nuclear crisis

Trang Do

Tuesday, March 22, 2011 12:00 AM

By Trang Do - bio | email

LIMESTONE COUNTY, AL (WAFF) – TVA officials are keeping a close eye on what went wrong with Japan's reactors and what can be improved for the future for Browns Ferry Nuclear Plant.

About a week and a half since a 9.0 magnitude earthquake and tsunami devastated Japan, nuclear plant employees are still working around the clock to try to cool down damaged reactors and prevent dangerously high levels of radiation coming from the plant from spreading.

Browns Ferry's reactors are boiling water reactors, the same type as the ones affected in Japan.

Tennessee Valley Authority CEO Bill McCollum is watching the situation with the damaged Fukushima Daiichi nuclear reactors especially close. TVA operates three nuclear power plants, including Browns Ferry in Limestone County.

"It's our obligation to explore this and learn as much as we can about how we can be better," said McCollum.

TVA officials admit that the reactors at Browns Ferry are very similar to the troubled reactors in Japan, but they also say there are major differences.

[Click here for continuing coverage of the disaster of Japan]

A huge obstacle at the Japanese reactors was not so much the earthquake that took out power, but the resulting tsunami that flooded and destroyed the back-up power generators.

"Our emergency back-up diesels are in structures that are designed to withstand, high energy tornadoes, earthquakes and also are designed to be submerged so that they're water-tight during any type of flooding events," adds McCollum.

[TVA Emergency Information (PDF)]

McCollum says the Browns Ferry plant has another thing the Japanese reactors do not have: a hardened vent system that would help prevent a build-up of hydrogen from the reactors containment structures.

A build-up of hydrogen gas led to an explosion at one of the Fukushima reactors.

Despite the safeguards already in place at Browns Ferry, McCollum says TVA has formed an internal team to examine what other improvements can be made.

McCollum also says TVA's three nuclear plants are designed to withstand earthquakes much stronger than the eastern US has ever seen. The strongest Alabama earthquake on record was a 5.1 in Irondale, just north of Birmingham, in 1916.

Related Stories:

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## **Energy Company Babcock & Wilcox May Help With Japan Nuclear Power Plants (WP/AP)**

Associated Press, March 23, 2011

LYNCHBURG, Va. — Energy company Babcock & Wilcox says it may help Japan with the nuclear reactors damaged following the devastating earthquake and tsunami this month.

The North Carolina-based company has its Nuclear Operations Group headquarters in Lynchburg.

Babcock & Wilcox said Tuesday it is in talks with Toshiba to provide nuclear technical assistance and services to secure and maintain the safety of the nuclear power plants at Fukushima Daiichi. The details of the work have not yet been defined.

Toshiba is helping the Japanese government and plant operator Tokyo Electric Power Co. with the plants.

Babcock & Wilcox CEO Brandon Bethards says nuclear power plays an important role in the current and future energy picture and there will be lessons learned from this event.

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## **Babcock & Wilcox To Support Japan Relief (CLTBIZJ)**

Charlotte (NC) Business Journal, March 23, 2011

The Babcock & Wilcox Co., which designs, builds and services nuclear reactors, is in discussions with Toshiba Group to secure the safety of the power plants at Fukushima Daiichi in Japan. Babcock & Wilcox says it will provide nuclear technical assistance and support.

The scope of work has not yet been defined.

Babcock & Wilcox doesn't have any operations in Japan. It hasn't experienced any disruption to its supply chain and continues its normal operations

Toshiba is helping the Japanese Government and Tokyo Electric Power Co., the operator of the Fukushima nuclear power plants, to restore the safety of the affected plants and to reinstate power in the region hit by the earthquake and tsunami.

"We are saddened by the loss of life and devastation that has occurred as a result of the earthquake and tsunami in Japan," says Babcock & Wilcox Chief Executive Brandon Bethards. "Our thoughts are with those affected by this tragedy as well as those who continue to recover from its aftermath. Babcock & Wilcox is prepared to support Toshiba's efforts to stabilize the Fukushima Daiichi nuclear power units."

Charlotte-based Babcock & Wilcox (NYSE:BWC) markets clean-energy technology and services, primarily for the nuclear, fossil and renewable-power markets. The company has 12,000 employees worldwide.

## **Babcock & Wilcox May Help With Japan Power Plants (VICTORA)**

Associated Press, March 22, 2011

LYNCHBURG, Va. (AP) - Energy company Babcock & Wilcox says it may help Japan with the nuclear reactors damaged following the devastating earthquake and tsunami this month.

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## **B&W In Talks With Toshiba Over Fukushima Daiichi Nuke Plant (INTLBIZ)**

International Business Times, March 22, 2011

Clean Energy company Babcock & Wilcox Co. (B&W) (NYSE:BWC) said it is in discussions with Toshiba Group to provide nuclear technical assistance and services to secure and maintain the safety of the nuclear power plants at Fukushima Daiichi in Japan.

However, the scope of work has not yet been defined, B&W said.

Toshiba is helping the Japanese Government and Tokyo Electric Power Co., Ltd. (TEPCO), the operator of the Fukushima power plants, to restore and maintain the safety of the affected nuclear power plants and to reinstate power in the region hit by the earthquake and tsunami.

Reactors at the Fukushima Daiichi plant, which lies 150 miles north of Tokyo, have leaked radiation after they were struck on March 11 by a massive earthquake and tsunami, leading to the world's worst nuclear crisis since Chernobyl 25 years ago.

Shares of B&W closed Monday's regular trading session at \$31.68 on the NYSE

## **Meltdown-or-Not Future For Nuclear Fuel Seen In Refrigerator-Sized Reactor (BLOOM)**

By John Lippert And Jeremy Van Loonbloomberg

Bloomberg News, March 23, 2011

Nuclear engineer Jose Reyes jolted awake at 4:45 a.m. on March 11 when his son called to warn him that a massive earthquake had unleashed a tsunami that rocked Japan. Giant waves were heading for the Oregon coast, about an hour from Reyes's Corvallis office.

As news poured in during the next 12 hours that the cooling system at a Tokyo Electric Power Co. nuclear plant had been damaged, Reyes's anxiety grew. People were using the words "potential meltdown" with alarming frequency.

Reyes, 55, who founded NuScale Power Inc. in 2007 to design a slimmed-down, 45-megawatt reactor, contemplated the blot on the already beleaguered nuclear industry – and the prospects for his nascent company, Bloomberg Markets magazine reports in its May issue.

"We've been hard-pressed but not crushed," he says. "Stopping the progress being made would be a mistake."

Convinced that today's large nuclear projects are burdened by too much financial risk, NuScale is designing and testing a 60-foot-high (18-meter-high) reactor encased in a thermos-like metal sheath. It would cost about \$200 million and could be used to light and heat villages, desalinate ocean water or be strung together side by side to form a midsize power plant – virtually free of carbon emissions. With some investors on board, Reyes plans to ask the US Nuclear Regulatory Commission for a license in late 2012.

"More and more people see small nuclear as a green technology," he says.

Decades after accidents at Three Mile Island and Chernobyl poisoned attitudes and the environment, Reyes and a cadre of scientists, engineers and investors have been betting that small-scale reactors can spark a nuclear revival.

Hyperion Power Generation Inc. in Santa Fe, New Mexico, is working on 25-megawatt, refrigerator-sized designs for \$50 million each that could power remote locations or be used in hospitals and factories. By 2020, Russian nuclear company Rosatom Corp. expects to sell seven barges equipped with twin 35-megawatt reactors for the Arctic and Africa. In Argentina, the government of President Cristina Fernandez de Kirchner is clearing ground in the central grasslands for a 25-megawatt prototype planned for 2014.

Microsoft Corp. (MSFT) co-founder Bill Gates is backing a more powerful, 500-megawatt reactor designed by TerraPower LLC in Bellevue, Washington. Its traveling-wave technology uses uranium-238 to fuel a reaction in what functions like a 13-foot-tall candle.

"If it works, it's hard to think of a more valuable offering in the energy space," says Izhar Armony, a partner at Waltham, Massachusetts-based Charles River Ventures, which invested in TerraPower.

As improbable as it may sound amid the devastation in northeastern Japan, the nuclear accident may increase the appeal of innovative, small-scale reactors, says Chris Gadowski, a Bloomberg New Energy Finance analyst in San Francisco.

"We're seeing a knee-jerk reaction saying, 'get rid of nuclear,' but that's not going to happen in the long run," he says. "There is no other good solution if you want to decarbonize the energy sector. As far as small reactors go, these events in Japan will strengthen their hand as opposed to weakening it."

US Energy Secretary Steven Chu, who won the Nobel Prize in physics in 1997 for using lasers to study atomic particles, has requested \$97 million for small-reactor development in fiscal 2012, which begins on Oct. 1. Chu said on March 16 that President Barack Obama's administration will press ahead with efforts to expand loan guarantees for new reactors.

Maurice Gunderson, a partner at San Francisco-based CMEA Ventures, invested in NuScale four years ago. He predicts he'll raise an additional \$200 million by June 1, even after the Japanese disaster.

Anti-nuclear sentiments inflamed by leaking radiation at the Fukushima plant may subside over time, he says. More crucial, he says, is that the world has few good options to replace the one-seventh of its electricity that's produced by nuclear reactors.

"Powering a society as large as the one we have means using nuclear power and coal," he says. "Nothing else we have at the present time is big enough to do it in a sustained way. And coal means lopping off mountaintops, air pollution and mining deaths. It's tremendously hazardous."

Burning petroleum spews carbon into the air, and rising prices ripple through the global economy. From Dec. 17, when riots erupted in Tunisia and spread to oil-rich nations in the region, Brent crude for May settlement surged 26 percent to \$115.70 a barrel in London on March 22.

Reyes says his preliminary data show that his reactor would have survived the Japanese earthquake – and held up under one that shook the ground even harder. NuScale's reactor core is housed inside a vessel that's 10 times stronger than the one in Japan, he says, and that's placed in a pool of water and buried underground.

More important, his design doesn't require pumps or external power to cool the reactor. Fukushima Dai-Ichi reactors, of which Toshiba Corp. (6502) was among the builders, overheated when power sources failed and pumps couldn't deliver cooling water.

NuScale's design relies on so-called passive safety systems that take advantage of natural circulation created by the heating and cooling of water inside and outside the reactor. NuScale's design, which uses about 5 percent of the amount of fuel of the big models, produces less heat after it's idled.

"Keep your core covered with liquid – that's the rule of thumb," Reyes says.

The accident in Japan is hurting Toshiba. The company's shares have dropped 17 percent in the days after the earthquake and tsunami to 406 yen on March 22. On March 16, China suspended approval of new nuclear projects and said it would conduct safety inspections of all plants under construction. China has chosen the AP1000 from Toshiba's Westinghouse unit as its flagship, with the first one set to go online in 2013.

Mycale Schneider, a Paris-based nuclear industry analyst who has advised the governments of Belgium, France and Germany on atomic energy, says small reactors would have been vulnerable to the twin forces of Japan's earthquake and tsunami.

"The industry has lost the last remaining bit of hope," he says. Nuclear proponents can't recover by painting rosy views of a carbon-free atomic future, Schneider says. "This was a big one for the nuclear industry," he says.

New reactor models will arrive too slowly to make a dent in global warming, while used fuel stored in pools of water is a prime terrorist target and safety risk, he says. Permanent waste disposal solutions mean digging into granite or salt and leaving radioactive material for thousands of years.

In the face of such dire predictions, nuclear power has been growing as countries strive to slake mankind's appetite for energy.

The world has 441 reactors, including those at Japan's Fukushima Dai-Ichi facility, with a total of 375,000 megawatts of capacity, the United Nations International Atomic Energy Agency said in September 2010. That provided about 14 percent of the world's power last year. Another 60 reactors are in the works, and output may reach 445,000 megawatts by 2020, the IAEA says.

By 2025, the world could add 36 small reactors, each with 400 megawatts of capacity or less, according to the IAEA. Of the 38 reactors of this size operating today, 34 were built before 1990 and use traditional technology rather than new designs.

TerraPower, the company Gates is backing, aims to build a sodium-cooled reactor by 2020. It would consume spent fuel from conventional plants and generate less waste of its own, addressing a problem that has dogged the industry. TerraPower has spent tens of millions of dollars on research and will need several billion dollars more for a prototype, CEO John Gilleland says.

Toshiba is planning a 10-megawatt model that, if approved, may supply the Alaskan village of Galena. Older, larger Toshiba reactors overheated amid the earthquake when backup systems failed to keep them cool. Toshiba declined to comment on the impact of the accident on its small-scale program.

Babcock & Wilcox Co., Reyes's main competitor in small models, has lined up a customer – a crucial step before seeking NRC approval for its technology. The Tennessee Valley Authority, a federally owned utility in seven states, may build six small Babcock reactors to provide power for 4,800 Department of Energy researchers in Oak Ridge, Tennessee, says Andrea Sterdis, TVA senior manager for nuclear expansion. Terry Johnson, a TVA spokesman, says it's too soon to say how the Japanese accident may affect small-scale reactor development.

Babcock, which supplied boilers for New York's first subways, also built the reactor for the stricken Three Mile Island nuclear facility near Harrisburg, Pennsylvania. In 1979, a commission appointed by US President Jimmy Carter criticized the company for, among other things, failing to notify customers that the kind of coolant valve that caused the Pennsylvania accident had already failed nine other times. Babcock declared bankruptcy in 2000 as a result of legal claims for exposure to asbestos in its power-generating equipment. The company emerged from bankruptcy six years later.

Babcock's new, 125-megawatt reactors would cost about \$500 million each and become available as early as 2018, says Christofer Mowry, CEO of Babcock's B&W Modular Nuclear Energy unit. He declined, through a spokesman, to comment on the Fukushima accident.

Ben Landy, an analyst at Baltimore-based T. Rowe Price Group Inc., says that Babcock already builds reactors for the US Navy and that the company's boilers and pollution-control equipment for coal plants are competitive strengths.

"If small reactors become a big market, that's icing on the cake," Landy says.

With 14.4 million shares, T. Rowe Price is Babcock's biggest investor. Babcock shares rose 52 percent from Aug. 2, when the company was spun off from McDermott International Inc. (MDR), to \$35.09 on March 10, the day before the earthquake. The stock has dropped 9.8 percent since then, to \$31.65 on March 22.

Landy says negative publicity over Fukushima may impede large US reactors already fighting to raise money. Buyers may view Babcock's small models as safer, partly because they're buried in the ground, he says.

The NRC has been marshalling resources for when applications for mini-reactors start rolling in, NRC Chairman Gregory Jaczko says. The commission has 50 people who will determine whether the models need the same personnel, security and insurance as big designs and whether operators should pay similar licensing, disposal and decommissioning fees.

The NRC is familiar with NuScale's basic design and is likely to certify it, BNEF's Gadowski predicts. Hyperion's 8-foot-tall models present a tougher security challenge because they're intended for remote locations. Common thieves probably couldn't steal them, but a rogue government could – and then may convert the uranium into weapons, he says.

Even as Republicans in Congress attacked Obama's energy plan, they left most nuclear programs intact. After Japan's woes, Democrats may be less likely to support the administration's nuclear agenda.

The day after the earthquake, Representative Ed Markey, a Democrat from Massachusetts, called for a moratorium on new plants in seismically active areas until additional safety reviews could be completed. Senator Joseph Lieberman of Connecticut, an independent who heads the Senate's Homeland Security Committee, sought a pause until the Japan accident could be analyzed.

The US nuclear industry is already growing more slowly than those of China, Russia and India. Nuclear generating capacity may jump by 77 percent in the Far East, including China, by 2020 compared with 12 percent in North America, the IAEA says. Capacity in Western Europe may drop 24 percent in that period, the agency says.

Most US utilities still see too much risk. Constellation Energy Group Inc. (CEG) abandoned a five-year quest in October for a third big reactor in Lusby, Maryland. Chicago-based Exelon Corp. (EXC), the largest US nuclear operator, with 17 reactors, is reassessing a \$3.65 billion plan to raise output at its nuclear plants because the company expects safety reviews by the NRC, CEO John Rowe said on March 16. Marilyn Kray, vice president of nuclear development, says if utilities need power, and can be convinced that small reactors are cost-effective, they may build them at existing nuclear or coal sites, which already have transmission lines and permits.

That thinking meshes with Reyes's plans for NuScale.

Seated in his office near Oregon State University, where two paintings by Austrian artist Friedensreich Hundertwasser lean, unhung, against the wall, Reyes recalls how living through the worst US nuclear accident taught him about scale.

He was working as a safety analyst at the NRC during the partial core meltdown at General Public Utilities Corp.'s Three Mile Island plant in 1979. He studied how operators of the Babcock reactor were baffled by 1,000 alarms going off simultaneously. Today, a plant's key diagnostics fit on one computer screen, he says.

"Simplicity matters," Reyes says.

Reyes began forming his idea for NuScale after he got a DOE grant to develop reactors for emerging markets. He built a mock power plant that resembles a 12-foot-tall chimney to troubleshoot his designs in a four-story garage at Oregon State, where he's on leave from his job as a tenured professor. He decided to commercialize the technology and filed 18 patent applications.

Reyes, who holds a Ph.D. in nuclear engineering from the University of Maryland, used similar equipment to convince the NRC in 2005 that a \$6 billion, 1,117-megawatt behemoth designed by Toshiba's Westinghouse unit was safe partly because, like NuScale's, it relies on passive safety systems. China later adopted Toshiba's design for its future reactors.

"After reviewing all these events in Japan, people may decide that these passive plants might be the right way to go," Reyes says.

Reyes had been struggling to raise money even before the Japanese crisis. His woes worsened in January, when the US Securities and Exchange Commission filed a lawsuit against his biggest backer, Francisco Illarramendi, claiming that Illarramendi transferred money among investment accounts without telling clients.

Illarramendi, principal owner of Michael Kenwood Group LLC in Stamford, Connecticut, pleaded guilty in March to what the SEC described as a multiyear Ponzi scheme. He could face up to 70 years in prison, prosecutors say. John Gleason, his attorney, declined to comment.

In January, when the lawsuit temporarily froze NuScale's bank account, CEO Paul Lorenzini fired 30 of 100 employees and hundreds of contractors and cut pay by as much as 50 percent.

One potential investor, Ray Rothrock, who works in Palo Alto, California, for venture firm Venrock Associates, says he passed on NuScale because no one can predict whether or when the NRC will approve its design. The Fukushima accident magnifies the uncertainty, he says.

"This will slow things down, cost money and require the regulatory people to opine on it," Rothrock says. If NuScale passes its regulatory hurdles, he says, the company will be worth billions of dollars.

About 1,450 miles (2,333 kilometers) from Reyes's Oregon lab, in Santa Fe, Hyperion CEO John Deal has been working on what he calls "nuclear batteries" that hospitals, remote communities and oil companies can use for power and heat. Each reactor is designed to run for eight years before Deal retrieves it and drops off a new one.

Deal, 47, worked at Los Alamos National Laboratory, where he says he got the idea to commercialize small nuclear technology, as “resident entrepreneur.” By 2020, Hyperion aims to have a prototype that can operate at 1,000 degrees Fahrenheit (538 degrees Celsius), 400 degrees hotter than water-cooled designs. Hyperion’s lead-bismuth model and sodium-cooled versions from other companies could generate electricity as well as heat for refining bitumen into crude oil or for warming the maternity ward of a hospital.

Deal says his “batteries” offer advantages over the reactors in Japan. They’d spread out power generation rather than concentrating it; they’d be a fraction the size of traditional models; and they’d be buried inside reinforced bunkers designed to withstand earthquakes. Cooling would work by gravity, without pumps.

“If there is a worst, worst, worst case, all contamination, if any, should be very local and remain in the ground inside the vault,” Deal says.

People are likely to accept such security, especially if lack of power means they don’t have basic necessities such as clean water, Deal says.

“You have to get out of Berkeley to realize how badly people need electricity,” he says, referring to the California college town that has long been a protest hotbed. If the NRC moves too slowly to license his reactor, Deal says, he’ll build it overseas.

The planet has 40 years to slice carbon emissions in half or suffer a deadly rise in temperatures, according to the International Energy Agency, which advises the governments of 28 countries, including the US

Nuclear proponents say meeting this challenge requires a cascade of inventions, including reactors that are smaller, safer and cheaper – even after the crisis in Japan.

“There is still a need for clean energy and for getting away from fossil fuels,” Reyes says. “That part of the equation doesn’t change.”

## **NRC Proposes To Amend Licensing, Inspection, Yearly Fees Rule (EGYBUS)**

Energy Business Review, March 22, 2011

The Nuclear Regulatory Commission (NRC) is proposing to amend its regulations for the licensing, inspection and annual fees it charges applicants and licensees for fiscal year 2011.

The nuclear watchdog said that it is required by the Congress to recover for the US Treasury most of its annual appropriated budget through two types of fees.

One is for specific NRC services, such as licensing and inspection activities, that apply to a specific license while the other is an annual fee for generic regulatory expenses and other costs not recovered through fees for specific services.

These fees are are paid to the US Treasury and go into the general fund.

The NRC must recover, through fees to applicants and licensees, 90% of its budget authority for fiscal year 2011 (1 October 2010 - 30 September 2011).

The NRC receives 10% of its budget authority (not including non-fee items) from the general fund each year to pay for the cost of the agency activities that do not provide a direct benefit to NRC licensees.

Based on the fiscal year 2011 budget, the NRC’s total amount of fees to be recovered by 30 September is approximately \$915.3m, about less than 1% (\$0.4m) more than in fiscal year 2010.

## **NEWSMAKER - Problem Solver At Helm As US Faces Test On Nuclear (REU)**

By Timothy Gardner

Reuters, March 23, 2011

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

## **OVERNIGHT ENERGY: Get Ready For More Chu (HILL)**

By Ben Geman And Andrew Restuccia

The Hill, March 23, 2011

State of Play: Energy Secretary Steven Chu will speak Wednesday at a Pew Environment Group forum on clean energy, an appearance that comes days after Chu suggested the Japanese nuclear reactor crisis could influence the siting of future US nuclear plants.

“Certainly where you site reactors and where we site reactors going forward will be different than where we might have sited them in the past, I would say,” he said on “Fox News Sunday.”

Chu’s brief comment drew widespread attention — tomorrow he could face more questions about the impact of the crisis in Japan. The Energy Department has deployed resources and staff to assist the response and track the accident’s effects.

## NEWS BITES:

Begich wants 'development czar' to replace Browner ...

Sen. Mark Begich (D-Alaska) says the White House should replace departed climate czar Carol Browner with a "development czar."

Begich — who has long pushed the administration to greenlight oil drilling off Alaska's coast — pitched the idea in a speech to the state's legislature Tuesday.

He said such a step would enable the White House to show that "it is serious about increasing domestic oil and gas development."

"I call on the President to replace his climate czar with a 'development czar' to help focus this administration on the right priorities for our nation: producing American energy from American soil with American workers," Begich said, according to his prepared remarks.

... and readies bill to push drilling off Alaska's coast

Begich also said he will introduce legislation next week that would establish a federal coordinator for Arctic waters off Alaska's northern coast.

"This office would have authority to work across the agencies causing Alaska so much heartburn today — the EPA, Army Corps of Engineers and Interior Department," Begich said.

"The federal OCS coordinator would work with the State of Alaska and affected local governments to streamline development in the Chukchi and Beaufort seas, which hold such promise for future oil and gas development," he added.

Study: Connecting extreme weather to climate change is effective strategy

A new study says connecting climate change to extreme weather is an effective way of convincing people to take action to reduce greenhouse gas emissions.

That's good news for Rep. Henry Waxman (D-Calif.) and other Democrats who have recently focused their attention on new studies that say climate change exacerbates extreme weather.

The study, which appeared in the journal *Nature Climate Change*, finds that people in the U.K. who have experienced flooding are more concerned about climate change.

From the study:

"[T]hose who report experience of flooding express more concern over climate change, see it as less uncertain and feel more confident that their actions will have an effect on climate change. Importantly, these perceptual differences also translate into a greater willingness to save energy to mitigate climate change. Highlighting links between local weather events and climate change is therefore likely to be a useful strategy for increasing concern and action."

NEI outlines US nuclear emergency procedures

The Nuclear Energy Institute, the nuclear industry's trade association, released a breakdown of emergency preparedness procedures for US nuclear reactors on Tuesday.

The graphic comes amid new concerns about nuclear safety in the United States, particularly from those who live near reactors. New York State Gov. Andrew Cuomo said that the Indian Point nuclear plant should be closed because a major disaster at the plant could affect New York City.

Here are some highlights from the NEI graphic:

- "If evacuation were necessary, emergency responders would initially focus on those citizens likely to be exposed to a potential radioactive release: those within a two-mile radius around the plant, as well as sector(s) five miles downwind. State and local governments make the determination and implement protective action orders for the public."

- "In the event of a release of radiation, state and local governments will also sample water, milk, soil and crops within a 50-mile radius of a plant to determine if radiation was deposited during an incident. According to the federal guidelines for 'worst-case' reactor accidents, immediate life-threatening doses would not occur outside the 10-mile evacuation zone, according to the Federal Emergency Management Agency."

As *The Hill* reported last week, the Nuclear Regulatory Commission requires companies to develop emergency evacuation plans for a 10-mile radius around a reactor. But in Japan, the NRC recommended that Americans living within 50 miles of the stricken reactors evacuate.

Murkowski adds muscle to energy staff

Sen. Lisa Murkowski (R-Alaska), the top Republican on the Energy and Natural Resources Committee, is beefing up her staff ahead of committee debates on energy legislation.

Annie Medaglia has begun a fellowship with the committee. She's a presidential management fellow with the State Department who recently began a "rotation" with the panel; prior gigs include work on Middle East and South Central Asia for

State's Legislative Affairs Bureau and energy security issues in Europe, Central Asia and China with State's Special Envoy for Eurasian Energy, Murkowski's committee office said.

Also on board: Pasha Majdi, who used to work for former Rep. Tom Davis (R-Va.). She joined the committee as a legislative assistant.

Rebecca Rosen has joined the GOP staff to work on energy economics. Her past jobs include working for the consulting firm PFC Energy, where she was "engaged by many of the world's major international and national oil companies to consult on an array of corporate financial and strategic matters," according to the committee.

#### ON TAP WEDNESDAY:

##### Report to defend EPA Clean Air Act rules

The liberal Center for American Progress will roll out a report aimed at showing Latino community benefits stemming from Clean Air Act regulations. The report is part of a wider campaign against GOP-led efforts to scale back or scuttle several regulations that Republicans say will burden businesses and cost jobs.

The report explores "how standards set by the EPA have protected millions of Latinos from diseases from pollution and how our most vulnerable citizens, children, and seniors are at higher risks of suffering chronic ailments," an advisory states.

##### Heritage forum to explore rare-earth policy

The conservative Heritage Foundation will hold an event about rare-earth elements, which are critical to manufacturing certain low-carbon energy and defense-related equipment. China currently dominates global production, leading to fears of supply disruptions.

"The situation has brought calls for government intervention to ensure supply. Many of these calls are misguided. The national security risk is moderate. The commercial market for critical elements is functioning well and could easily be warped by government action. Our panel will discuss the scientific, commercial, and security dimensions of the issues and what if anything should be done about them," an advisory states.

Expert speakers will include MIT physics professor Robert Jaffe.

##### Pew forum on clean energy

The event with Energy Secretary Steven Chu we mentioned above will also include remarks by former Michigan Gov. Jennifer Granholm (D) and former Sen. John Warner (R-Va.), who has warned that climate change is a national security threat.

#### IN CASE YOU MISSED IT...

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

- The nuclear crisis in Japan has made the public more wary about nuclear power
- The Interior Department is planning to broaden ethics rules
- Another poll said the public is more supportive of renewable energy since the crisis in Japan
- Senate Democrats said proposed GOP spending cuts will result in higher gas prices
- Dave Matthews is the face of a new Wilderness Society campaign
- The administration issued its fourth Gulf deepwater drilling permit
- The Interior Department is touting its support for oil and coal amid criticism from Republicans

Please send tips and comments to Ben Geman, [This e-mail address is being protected from spambots. You need JavaScript enabled to view it](mailto:This e-mail address is being protected from spambots. You need JavaScript enabled to view it), and Andrew Restuccia, [This e-mail address is being protected from spambots. You need JavaScript enabled to view it](mailto:This e-mail address is being protected from spambots. You need JavaScript enabled to view it).

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## Nuclear Power Loses Support In New Poll (NYT)

By Michael Cooper And Dalia Sussman

New York Times, March 23, 2011

What had been growing acceptance of nuclear power in the United States has eroded sharply in the wake of the nuclear crisis in Japan, with support for building nuclear power plants dropping slightly lower than it was immediately after the accident at the Three Mile Island plant in 1979, according to a CBS News poll released on Tuesday evening.

Only 43 percent of those polled after the failure of the Fukushima Daiichi plant in Japan said they would approve building such new facilities in the United States to generate electricity. That is a steep decline from the 57 percent who said in 2008 that they approved of new plants. That poll was taken at a time of soaring gas prices and mounting concerns about global warming that led to calls for a new national energy policy and that drove popular support for nuclear power to its highest level in three decades.

Support for nuclear power has waxed and waned over the decades, going up as the power-hungry nation looked for ways to meet demand and driven down by nuclear accidents at home and abroad. Support for more nuclear power plants was 69 percent in 1977, the highest level ever recorded in a poll by The New York Times or CBS News. But two years later, it plummeted to 46 percent after the Three Mile Island accident near Harrisburg, Pa. After the Chernobyl disaster in Ukraine, then part of the Soviet Union, in 1986, support dropped to 34 percent in a CBS News poll.

The new poll found that nearly 7 in 10 Americans think that nuclear power plants in the United States are generally safe. But nearly two-thirds of those polled said they were concerned that a major nuclear accident might occur in this country — including 3 in 10 who said they were “very concerned” by such a possibility. Fifty-eight percent of those polled said they did not think the federal government was adequately prepared to deal with a major nuclear accident.

Still, 47 percent of those polled said that, over all, the benefits of nuclear power outweighed the risks; 38 percent said they did not.

The nationwide telephone poll was conducted March 18-21 among 1,022 adults, and it has a margin of sampling error of plus or minus three percentage points.

The unfolding crisis in Japan occurred just as many Americans believed that nuclear power was poised to make a comeback in the United States, more than three decades after the Three Mile Island accident.

President Obama has spoken in his past two State of the Union addresses of the need to build more nuclear plants, and he has called for billions of dollars in federal loan guarantees for construction. Some environmental groups, and many members of Congress in both parties, have also increasingly come to consider nuclear power as a steady energy source that, since it does not emit carbon, could play an important role as the nation seeks to address concerns about climate change.

But even before the Japan crisis, there were tremendous financial challenges for any new construction, and the number of plants that was expected to be built in the near future was small.

Finding places to build new plants could also prove difficult: more than 6 in 10 of those polled said they would not approve of a nuclear plant in their community. Support was highest in the South, where plans are under way for new plants in South Carolina and Georgia, and in the Midwest.

Attitudes toward nuclear power varied along partisan and gender lines, the poll found.

A slim majority of Republicans said they approved of building more nuclear plants, while majorities of Democrats and independents disapproved. Republicans were also more likely to see the existing nuclear power plants as safe, and were more likely to say that the federal government was prepared to handle an accident, though most still said the government was not ready for such an emergency.

And Republicans were less likely to disapprove of new nuclear plants in their areas: 50 percent of them said they did not want new nuclear plants nearby, compared with 69 percent of Democrats and 65 percent of independents.

There was also a gender divide: while a majority of men said they approved of new nuclear plants, most women disapproved. Women were also significantly less likely than men to say that the benefits of nuclear power outweighed the risks, more likely to say that they were “very” concerned about a major accident and more likely to say that the events in Japan made them more afraid that a nuclear accident could occur in the United States.

Mr. Obama received high marks for his handling of the crisis from all political groups. Nearly half of those polled said they were concerned that radiation from Japan could harm people in the United States, with the results similar across all regions. But their concern did not run very deep: only 17 percent said they were “very concerned” about the possibility, including just 13 percent of those who live in the West.

## **Support For Nuclear Power Is Partisan (POLITCO)**

By Jennifer Epstein

Politico, March 23, 2011

As nuclear plants in Japan continue to leak radiation in the aftermath of a string of natural disasters, Americans are voicing stronger opposition to the construction of new plants than they did a year ago, though a majority still support the use of nuclear power to produce electricity.

In a CNN/Opinion Research Corporation poll released Tuesday, 53 percent of Americans said they oppose the construction of new plants, up from 47 percent in a CNN poll conducted in March 2010. Forty-six percent said they support the construction of new plants, down from 50 percent in last year’s poll.

Support for building more nuclear plants breaks down along party lines, with 34 percent of Democrats and 57 percent of Republicans in favor of new plants. Independents are divided 50-50 on building new plants.

Though a small majority of Americans are against the building of new nuclear plants, 57 percent said they support the domestic use of nuclear energy, while 42 percent said they are opposed to it.

When CNN polled on the question soon after the Three Mile Island accident in 1979, 53 percent of Americans approved of using nuclear power to produce electricity. In 1986, following the Chernobyl disaster, 45 percent of Americans said they supported the use of nuclear power.

Most Americans have a “not in my backyard” attitude toward nuclear plants, with 60 percent of those surveyed saying they wouldn’t want one to be built in their own community, while 39 percent said it would be acceptable.

The poll was conducted March 18-20 and surveyed 1,012 adults. The error margin is plus or minus 3 percentage points.

## **Poll: Japanese Crisis Cuts US Nuke Energy Support (HILL)**

By Ben Geman

The Hill, March 23, 2011

But nuclear advocates might take heart in the rise in public support for expanded offshore drilling, which had dipped in the months after last year’s massive BP oil spill began.

Pew’s poll this month shows that 57 percent of the 1,004 adults polled favor allowing more offshore oil-and-gas drilling in US waters, while 37 percent oppose it. That’s a turnaround from Pew polling last June, when 44 percent favored expanded drilling while 52 percent opposed it.

The recent oil and gasoline price spikes are likely playing a role — support for wider drilling was 51 percent in October, before the turmoil in the Middle East and North Africa began sending prices upward.

Pew polls in February of 2010, April of 2009 and September of 2008 showed support for allowing more offshore drilling in the 63-67 percent range.

Elsewhere, the new poll finds that 74 percent of adults favor increased federal spending on renewable energy research, while 21 percent oppose it. The numbers are consistent with other Pew polls over the last year.

The White House is pushing for expanded Energy Department R&D funding, while Capitol Hill Republicans want to decrease spending for those programs.

## **Nuclear Power In US: Public Support Plummets In Wake Of Fukushima Crisis (CSM)**

Christian Science Monitor, March 23, 2011

Most Americans said they favor kicking away nuclear-industry supports. Even though President Obama has asked for \$36 billion in new loan guarantees on top of \$18 billion already approved by Congress, 73 percent of Americans said they do not “think taxpayers should take on the risk” of construction loans for new nuclear reactors. The same proportion favor “a shift of federal loan-guarantee support for energy away from nuclear reactors” toward wind and solar power.

Some 73 percent respondents favor congressional review of a 1957 law that indemnifies nuclear-power companies from most disaster cleanup costs. Instead, Americans would hold the companies “liable for all damages resulting from a nuclear meltdown or other accident,” the survey said.

Slightly more Americans (76 percent ) are also now “more supportive than ... a month ago to using clean, renewable-energy resources – such as wind and solar – and increased energy efficiency as an alternative to more nuclear power in the United States.”

Meanwhile, 51 percent support “a halt to the United States extending the operating lifespan of its oldest nuclear reactors.” Owners of dozens of aging nuclear power plants – among 104 reactors nationwide – are seeking 20-year operating permit extensions.

Such sentiments have already come into play in state legislative hearings in California, where lawmakers questioned the safety of two coastal nuclear plants located within the highest seismic hazard area, according to the Nuclear Regulatory Commission (NRC). State Sen. Sam Blakeslee, who has a doctorate in geophysics, asked that the owner of one of the plants withdraw its application for a new license until further studies were done.

In addition, 23 nuclear plants in the US have the same or similar reactor design as the Fukushima plant. A February survey showed 68 percent of Vermont residents supported the closure next year of the Vermont Yankee plant, which has a General Electric Mark 1 Boiling Water Reactor, like Fukushima.

Though the Vermont Senate voted last year to retire the plant as scheduled – and the plant cannot operate without its state license – the NRC still extended the Vermont Yankee plant’s operating license Monday. “This move calls into question the seriousness” of the NRC’s decision to conduct a 90-day review of the entire industry in light of the Fukushima crisis, says Erich Pica, president of Friends of the Earth.

The NRC has defended its safety record. "The NRC remains confident that our Reactor Oversight Program, which includes both on-site and region-based inspectors, is effectively ensuring US nuclear power plants are meeting the NRC's strict requirements and are operating safely," said Scott Burnell, NRC spokesman, in a recent statement.

But officials representing the nuclear power industry acknowledge that there is work ahead to reassure Americans.

"We're not at all surprised to see – in the wake of more than a week of intensive news coverage – that support has dropped," says Steve Kerekes, a spokesman for the Nuclear Energy Institute, an industry trade group in Washington. "We will apply the lessons learned from Fukushima and make the plants even safer than they already are – and build public confidence. We're committed to doing this."

## **US Public Support For More Nuclear Power Slips (REU)**

By Christopher Doering

Reuters, March 23, 2011

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

## **US Looks To Safeguard Medical Isotopes From Terrorists (NATJO)**

By Ronald Brownstein

National Journal Daily, March 22, 2011

The United States is spending millions of dollars to help hospitals reduce the potential for terrorists to acquire sufficient amounts of medical isotopes to build a radiological "dirty bomb," Newsday reported on Monday (see GSN, Aug. 20, 2010).

The National Nuclear Security Administration is funding the effort as part of its initiative to assess and improve radioactive substance safeguards at almost 2,700 sites no later than 2020, according to NNSA Deputy Director Kenneth Sheely.

In excess of 120 of the sites covered by the program are in New York state, including 50 facilities in New York City. Thirty facilities have already been examined in the city, including 18 hospitals. Before the end of 2011, officials want to see safeguard studies completed for all New York City hospitals.

Seven Long Island facilities have undergone security assessments and \$800,000 in safeguard improvements have been carried out on three buildings, NNSA officials said.

The North Shore-Long Island Jewish Health System, comprised of 15 hospitals, has employed grant dollars to improve protection of a radiological machine at the Lenox Hill Hospital in Manhattan and is requesting additional money to secure another device in Manhasset, hospital system Vice President James Romagnoli said.

US counterterrorism experts fear that widely used and inadequately secured devices that house radioactive materials could create an opening for terrorist organizations such as al-Qaeda to produce a dirty bomb, which would use conventional explosives to disperse radiological substance over a wide area (see GSN, Feb. 2).

"It's a very significant concern," said Representative Peter King (R-N.Y.), adding that he spoke in the fall with New York Police Commissioner Ray Kelly and federal officials about the issue.

The Obama administration requested \$25 million in fiscal 2011 for a program to secure radioactive materials. Congress has not passed a final budget for the current budget year, which ends on September 30, instead approving a series of continuing funding resolutions. The White House is seeking to increase funding for the program to \$51 million in fiscal 2012.

Meanwhile, Washington is also training state and local law enforcement officials and hospital security guards, among others, at a specialized security facility in Oak Ridge, Tenn. The training includes countering a terrorist attempt to invade a hospital in order to obtain radioactive substances.

"What we need to understand is that preparation and prevention at places such as hospitals is an insurance policy and relatively low cost compared to the potential consequences [of a dirty bomb attack]," Federation of American Scientists President Charles Ferguson stated by e-mail.

Enhanced security measures include the purchase for hospitals of mechanical delaying devices that are fixed to blood irradiators and cancer treatment devices to extend the amount of time it would take for an individual to open the machines.

"Buying time is important because a dirty bomb is not a very technologically (sophisticated) device to make," Sheely said (Anthony Destefano, Newsday, March 21).

## **H Canyon Might Remain Open (AUGC)**

By Rob Pavey

Augusta Chronicle, March 23, 2011

AIKEN — A plan to scale back operations at Savannah River Site's H Canyon could keep a still-growing inventory of spent nuclear fuel in South Carolina indefinitely, members of a citizens committee told site officials Tuesday.

"H Canyon has become very problematic lately," said Rose Hayes, the nuclear materials committee chairwoman for the SRS Citizens Advisory Board. "Right now, it is the disposition path for foreign and domestic spent nuclear fuel, and without H Canyon, there is no disposition path for this material."

The 403,000-square-foot chemical separations plant was built in the 1950s to recover uranium and plutonium for defense programs. Today, it is the nation's sole remaining facility at which certain types of plutonium, highly enriched uranium and aluminum-clad spent nuclear fuels can be processed for disposal.

The US Department of Energy announced plans last month to place the facility in "minimum inventory and staffing condition," which could include halting the flow of nuclear materials sent there for processing.

The measure could also affect a still-unknown number of the canyon's 750 jobs and, according to President Obama's fiscal year 2012 budget request, would save about \$100 million by halting operations, while keeping the site in a "standby" mode that would allow it to resume operations quickly.

Allen Gunter, a senior DOE technical adviser, told committee members that scheduled shipments of highly enriched spent fuel from research reactors in the US and abroad are still scheduled to arrive at the plant in coming years.

The material would be stored with about 14 metric tons of existing used fuel kept in pools of water in the site's L Area.

Although the site is not supposed to be a permanent repository for such material, it is nonetheless a safe storage area, he said.

The committee said that L Basin is nearly full and that adding more could increase safety risks to workers and the public.

Gunter responded that no final decisions have been made about how to define "standby" mode at H Canyon, and the site's contractor – Savannah River Nuclear Solutions – has not yet completed its assessment of how the proposed change would affect personnel and jobs.

"There are also discussions of possibly revising the fiscal 2012 budget from 'safe shutdown' to 'operable,' " Gunter said. "But that is a discussion that's still under way."

## **144 Get Layoff Notices At Mission Support Alliance (TRICITYH)**

By Annette Cary

Tri-City (WA) Herald, March 23, 2011

Almost 150 people learned Monday that they are losing their jobs at Hanford in the first round of layoffs linked to the end of federal economic stimulus money.

Mission Support Alliance notified all 68 employees who had applied for a voluntary layoff that their applications had been accepted.

But the Hanford contractor, which provides support services for the nuclear reservation, had been prepared to accept up to 200 voluntary layoff applications, said spokeswoman Deanna Smith.

To help make up the difference, it notified 76 employees that they also would be laid off. All 144 employees will leave their jobs at month's end.

Hanford staffed up when it received \$1.96 billion in American Recovery and Reinvestment Act money starting in spring 2009 to supplement annual budgets of about \$2 billion. Most of the one-time money is expected to be spent by Sept. 30.

Although Mission Support Alliance received none of the economic stimulus money directly, it increased staff to support other contractors, including hiring and providing training and information technology services.

It expects to cut its staff by 300 by the end of September. A second request for employees who want to leave voluntarily is planned in May.

In addition, CH2M Hill Plateau Remediation Co., which received \$1.3 billion of the Hanford economic stimulus money, expects to cut 1,350 jobs through a combination of voluntary and involuntary layoffs.

The central Hanford cleanup contractor told employees in January that they could volunteer for layoffs during a 21-day period starting in late May. Jobs are expected to be cut in July, August and September.

The Mission Support Alliance employees who received layoff notices Monday included a broad range of management, administration, professional and organized labor employees, Smith said.

Employees will receive one week's severance pay for every year worked, up to 20 years. In addition, workers may elect continued medical coverage under a DOE program for displaced workers.

Mission Support Alliance is working with WorkSource Columbia Basin to help workers find new jobs. DOE also has arranged for a virtual worker transition center, which will offer computerized job search services nationwide to environmental cleanup workers.

An early retirement program had been proposed for Hanford contractor employees, but DOE did not approve it, finding it too costly.

– Annette Cary: 582-1533; [acary@tricityherald.com](mailto:acary@tricityherald.com)

## **Hanford official's talk to review Japan impacts (TRICITYH)**

Tri-City Herald (WA), March 23, 2011

The director of a monitoring lab at Hanford will give a presentation today at Columbia Basin College that will include comments on the nuclear crisis in Japan and what it means for American nuclear plans.

James Conca is director of the Waste Sampling and Characterization Facility, a radiological and environmental monitoring lab that is a part of the Mission Support Alliance at Hanford.

He will discuss how energy needs affect everything from the economy to national security in a presentation titled "The Geopolitics of Energy: Achieving a Just and Sustainable Energy Distribution by 2040."

He also will discuss the Japanese Fukushima nuclear incident's effect on the US nuclear industry, geologic risks and how the latest reactor designs can handle such devastating events.

Read more: <http://www.tri-cityherald.com/2011/03/22/1418762/hanford-officials-talk-to-review.html#ixzz1HPrdQOFe>

## **Hanford Whistle Blower Case More Closely Linked With DOE (NPR)**

NPR, March 23, 2011

RICHLAND, Wash. – Documents just surfacing from an ongoing lawsuit are raising questions about the demotion of a Hanford whistleblower and whether a top manager with the Department of Energy was involved.

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Last July Walt Tamosaitis was removed from a top management position with a Hanford contractor URS. URS was one of many businesses that subcontracted with another private business, Bechtel, to build a massive \$12 billion radioactive waste treatment plant for the federal government.

Tamosaitis' job was to trouble-shoot any engineering issues that came up along the way. Tamosaitis claims he was demoted because of the questions he raised about the safety of the plant. He's suing Bechtel and URS.

Tom Carpenter of the watchdog group Hanford Challenge says email strings found in this court process show that DOE was also involved in Tamosaitis' demotion.

Tom Carpenter: "The evidence is starting to come out that there certainly did appear to be some internal agreements to get him off the site and the project."

Energy Department spokespeople refused to comment on these developments. But in previous statements on this issue they've said that the federal government doesn't get involved in contractor staffing decisions and was not involved in Tamosaitis' demotion.

On the Web:

Tamosaitis case documents:

<http://www.hanfordchallenge.org/wp-content/uploads/2010/08/2011-2.31-New-Evidence-shows-DOE-role-in-Tamosaitis-removal.pdf>

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## **Global Crises Overshadow Obama's 2011 Agenda (USAT)**

By Susan Page, Usa Today

USA Today, March 23, 2011

WASHINGTON — President Obama returns to the White House today after a six-day trip to Latin America that was intended to focus on jobs, trade and the economy — but the world just wouldn't cooperate.

A partial nuclear meltdown in Japan, a US military operation in Libya, a looming budget showdown in Washington and more have overwhelmed Obama's agenda, raised risks for the nation's fragile economic recovery and opened him to criticism from not only the emerging Republican presidential field but also some congressional Democrats.

Welcome home, Mr. President.

"I didn't think anything could take the cameras off the Middle East, and then Japan has a triple disaster" of an earthquake and tsunami that damaged nuclear plants, says Steven Clemons of the centrist New America Foundation. "It's like out of a Godzilla movie. You have to wonder, what's the next thing?"

"I have spent the bulk of the last month literally in the Situation Room," Vice President Biden told a reception for major Democratic donors in Boston on Monday.

Just eight weeks ago, Obama outlined in his State of the Union Address his priorities for the year. He coined the phrase "winning the future," called the challenges of the day "our generation's Sputnik moment" and endorsed both deficit reduction and spending on energy, education and infrastructure. He set goals to expand access to high-speed rail, increase college-graduation rates and generate clean energy.

Since then, the administration's efforts to spotlight those initiatives through presidential trips, events by Cabinet members, conference calls with reporters and op-eds in newspapers have been swamped by an unrelenting crush of news, from public employees protesting at the Wisconsin state Capitol to pro-democracy demonstrators marching in the streets of Cairo.

In a sign of how quickly things have changed, consider this: Obama's State of the Union speech didn't mention Egypt — then ruled by Hosni Mubarak, a US ally for decades who has since been ousted — or refer to the safety concerns over nuclear power that are sparking headlines around the world. There wasn't a word about Libya or collective-bargaining rights, issues now front and center.

"I can't remember seeing anything like this in terms of the sweep of the different things going on," says Norman Ornstein, a veteran congressional scholar at the American Enterprise Institute. "It makes it very tough for a president who tries to use a foreign trip to help frame an agenda and use his presence and the bully pulpit to get a message across."

At a news conference Tuesday in El Salvador, the questions for Obama from US reporters were about Libya. He acknowledged the press of the unexpected: "Events happen around the world in which the United States, with our unique capabilities, has to respond."

Presidential historian Robert Dallek cautions against declaring the current crush of challenges unprecedented, but he has to reach back seven decades to cite a more dramatic example. "Think of the Franklin Roosevelt period of 1939 to 1941, when he confronted intensely isolationist sentiment in the country and the dangers from Nazism and Japanese militarism," he says.

Global turmoil has tested Obama's leadership and upended his promise to sharpen his focus on reducing the nation's stubbornly high jobless rate. It also has unsettled some Americans.

Confidence in the economy has fallen to its lowest level of the year, according to a Gallup Poll released Tuesday. Now, 32% of Americans believe the economy is getting better; a year ago, when optimism that the recession was over was beginning to take hold, 35% did.

And unlike in FDR's day, the instantaneous nature of modern communications can amplify the clamor.

"It does create a sense of immediacy and urgency ... to have this 24/7 news cycle with people on television yammering away constantly about 'Look what's going on!' " Dallek says. "It does heighten the sense of crisis and danger."

Crisis has defined Obama's presidency from the start. At his inauguration, he faced the worst economic downturn since the Great Depression. After a bailout for automakers and a stimulus package, he pushed a health care overhaul through Congress — the one-year anniversary of its signing is today — that continues to split the public and energize his opposition.

Now Obama's decision to use US military forces to impose a "no-fly zone" over Libya has prompted criticism from Republican presidential hopefuls that the president dithered before agreeing to act. Former Massachusetts governor Mitt Romney called Obama "tentative, indecisive, timid and nuanced." Former House speaker Newt Gingrich dubbed him "spectator in chief."

Lawmakers in both parties, including such Democratic stalwarts as House Caucus Chairman John Larson of Connecticut, complain that Obama failed to fully consult with Congress before ordering US forces into combat.

Ahead: Funding for the federal government? It expires April 8.

## **US Senate Panel To Weigh Cybercrime Costs (AFP)**

AFP, March 23, 2011

WASHINGTON (AFP) – A key US Senate panel announced Tuesday it will hold a March 29 hearing on the economic costs of cyberattacks and cyber crimes like identity theft and hacker strikes on government computers.

The US Senate Commerce Committee said it "will explore how cyber attacks imperil America's economy, as well as examine the private sector's role in protecting networks from cyber exploitation and theft."

"Every day, cyber thieves are stealing our identities, our money, our business innovations and our national security secrets," said the panel's chairman, Democratic Senator Jay Rockefeller.

"They are trying to rob us of our economic and global competitiveness, and right now we're not stopping them. There is too much at stake and no time to waste. I am committed to getting a cybersecurity bill passed this year."

The hearing will include testimony from government officials, the private sector, and security specialists.

## **INTERNATIONAL NUCLEAR NEWS:**

### **Power Lines Up In Progress At Japan Nuclear Plant (AP)**

By Eric Talmadge And Mari Yamaguchi, Associated Press

Associated Press, March 23, 2011

FUKUSHIMA, Japan – Workers at a leaking nuclear complex hooked up power lines to all six of its reactor units, but other repercussions from a massive earthquake and tsunami still rippled across Japan as economic losses mounted at three flagship companies.

The progress on the electrical lines at the Fukushima Dai-ichi nuclear power plant was a welcome and significant advance Tuesday after days of setbacks. With the power lines connected, officials hope to start up the overheated plant's crucial cooling system that was knocked out during the March 11 earthquake and tsunami that devastated Japan's northeast coast.

Tokyo Electric Power Co. warned that workers still need to check all equipment for damage first before switching the cooling system on to all the reactor units — a process that could take days or even weeks.

Late Tuesday night, Tokyo Electric said lights went on in the central control room of Unit 3, but that doesn't mean power had been restored to the cooling system. Officials planned to try to power up the unit's water pumps later Wednesday.

Emergency crews also dumped 18 tons of seawater into a nearly boiling storage pool holding spent nuclear fuel at Unit 2, cooling it to 122 degrees Fahrenheit (50 degrees Celsius), Japan's nuclear safety agency said. Steam, possibly carrying radioactive elements, had been rising for two days from the reactor building, and the move lessens the chances that more radiation will seep into the air.

Added up, the power lines and concerted dousing bring authorities closer to ending a nuclear crisis that has complicated the government's response to the catastrophic earthquake and tsunami that killed an estimated 18,000 people.

Its power supply knocked out by the disasters, the Fukushima complex has leaked radiation that has found its way into vegetables, raw milk, the water supply and even seawater. Early Wednesday, the government added broccoli to the list of tainted vegetables, which also include spinach, canola, and chrysanthemum greens. Government officials and health experts say the doses are low and not a threat to human health unless the tainted products are consumed in abnormally excessive quantities.

The Health Ministry ordered officials in the area of the stricken plant to increase monitoring of seawater and seafood after elevated levels of radioactive iodine and cesium were found in ocean water near the complex. Education Ministry official Shigeharu Kato said a research vessel had been dispatched to collect and analyze samples.

The crisis continued to batter Japan's once-robust economy.

Three of the country's biggest brands — Toyota Motor Corp., Honda Motor Co. and Sony Corp. — put off a return to normal production due to shortages of parts and raw materials because of earthquake damage to factories in affected areas.

Toyota and Honda said they would extend a shutdown of auto production in Japan that already is in its second week, while Sony said it was suspending some manufacturing of popular consumer electronics such as digital cameras and TVs.

The National Police Agency said the overall number of bodies collected so far stood at 9,099. An additional 13,786 people have been listed as missing, though there may be some overlap on those two lists.

"We must overcome this crisis that we have never experienced in the past, and it's time to make a nationwide effort," Chief Cabinet Secretary Yukio Edano, the government's public point-man, said Tuesday in his latest attempt to try to soothe anxieties.

Still, tensions were running high. Officials in the town of Kawamata, about 30 miles (50 kilometers) away from the reactors, brought in a radiation specialist from Nagasaki — site of an atomic bombing during World War II — to calm residents' fears.

"I want to tell you that you are safe. You don't need to worry," Dr. Noboru Takamura told hundreds of residents at a community meeting. "The levels of radiation here are clearly not high enough to cause damage to your health."

But worried community members peppered him with questions: "What will happen to us if it takes three years to shut down the reactors?" "Is our milk safe to drink?" "If the schools are opened, will it be safe for kids to play outside for gym class?"

Public sentiment is such in the area that Fukushima's governor rejected a request from the president of Tokyo Electric, or TEPCO, to apologize for the troubles.

"What is most important is for TEPCO to end the crisis with maximum effort. So I rejected the offer," Gov. Yuhei Sato said on national broadcaster NHK. "Considering the anxiety, anger and exasperation being felt by people in Fukushima, there is just no way for me to accept their apology."

While many of the region's schools, gymnasiums and other community buildings are packed with the newly homeless, in the 11 days since the disasters the numbers of people staying in shelters has halved to 268,510, presumably as many move in with relatives.

In the first five days after the disasters struck, the Fukushima complex saw explosions and fires in four of the plant's six reactors, and the leaking of radioactive steam into the air. Since then, progress continued intermittently as efforts to splash seawater on the reactors and rewire the complex were disrupted by rises in radiation, elevated pressure in reactors and overheated storage pools.

Radiation levels have abated from last week's highs, allowing authorities to bring in more workers. By Tuesday, 1,000 plant workers, subcontractors, defense troops and firefighters were at the scene, the Nuclear and Industrial Safety Agency said.

Tokyo Electric and experts said still more time is needed to replace damaged equipment and vent any volatile gas to make sure the restored electricity does not spark an explosion.

"You're going to get fires now as they energize equipment," said Arnold Gundersen, the chief engineer at the US-based environmental consulting company Fairewinds Associates. "It's going to be a long slog."

The Vienna-based International Atomic Energy Agency said that monitors have detected radiation 1,600 times higher than normal levels — but in an area about 12 miles (20 kilometers) from the power station, at about the perimeter of the evacuation area declared by the government last week.

Radiation at that level, while not high for a single burst, could harm health if sustained. If such levels were projected to last three days, US authorities would order an evacuation as a precaution.

The levels drop dramatically the farther you go from the nuclear complex. In Tokyo, about 140 miles (220 kilometers) south of the plant, levels in recent days have been higher than normal for the city but still only a third of the global average for naturally occurring background radiation.

There have been few reports of looting since the disasters struck. But someone did take advantage of a bank's crippled security system that left a vault wide open — allowing at least one person to walk off with 40 million yen (\$500,000), police said Tuesday.

## **Electricity Connected To Daiichi Reactors As Japanese Evacuees Struggle For Normalcy (WP)**

By David Nakamura And Brian Vastag

Washington Post, March 23, 2011

TOKYO — Crews at the heavily damaged Fukushima Daiichi nuclear power plant reached a milestone Tuesday as they finished connecting external power to all six of the facility's reactors.

Workers were going to test the plant's internal electrical and cooling systems to see whether they can cool the overheated reactors and prevent further meltdown and releases of radiation.

Crews have been using external pumps to send seawater into three of the facility's six reactors after the cooling systems failed following the March 11 earthquake and tsunami.

Concerned that the highly corrosive seawater might have damaged equipment, the plant's operator, Tokyo Electric Power (Tepco), was "checking each electrical device on each unit," said Taro Ishida, a representative of the Federation of Electric Power Companies in Japan, an industry group in Washington.

In the meantime, the power company resumed rolling blackouts in many areas of Japan in an effort to conserve energy.

On Tuesday, 11 days after the 9.0-magnitude earthquake and tsunami that struck off the coast of Sendai in northeastern Japan, the National Police Academy said that 9,080 people had been killed and that 13,561 were missing.

There were four sizable aftershocks in Tokyo on Tuesday, including one at lunchtime large enough to trigger an early-warning system of TV and cellphone alerts.

With reconstruction costs pegged by the World Bank at up to \$235 billion, Japanese government officials pledged to pump public money into the relief effort. The Kyodo News agency reported that Koichiro Gemba, the national policy minister, said three supplementary budgets could be needed in fiscal 2011 to fund the reconstruction effort.

In the battle to limit radiation from pools of uranium fuel, concrete-pumping trucks turned their spindlelike arms on unit 4 and sprayed seawater directly into that reactor's fuel pool. Meanwhile, water guns from the Tokyo fire department sprayed the pool in unit 3. Previous efforts to cool the pools included seawater drops from helicopters.

The used fuel pools still present the "highest concern" at the facility, said Graham Andrew, a technical adviser to the director general of the International Atomic Energy Agency in Vienna. If the pools heat up, they can emit high doses of radiation, further hindering progress. Work had been suspended the previous day because of concerns about smoke from two of the units.

At a news briefing, Japanese Chief Cabinet Secretary Yukio Edano said that the government will analyze potential impacts on coastal fisheries, adding fish and shellfish to spinach and other vegetables on the list of foods that the government is monitoring for radioactive contamination.

Adding to concerns about the food supply, the Japanese government reported detecting radioactive fallout in seawater near the facility and in soil 25 miles away. Tepco said that concentrations of radioactive iodine-131 just south of the facility were more than 100 times higher than the legal limit.

Many of the estimated 140,000 residents who lived within 12 1 / 2 miles of the facility are camped in evacuation centers such as the one visited Tuesday by a high-ranking power company official, who apologized to evacuees by saying he was "sorry to have caused you trouble."

"We will put all our efforts toward putting things under control as soon as possible," Norio Tsuzumi, the executive vice president of Tepco, told those living at a center in Tamura City in Fukushima.

A TV broadcast showed residents of the shelter peppering Tsuzumi with comments such as: "We won't be able to farm anymore and will lose our source of income!"

The evacuation center in Tamura City is one of hundreds that have been hastily organized to serve those displaced by the triple disaster.

In Saitama, a sprawling city north of Tokyo, about 2,300 people were sleeping in the wide hallways of the Saitama Super Arena and living off donated rice. Most come from the once-rural town of Futabamashi, next to the damaged Daiichi plant.

The government ordered everyone to evacuate Futabamashi soon after the earthquake and chartered dozens of buses to Saitama. Families from other flooded towns and areas close to the plant made their own way south as well.

A small but welcome semblance of normalcy came Tuesday for the families at the shelter; after nearly two weeks, their children could go to school.

Yukie Yamada, a professional education advocate, had heard about the shelter and offered to open a school. She brought her own worksheets and reading materials and recruited scores of volunteers, many of them retired teachers.

On the first morning, more than 80 children signed in at the makeshift classroom in the arena's basement, each picking out assignments organized by grade level.

By afternoon, elementary students were reviewing multiplication tables with help from tutors, and middle-schoolers were practicing their English.

School is familiar for the children, organizers said, and helps take their mind off the stress of displacement and survival. At the beginning of the day there were no smiles on their faces, said Miwako Hamanaka, one of the coordinators of the makeshift school. But by the end, the youngsters were talking and having fun.

Shigeyuki Kuboki said that school was a welcome change of pace for his three daughters. They abandoned their flooded home in the town of Yotsukura 11 days ago, bringing little more than school supplies.

They hope to return and start over, Kuboki said, but not until the nearby nuclear plant stabilizes.

Meanwhile, in Vienna, the IAEA said it was not receiving complete information about the state of the nuclear facility. In the United States, political and public opinion fallout from the disaster intensified.

Sen. Barbara Boxer (D-Calif.) released excerpts of an e-mail from the National Regulatory Commission that listed California's two nuclear power plants as the only such facilities in the United States located in "high seismic hazard" zones. For a week, Boxer and Sen. Dianne Feinstein (D-Calif.) have been pressing the NRC for safety reviews of the nuclear stations at San Onofre and Diablo Canyon.

And a new survey documents declining support for nuclear power. Conducted by the nonprofit Civil Society Institute, the survey of 800 adults found that 53 percent support "a moratorium on new nuclear reactor construction in the United States," but only if energy conservation and wind and solar power can meet the country's energy needs. In addition, 73 percent said they opposed federal loan guarantees for new nuclear facilities.

"It's not at all surprising that support would have slipped, given the events of the past few weeks," said Steven Kerekes, a spokesman for the Nuclear Energy Institute, an industry lobbying group. "It's going to be a challenging time for our industry, no question."

Kerekes said the industry will continue to promote nuclear power as vital for American energy independence and for moving to a "low-carbon future."

## **Japan Nuclear Fears Ease As Power Is Restored (USAT)**

By Dan Vergano, Usa Today

USA Today, March 23, 2011

Japan's nuclear plant crisis steadied Tuesday, with power returning to control rooms at its imperiled reactors, while seawater in a discharge canal showed elevated radiation readings.

The most difficult news from the March 11 earthquake and tsunami continued to be the human toll. Japan's National Police Agency said Wednesday more than 9,300 are dead, with nearly 13,800 people missing.

A police spokesman from one of the of the hardest-hit prefectures, Miyagi, estimates that the deaths will top 15,000 in that region alone. Police in other devastated areas declined to estimate eventual tolls, but said the confirmed deaths in their areas already number nearly 3,700.

More than 200,000 people are displaced and living in shelters.

On top of that, the Japanese continue to live with aftershocks of the magnitude-9.0 quake. There were two magnitude-6.6 quakes on Tuesday in a country still nervously watching developments at the crippled Fukushima Dai-ichi Nuclear Power Station.

"I am cautiously optimistic we are out of danger from the reactors," said nuclear engineer Bill Martin of the University of Michigan.

Of the nuclear plant's six reactors, seawater pumped through backup generators has kept temperatures stable at three that were operational when the quake struck.

Pumping trucks, including construction vehicles capable of shooting 50 tons of water an hour to precise locations, have helped keep up water levels in several pools holding dangerously hot spent fuel rods. "Those pools are now the problem," Martin says.

Uncovered or overheated spent fuel rods in the pools, the sites of fires and smoke for the last week, likely have contributed to elevated radiation readings inside and outside the plant, according to the International Atomic Energy Agency.

Now, modeling by Austria's Central Institute for Meteorology and Geodynamics, first reported by Nature magazine, suggests that the Japanese nuclear accident has released 20% as much radioactive iodine and 50% as much radioactive cesium — most of it blown to sea — as was released in Russia's 1986 Chernobyl accident.

Because soil radiation greatly exceeds legal limits, the government early today added broccoli to the list of tainted vegetables and milk barred from distribution from the plant region. The government said that radiation levels in the region were still below those posing any immediate threat to human health.

Seawater pumped into the reactors boils off as it cools the partly melted fuel rods. Some of it was vented as steam that carried radioactive iodine — a concern because it can trigger thyroid cancer unless precautions are taken. Engineers released the steam to relieve pressure on the three steel vessels containing the reactor rods.

Runoff from seawater used to cool the spent fuel rod pools likely also contributed to contamination inside and outside the plant, Martin and others suggest. The Health Ministry ordered increased seawater and seafood monitoring in response to radioactive iodine and cesium found in ocean water near the complex.

"They are not really out of the woods yet," said nuclear engineer David Lochbaum of the Union of Concerned Scientists, an industry watchdog group.

As a next step, plant engineers hope to restart cooling pumps at the Unit 3 reactor thought to be damaged in a March 14 hydrogen gas explosion. Restarting cooling could also lower temperatures at the spent fuel pool there. Tokyo Electric Power warned that workers still need to check all equipment for damage first before switching on the cooling systems in reactor units.

## **Japan Ignored Warning Of Nuclear Vulnerability (WSJ)**

By Norihiko Shirouzu And Peter Landers

Wall Street Journal, March 23, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

## **Biden, Clinton Salute Japan Resilience (AFP)**

AFP, March 23, 2011

WASHINGTON (AFP) – US Vice President Joe Biden and Secretary of State Hillary Clinton on Tuesday voiced admiration for the response of ordinary Japanese to the major earthquake as they pledged continued US support.

Biden and Clinton paid separate visits to the Japanese embassy in Washington to sign a condolence book for the thousands of victims of the country's most powerful ever earthquake. President Barack Obama signed the book last week.

After spending several minutes writing his response, Biden said that the world has been impressed by the "resolve of the Japanese people, the orderly way in which they are dealing with" the crisis.

"I've traveled around the world and I promise you the whole world is looking at the courage, bravery and the resolve being demonstrated by ordinary people," Biden told reporters.

On her own visit, Clinton said it was "our honor to stand with Japan," pointing to Tokyo's past assistance to other nations in distress.

"This has been an unprecedented disaster, but it has provoked an unprecedented show of resilience by the Japanese people and a pledge of cooperation and friendship from the American people," Clinton said.

"We will be with Japan and the people of Japan as you recover and rebuild, and we will stand with you in the months and years ahead," she said.

The United States, which stations nearly 50,000 troops in Japan, mobilized around a dozen ships to bring in relief after the March 11 disaster.

More than 21,000 people are confirmed dead or listed as missing after the 9.0-magnitude quake, which unleashed a giant tsunami that swept away entire towns.

## **Informational Uncertainty In The Wake Of Japan's Nuclear Crisis (CounterPunch)**

### **Downplaying Disaster**

By Gregory Button

Counter Punch, March 23, 2011

"In a disaster of this magnitude timely and accurate information is of utmost importance." Jim Ricco, nuclear expert. [1]

In recent days the Japanese government and Tokyo Electric Power have come under increasing criticism for their handling of the nuclear crisis at the Fukushima Daiichi nuclear plant. Officials from both parties are under suspicion of withholding or manipulating vital information about the tragedy. After several days of incomplete and contradictory information, international nuclear experts, the international press, even the Japanese press along with some diplomatic officials have lashed out at both parties for their failure to provide sufficient information. [2] In turn, Japan's prime minister, no doubt in an attempt to point the finger in another direction, attacked the power company for not informing his government about explosions at the plant that occurred earlier last week. Yurika Ayukawa, a Chiba University professor of the environment explained, "there is no transparency about the information they are saying." [3] Uncertainty and cynical speculation about authorities' motives have become of central concern to many at home and abroad.

Recently, Gregory Jaczko, the chairman of the United States Nuclear Regulatory Commission, dispelled any doubts that there were grave inconsistencies in the way in which the Japanese government was representing the seriousness of the event when he gave a grimmer appraisal posed by the threat than that of the Japanese government. On the heels of this searing criticism came the news that levels of radiation exceeding government standards of safety had been detected in spinach and milk ninety miles from the Fukushima plant.

Eight days after the nuclear emergency began a senior official in the Japanese government stated that government officials should have admitted the severity of the crisis much earlier. [4] Whether this admission will change the government's ongoing response remains to be seen. Even if there is a serious sea change in the government's crisis communication policies such a maneuver can hardly undo all the unnecessary harm that has been inflicted by the information distortion to date. If the historical record of the behavior of officials in previous disasters is any indicator, the odds are this mea culpa may not prove to be long-lived.

Governments and corporations often downplay a disaster and provide the public with overly optimistic accounts of the severity of an event. In order to avoid public scrutiny and to safe guard corporate interests (in this case the nuclear power industry) governments often withhold vital information not only from its citizens but also from outside experts and the international community.

In the days, weeks and even months that follows in the wake of a disaster people feel uncertain about real and perceived risks. Information about the nature and the extent of these risks is incomplete and typically conflicting. The parties involved in the disaster, as well as the media, public agencies, and non-profits release a cacophony of communications that the afflicted population and the general public often sees as conflicting and confusing.

This sense of confusion is accentuated when, as in the present nuclear crisis in Japan, knowledge is withheld and uncertainty is amplified. In such instances both disaster victims and outside experts have to struggle to obtain credible sources of information. A common phrase that is often heard in such circumstances and has been re-iterated in the current nuclear nightmare, is "It is hard to know who to believe." For those living in close proximity to the affected area, the availability of reliable

information about potential threats is critical in order for people to make accurate appraisals of how to respond to environmental threats.

The kind of informational uncertainty that has abounded in Japan in recent days generates public discourse about not only who is to blame for perceived threats and actual harm, but also who is responsible for an effective and timely remediation. It also raises questions about the severity of the event and the potential long-term harm that may ensue particularly in the case of the current crisis. Moreover, the informational vacuum that exists in the wake of a disaster, let alone a major catastrophe, can produce harmful rumors and misinformation that can obstruct a timely response. One of the major negative effects of this uncertainty and confusion is that it can seriously impede an effective and timely response to a disaster. In short, critical hours and even days can be lost in the resulting misinformation and confusion.

Science and technology are often involved in disasters especially technological ones like the one unfolding at the Fukushima nuclear reactors in Japan. Citizens commonly turn instinctively to scientists for answers, as do politicians and corporations. While the media seeks immediate answers to meet daily deadlines and the public demands instant answers, science by virtue of its methodologically rigorous approach cannot readily respond to these demands. Science can be a slow and painstaking process that often cannot produce the sound bites the media craves or the reassurances and insights the public demands. The situation is worsened when information is withheld not only from the media and the public but from the larger scientific community as well. The present crisis in Japan is unfortunately a supreme example of this type of obfuscation.

Usually such a vortex of conflicting information and lack of transparency generates a climate of controversy among scientists and the lay public. Lay people in particular are often confused by the ambiguous or contradictory statements made by some experts and puzzled about how to make sense of the ambiguities. In the present instance the media and outside experts are just as puzzled.

In this vortex of uncertainty and lack of knowledge people can become skeptical about the reliability of scientific evidence. Some suddenly see science as lacking in certainty and incapable of resolving ambiguity. In the process, science's systematic invincibility is called into question and its monopoly on truth is challenged. Unfortunately, when officials behave as they have in the wake of this disaster, their behavior undermines the public's faith in the virtues of science.

At times, science and engineering are seen as being the cause of the disasters such as in the case of the nuclear accident at Three Mile Island or the catastrophic meltdown in Chernobyl, or the chemical explosion in Bhopal. As a result, some individuals view science as too narrowly focused to undertake a holistic approach to solve their dilemmas or adequately address the ontological challenges that they face.

In the early days of the crisis the Japanese government reassured their nation that they were in no danger of experiencing a major nuclear disaster and downplayed any health or environmental risks. The Tokyo Electric Power issued opaque statements, which described the ongoing events in extremely sparse, technical language totally de-contextualized from the everyday lives of the citizens whose lives have been placed at risk.

These early statements by both the government and the power company failed to disclose the true nature of the situation. Their reports were conflicting and ambiguous to the Japanese public, the media, and international nuclear experts. In fact, according to at least one report, nuclear experts have doubted the accuracy of the official information that has been issued throughout the crisis. [4] The credibility of the government's statements has also been undermined by reports that they had previously downplayed and covered up previous, less serious, nuclear events.

The Guardian reported WikiLeaks released a diplomatic cable in which "a high profile" Japanese politician told US diplomats that the Japanese government's ministry responsible for nuclear power has been "covering up nuclear accidents and obscuring the true costs and problems associated with the nuclear industry." [6]

Examples of what have been termed "hidden episodes" include incidents reported in the New York Times. According to the Times, a fire and small amount of radiation leaked at a nuclear plant located in Kashiwazaki City. Reportedly, Tokyo Electric Power built the world's largest nuclear power plant, however unknowingly, on an active seismic fault according to an investigative report that came out in the wake of an accident. [7]

Paul Dorfman, a member of a now defunct UK advisory committee, expressed concern when he declared, "we are seeing a clear pattern of secrecy and denial" in commenting on the present crisis. According to Dorfman, "There is a profound uncertainty about the impact of the disaster. [8]

Aileen Mioko Smith, who once lived near Three Mile Island and is now a member of an environmental organization in Tokyo underscored these statements by saying, "People aren't getting the information they need." [9]

Similar concerns were echoed by Kenneth Bergeron, a physicist and former Sandia Scientist, that industry assurances stressing that the situation was under control flew in the face of the fact that, "we don't know what is going on." [10]

All of which suggests that the optimistic appraisals by the government were not based so much on fact as a public relations campaign (and no doubt a certain degree of confusion) to downplay uncertainty and reassure the public and the international community.

In a press conference sponsored by several groups, Robert Alverz, who served at one time as a Senior Policy Advisor to the US Department of Energy and a deputy Assistant secretary for National Security and the Environment, galvanized Bergeron's claim by saying, "There is a lot we don't know." In another words what these men are saying is that there isn't sufficient scientific evidence to support the downplaying of potential harm. [11]

Representative of the uncertainty and confusion surrounding the crisis is one of the updates issued Tokyo Electric Power: "Unclear if radiation was released;" terse statements such as this fail to disclose much useful information. Moreover, when speaking of potential health threats little has been said about all important topics like ignoring the health risks to low level exposure, exposure rates and cumulative risk. In short, the nuances of public health risks are glossed over and given a fuzzy presentation that fails to fully inform those especially at risk.

Indeed, thus far there have been conflicting and contradictory reports issued by the government, the power company and others making it extremely difficult to accurately assess the exact threat of radiation releases let alone what ever else may have been happening at the Fukushima Daiichi plant. Questions have been raised about the water levels in the various cooling chambers as well as questions about whether there has been damage to the containment vessels or if so, how much. Questions have also been raised about the source of some radioactive releases, the amounts of the releases, and of late, whether one of the reactors sustained structural damage prior to the present crisis during the catastrophic earthquake. These and many other questions remain unsolved in the minds of both experts and citizens alike.

Lack of transparency and the downplaying of events and the ensuing uncertainty is not only a legacy of previous disasters (e.g. Love Canal, the TVA ash spill, the BP Gulf oil spill and countless others) but the world's two nuclear disasters. Industry authorities downplayed the partial meltdown at Three Mile Island (TMI/1979) much to the chagrin of many Pennsylvania residents and their governor. Governor Thornburgh and his staff were frustrated in their attempts to reliable information from Metropolitan Edison, which tended to smooth over inconsistencies over the facts surrounding the accident. Evaluations in the wake of the event found that despite an abundance of uncertainties, the utility company adopted a public relations strategy that tended to over look the uncertainties and create more of an air of certainty.

The degree of uncertainty that existed is best characterized by a statement made by the NRC chairman, Joseph Henrie, "We are operating almost totally in the blind...its like a couple of blind men staggering around trying to make decisions. [12] Although, we must be careful to acknowledge the over-all specificities of each case are vastly different in some ways the ambiguity of the situation surrounding TMI bares an uncanny relation to the present situation in Japan and to a lesser degree to Chernobyl.

While there was also a withholding of information and a considerable uncertainty surrounding the terrible tragedy in Chernobyl there are some extreme differences.

Most notably, in direct contrast to both TMI and recent events in Japan, the Soviet Union did not acknowledge the world's worst nuclear accident until almost three days after a series of explosions destroyed one of the reactors in Chernobyl. Nor did they evacuate the nearby town residents until almost a full day after the accident. Their acknowledgement of the catastrophe only came as the result of a radioactive plume triggered alarms at a nuclear reactor in Sweden three days after the initial explosion.

While the US government was extremely critical of the Soviet Union's lack of transparency, the US government itself tried to obstruct the access of information about the world's worst nuclear disaster by attempting to withhold information that might be deemed harmful to the US nuclear industry. For example, both the US Department of Energy and the Nuclear Regulatory Commission imposed a gag order on their employees and contractors as well as scientists at national labs. In an attempt to limit public information and avoid any comparison between Soviet Nuclear power plants and US reactors, strict instructions were issued to the above personnel to avoid press inquiries about Chernobyl or to provide only simple background information. [13] To some observers this response came as no surprise given the US government's decades long downplaying of the radioactive legacies of the cold war [14].

In the wake of a disaster, governments and corporations can play a decisive role in framing the event and creating an "official" narrative. How such efforts interpret, shape and dispense knowledge and sometimes produce additional uncertainty is crucial. The ways in which knowledge is produced, or withheld, in an atmosphere of pervasive ambiguity is critical to how, and to what degree, a disaster ultimately affects both people and the environment. No matter what the nature of the institutional motive to downplay such threats the primary effect is the same: it not only denies those who are disproportionately affected by the disaster the ability to accurately appraise the threats and adopt the effective coping strategies it also seriously thwarts the ability

to arrest the threats and successfully remedy the problem. In the case of the present day nuclear crisis in Japan the stakes couldn't be higher.

It is absolutely imperative that Japanese officials become more transparent in their crisis communication. It is equally imperative, as this present crisis makes clear, that officials around the world realize the severe harm that can be inflicted by the obfuscation and distortion of critical information in the wake of catastrophe.

Gregory Button is a faculty member at the University of Tennessee. He has studied numerous disasters during the last three decades including the nuclear accidents at Three Mile Island and Chernobyl. His recent book is titled, *Disaster Culture: Knowledge and Uncertainty in the Wake of Human and Environmental Catastrophe* (Left Coast Press). He will be speaking at Town Hall Seattle on April 1, 2011. See the Town Hall Seattle website for additional information. He can be reached at: gregoryvbutton@mac.com

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## **Australia Weighs Nuclear Push After Japan Crisis (REU)**

By Rob Taylor

Reuters, March 23, 2011

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

## **German Panels To Discuss Nuclear-Safety Issues (WSJ)**

By Jan Hromadko And Bernd Radowitz

Wall Street Journal, March 23, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

## **Italy To Defer Nuclear Energy's Return For A Year (WSJ)**

By Carlo Renda And Liam Moloney

Wall Street Journal, March 23, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

## **Italy Plans One-Year Pause On Nuclear Power (NYT/REU)**

Reuters, March 23, 2011

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

## **Canada Nuclear Plan Gets Environmental OK (REU)**

Reuters, March 23, 2011

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

## **China To Build Nuclear Plant Using Fourth-Generation Technology In April (BLOOM)**

By Dinakar Sethuraman And Rakteem Katakey

Bloomberg News, March 23, 2011

China will start building a nuclear power plant next month using fourth-generation technology that may be less susceptible to meltdown than Japan's damaged Fukushima Dai-Ichi plant.

The "world's first high-temperature, gas-cooled reactor" will be installed at Rongcheng in Shandong province, Cui Shaozhang, deputy general manager at Huaneng Nuclear Power Development Co., a unit of China Huaneng Group Corp., the nation's largest power group, said in an interview yesterday in Singapore.

"There are differences between the Japanese and Chinese reactors," Cui said. "Japan's Fukushima plant was using old technology while Chinese reactors are more advanced."

Japan is trying to prevent a meltdown at Fukushima, where the oldest reactor started operating in 1971, after cooling systems were knocked out by a 9.0-magnitude earthquake and tsunami on March 11.

The Rongcheng plant will use helium, an inert gas, in its cooling system, and reactor cores will be able to withstand temperatures exceeding 1,600 degrees Celsius (2,912 degrees Fahrenheit) for several hundred hours without melting down, China Business News said this week.

"The Chinese government has encouraged us with the pre-condition of safety and efficiency," Cui said, standing next to a model of the high-temperature reactor.

China, planning to build more nuclear reactors than any other country, said on March 16 it suspended approval of all new atomic projects until a safety review is carried out.

China Huaneng, China Nuclear Engineering Corp. and Tsinghua University are joint investors in the 200-megawatt Rongcheng demonstration project, according to Huaneng's brochure. China National Nuclear Corp., the country's biggest atomic plant builder, last July reported a successful test of an experimental reactor using fourth-generation technology.

China started operating its first commercial nuclear station in 1994. It currently has 14 reactors in operation, 26 under construction and 28 planned, according to data on the World Nuclear Association's website.

The nation's nuclear power capacity may reach 40 gigawatts by 2015 and exceed 70 gigawatts by 2020, Han Wenke, head of energy research at the NDRC, said last June. China had 10.82 gigawatts of nuclear power capacity at the end of 2010, the state-owned China Electricity Council said in February.

China Huaneng Group aims to produce about 35 percent of its electricity using cleaner technology by 2020 to cut pollution, President Cao Peixi said last March. The company plans to reduce coal consumption per kilowatt-hour of electricity by about 10 percent to 304 grams by 2020, he said.

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To contact the editor responsible for this story: Clyde Russell at [crussell7@bloomberg.net](mailto:crussell7@bloomberg.net)

## **Turkey Seizes Rifles On Grounded Iranian Plane (AFP)**

By Mahmut Bozarslan

AFP, March 23, 2011

DIYARBAKIR, Turkey (AFP) – The Turkish authorities have seized rifles on a Syria-bound Iranian plane, grounded since the weekend, and questioned its seven-man crew, police and judicial sources said Tuesday.

The cargo plane, a civilian Ilyushin, was ordered to land in Diyarbakir, in Turkey's mainly Kurdish southeast, on Saturday night on suspicion that it had military or illicit cargo on board.

The plane had declared a cargo of spare car parts, but the inspection resulted also in the discovery of a box containing automatic rifles, a police source told AFP, without providing further details on the guns.

The crew was taken to a police station for questioning and argued that the weapons were on board as part of routine security measures, declining to give additional information, the source said.

An "administrative" probe has been launched to see whether the presence of weapons on board complied with international rules, a judicial official said, adding that no criminal charges were to be pressed against the crew.

The authorities confiscated the weapons and were expected to allow the plane to take off en route to Syria.

A Turkish foreign ministry official described the search of the plane as a "routine" procedure under "an overflight permission with the condition of technical landing." He would not give other details.

The Iranian embassy in Ankara declined to comment.

The private Dogan news agency had reported earlier that the crew was detained following the discovery of weapons and ammunition on board.

Police officers unloaded the aircraft's entire cargo, an AFP reporter on the scene saw Monday night.

The Turkish authorities forced another Syrian-bound Iranian plane to land in Diyarbakir on March 16.

After a search lasting several hours, the plane was found to be carrying 150 tonnes of food but "no material contrary to international standards," security sources said.

The Turkish daily Aksam reported Tuesday that the planes were forced to land on a request from the United States on suspicion that they carried "nuclear material and weapons".

The UN International Atomic Energy Agency has been probing allegations since 2008 that Syria has been building an undeclared reactor at a remote desert site called Dair Alzour, which was bombed by Israeli planes in September 2007.

The UN Security Council has imposed sanctions, including an arms embargo, on Iran over its refusal to halt its uranium enrichment programme which the West suspects masks a drive to build nuclear weapons.



# NUCLEAR REGULATORY COMMISSION NEWS CLIPS

WEDNESDAY, MARCH 23, 2011 7:00 AM EDT

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

## TODAY'S EDITION

### NRC News:

For Cuomo And Indian Point, New Round In A Long Fight (NYT) .....	2	Discharge Permit To Be Renewed (KEENE) .....	16
New York Nuke Plant Seismic Review Gets Top Priority (REU) ..	3	NRC: Vermont Yankee Nuclear Power Plant 'Good To Go' For	
Federal Nuclear Officials Pledge To Make Indian Point		20 More Years (FORBES).....	17
Assesment Top Priority (NY1).....	3	Staff Finds No Reason To Shut Down Any US Reactors And No	
Indian Point Site 'Top Priority' (ATU) .....	4	US Risk From Japanese Radiation (CWIRE) .....	17
NRC Will Make Indian Point Safety Review A "Top Priority"		Safety Upgrades At US Nuke Plants Worried UN Agency (REU).....	19
(WXXI) .....	5	US Court Questions Oyster Creek Nuclear License After Japan	
Indian Point Target Of Quake Review (WSJ).....	5	Disaster (NEWARKSL).....	19
Indian Point Tops Quake-risk List (WESTJN).....	6	Court To NRC: How Does Japan Impact Oyster Creek License	
Indian Point Has Its Bases Covered, Entergy Officials Tell		Renewal? (ASBPP) .....	20
Westchester Lawmakers (MIDHUD).....	6	Japan Disaster Spurs Court To Revisit Safety Of Exelon-owned	
Indian Point Safe, Radiation Good For You, Says Area Man:		Nuclear Plant (CHIT) .....	20
Gothamist (GOTHAMIST) .....	7	Appellate Court Wants More Information About Oyster Creek,	
Indian Point Power Plant Review (WBNG) .....	8	Tsunamis And Earthquakes (PATCH) .....	21
New York Nuclear Plant To Receive 'Top Priority' In Safety		Appeals Court Considers Site For Nuclear Disposal (AP).....	22
Review (CNN).....	8	Obama Lacks Authority To Shutter Yucca Site, Court Told	
Indian Point Plant Safe, Japan Accident Unlikely, NRC Says		(MCT).....	23
(BLOOM) .....	8	Appeals Court Hints Lawsuit Over Yucca Nuclear Waste	
New York Officials Meet With Nuclear Regulatory Commission		Repository May Be Premature (NYT) .....	23
About Indian Point (WABC).....	9	Yucca Mountain Fate Argued In Court (LVSRJ) .....	24
Indian Point Owner Says New York Reactor Is Safe (AP).....	9	Mississippi Gov. Haley Barbour Makes Early Swing Through	
Entergy: 'Indian Point Is Not Susceptible' To Japan-type		Nevada As He Contemplates Run For President (LVS)....	24
Catastrophe (WESTJN).....	10	Mississippi Governor Explores Presidential Bid In Nevada	
Indian Point Review A Top Priority For Federal Regulators		(LVSRJ) .....	25
(NRPTC) .....	10	Last word in nuclear safety: Yucca (RALEIGH) .....	25
NRC, NY State Will Review Downstate Nuclear Plants' Ability		Reactors' Spent Fuel Pools: Serious Safety, Security Hazards	
To Resist Earthquakes (SYPS).....	11	(BELLH) .....	26
Cuomo: Indian Point Now 'top Priority' For NRC (ATU).....	11	AP IMPACT: US Spent-fuel Storage Sites Are Packed (AP).....	27
Gov. Cuomo: Feds To Make Indian Point Priority #1: UPDATED		US Nuclear Waste Problem Gains New Scrutiny (LAT) .....	29
(NTDN).....	13	Special Report: Fuel Storage, Safety Issues Vexed Japan Plant	
NRC OK's 20-year Extension For Vt. Nuclear Plant (BOS).....	14	(NYT/REU).....	31
Vt. Lawmakers Want NRC To Again Review Vt. Yankee Safety		Mass. Officials Press NRC On Nuclear Waste, Storage Issues	
(WCAX).....	14	(WALPOLE).....	31
The Pros And Cons Of Keeping Vermont's Nuclear Plant Open		Alexander Says Disaster In Japan Will Sharpen Focus On	
(WBUR).....	14	Nuclear Safety (KINGPRT) .....	31
Beyond Nuclear Decries Reckless Decision Of Nuclear		Senator Graham Tours Oconee Nuclear (WYFF) .....	32
Regulatory Commission To Give Vermont Yankee		Graham Uses Tour To Push Nuke Power (TSSC) .....	32
Reactor 20 More Years To Operate (Common Dreams) ..	15	Sen. Graham: 'I Believe In Nuclear Power' (ADERSN) .....	33
		Inside Oconee Nuclear: How Safe Is Upstate's Nuclear Power	
		Plant? (WSPA).....	34

Nuclear Industry Works To Sustain Rebirth (GRNVN) .....	35	OVERNIGHT ENERGY: Get Ready For More Chu (HILL).....	50
NRG Casts Doubt On Reactor Plans (WSJ).....	36	Nuclear Power Loses Support In New Poll (NYT).....	52
South Texas Nuke Plant Expansion Faces Delays (HOUBIZ) ...	36	Support For Nuclear Power Is Partisan (POLITCO) .....	53
NRG CEO:Slashing Loan Guarantees Would Cripple Nuclear Industry (WSJ).....	36	Poll: Japanese Crisis Cuts US Nuke Energy Support (HILL) .....	53
TVA Execs Discuss US Reactor Safeguards As Japan Struggles With Nuclear Crisis After Quake (AP).....	36	Nuclear Power In US: Public Support Plummetts In Wake Of Fukushima Crisis (CSM) .....	53
TVA Officials Confident In Its Nuclear Plants (SDS).....	37	US Public Support For More Nuclear Power Slips (REU).....	54
TVA Addresses Brown's Ferry Concerns (WAAY).....	38	US Looks To Safeguard Medical Isotopes From Terrorists (NATJO).....	54
NRC Looks At Lubrication Concern At Nuclear Plant (AP).....	38	H Canyon Might Remain Open (AUGC) .....	55
NRC Conducts Special Probe In Callaway (AP).....	38	144 Get Layoff Notices At Mission Support Alliance (TRICITYH)55	
Durbin, Kirk To Host Forum On Ill. Nuclear Safety (AP).....	39	Hanford official's talk to review Japan impacts (TRICITYH) .....	56
Nuclear Illinois Helped Shape Obama View On Energy In Dealings With Exelon (BLOOM).....	40	Hanford Whistle Blower Case More Closely Linked With DOE (NPR) .....	56
Critics Cite 'Severe Seismic Risk' At California Nuclear Power Plants (CSM) .....	41	Global Crises Overshadow Obama's 2011 Agenda (USAT) .....	57
California Lawmakers Push For New Seismic Safety Studies Of Nuclear Power Plants (SCPR) .....	41	US Senate Panel To Weigh Cybercrime Costs (AFP).....	58
Central Coast Senator Asks PG&E To Suspend Nuclear License-renewal Request (VENCSTR).....	42	<b>International Nuclear News:</b>	
Manufacturer Reports Potential Safety Issue At Browns Ferry (WAFF) .....	43	Power Lines Up In Progress At Japan Nuclear Plant (AP) .....	58
TVA Officials Keeping Close Eye On Japan's Nuclear Crisis (WAFF) .....	44	Electricity Connected To Daiichi Reactors As Japanese Evacuees Struggle For Normalcy (WP) .....	59
Energy Company Babcock & Wilcox May Help With Japan Nuclear Power Plants (WP/AP).....	45	Japan Nuclear Fears Ease As Power Is Restored (USAT) .....	61
Babcock & Wilcox To Support Japan Relief (CLTBIZJ).....	45	Japan Ignored Warning Of Nuclear Vulnerability (WSJ).....	62
Babcock & Wilcox May Help With Japan Power Plants (VICTORA) .....	45	Biden, Clinton Salute Japan Resilience (AFP).....	62
B&W In Talks With Toshiba Over Fukushima Daiichi Nuke Plant (INTLBIZ) .....	45	Informational Uncertainty In The Wake Of Japan's Nuclear Crisis (CounterPunch) .....	62
Meltdown-or-Not Future For Nuclear Fuel Seen In Refrigerator- Sized Reactor (BLOOM) .....	46	Australia Weighs Nuclear Push After Japan Crisis (REU).....	65
NRC Proposes To Amend Licensing, Inspection, Yearly Fees Rule (EGYBUS).....	49	German Panels To Discuss Nuclear-Safety Issues (WSJ).....	65
NEWSMAKER - Problem Solver At Helm As US Faces Test On Nuclear (REU) .....	49	Italy To Defer Nuclear Energy's Return For A Year (WSJ).....	66
		Italy Plans One-Year Pause On Nuclear Power (NYT/REU).....	66
		Canada Nuclear Plan Gets Environmental OK (REU).....	66
		China To Build Nuclear Plant Using Fourth-Generation Technology In April (BLOOM) .....	66
		Turkey Seizes Rifles On Grounded Iranian Plane (AFP).....	66

## **NRC NEWS:**

### **For Cuomo And Indian Point, New Round In A Long Fight (NYT)**

By Thomas Kaplan

New York Times, March 23, 2011

Two months after the Sept. 11 terrorist attacks, Andrew M. Cuomo signed a petition urging that the Indian Point nuclear power complex in Westchester County be shut down for safety reasons.

In 2002, while campaigning for governor, he convened a news conference in White Plains to call for the plant's immediate closing, and he criticized Gov. George E. Pataki for not taking seriously the vulnerability of the facility to a terrorist attack.

And then as state attorney general, Mr. Cuomo lobbied federal regulators not to relicense the site, calling it a "catastrophe waiting to happen" in part because of questions about its susceptibility to a powerful earthquake.

Now, in the aftermath of the earthquake and the tsunami that devastated Japan, worries about the safety of Indian Point have resurfaced. And Mr. Cuomo is again vowing to push for the permanent closing of the complex, this time as governor — a far loftier perch.

Officials with the Nuclear Regulatory Commission said Tuesday that they would accelerate a planned review of Indian Point and would allow state officials to be part of the inquiry. The announcement came after Lt. Gov. Robert J. Duffy met with regulators at the commission's headquarters in Maryland earlier in the day to express the Cuomo administration's concerns.

"This is not a new situation; this is not a new issue," Mr. Cuomo said at a news conference at the State Capitol after Mr. Duffy returned. "It is imperative that we get it right, and that's why we brought the urgency to the matter."

The two reactors at Indian Point, which sit on the Hudson River, are set to have their licenses extended in 2013 and 2015. The state attorney general, Eric T. Schneiderman, asked regulators on Friday to include seismic risk and other safety issues when they consider whether the plant should be relicensed for 20 years.

The N.R.C. had already planned a separate review of earthquake vulnerabilities at 27 nuclear plants, including Indian Point, and the commission agreed on Tuesday to make Indian Point its first priority in that review and to allow state experts to participate in the inspection. The chairman of the commission, Gregory B. Jaczko, also agreed to visit Indian Point.

The company that owns the plant, Entergy, told officials in Westchester on Monday that Indian Point had been designed to withstand an earthquake much stronger than any recorded in the region.

A spokesman for Entergy said Tuesday that the company welcomed the regulatory commission's review and would assist in the process.

"All citizens of New York need to have access to the pertinent facts regarding Indian Point," the spokesman, James F. Steets, said in a statement. "We strongly believe that knowing the facts will answer the public's questions and will also clearly demonstrate that this facility is safe — designed with a margin of safety beyond the strongest earthquake anticipated in the area."

For Mr. Cuomo, the new discussion about Indian Point represents the latest chapter in a family history of grappling with nuclear power. The concerns he has expressed about Indian Point, particularly the possibility of trying to evacuate millions of residents around the facility, can be traced back decades: his father, former Gov. Mario M. Cuomo, brokered a deal to shut down the Shoreham nuclear plant on Long Island in 1989 because of similar worries.

When he ran for governor last year, Mr. Cuomo said in a policy book that as governor, he would seek to "find alternative sources of energy generation to replace Indian Point nuclear facility because it is too dangerous to continue operating."

Indian Point generates 2,000 megawatts of power, supplying about 30 percent of the electricity used daily by New York City and Westchester.

At the Capitol on Tuesday, Mr. Cuomo read aloud a letter he sent to federal regulators expressing concerns over Indian Point — and then, to some theatrical effect, revealed that the letter was from 2007.

Then, as attorney general, Mr. Cuomo said Indian Point should be shut down "now." He affirmed his concerns on Tuesday, saying "the plant is risky, and the plant should not operate."

But Mr. Cuomo also said that decisions about the plant's future should be made "based on sound information, not on emotion." He acknowledged that there would be no easy solutions on how to replace the energy the plant produces if it were to close.

That has been a major question raised by people who favor keeping the plant open, including State Senator George D. Maziarz, Republican of Niagara County and the chairman of the Energy and Telecommunications Committee.

"If Indian Point is closed, residential and business energy costs are going to rise dramatically in downstate New York," Senator Maziarz said. "It is going to drive jobs out of New York. I think it's over all a very negative thing."

Mr. Cuomo dismissed those concerns on Tuesday. "I continue to reject the position, 'Well, it's 2,000 megawatts of power; we need the power; who cares what the risk is?'" he said.

## **New York Nuke Plant Seismic Review Gets Top Priority (REU)**

By Dan Wiessner

[Reuters](#), March 23, 2011

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

## **Federal Nuclear Officials Pledge To Make Indian Point Assessment Top Priority (NY1)**

[NY1 News](#), March 23, 2011

Governor Andrew Cuomo announced Tuesday that the US Nuclear Regulatory Commission has pledged to make reviewing Indian Point power plant's safety a top priority, following a meeting with state officials earlier in the day.

The NRC is reviewing the seismic risk at 27 nuclear plants throughout the country in the wake of the meltdown at a Japanese nuclear plant after the nation's massive earthquake.

Cuomo says that as a result of the meeting between Lieutenant Governor Robert Duffy and Director of State Operations Howard Glaser and NRC officials in Maryland, the commission has agreed to share federal data of the assessment with state technical experts and include state experts as part of the on-site inspection team.

"It is essential that the NRC move quickly to answer the significant and long-standing safety questions surrounding Indian Point," Cuomo said in a statement. "We appreciate the NRC agreeing to move swiftly and we look forward to working closely with them on this issue to protect the health and safety of New Yorkers."

The plant, which is located about 25 miles from the city in Westchester County, provides about 30 percent of the electricity to New York City and Westchester and employs about 1,700 people.

Entergy Corp – which runs the plant – says in a statement that it welcomes Cuomo's call for a review and is willing to assist the NRC.

The company also says the review will help the public realize that the plant can withstand a magnitude 6.0 earthquake. Indian Point sits on a fault line, but quakes along that fault are rare.

NRC officials say the odds of there being an earthquake that could endanger the facility and surrounding area is one in 13,000.

Entergy also says the plant's back-up generators are on high ground, which are safe from a tsunami that could swell the Hudson River.

Entergy took out a full page advertisement in the New York Times today, saying it welcomes the governor's call for a review of the plant. The company says, "We strongly believe knowing the facts will answer the public's questions and will also clearly demonstrate that the facility is safe."

New Yorkers who we spoke to about the plant were split about its dangers.

"I think we're all in a heightened sensitivity about the issue and, yes, it has been concerning me more recently because of the recent events," said one New Yorker.

"Nuclear power is the safest power there is," said another. "The fears of radiation are ridiculous. You're radioactive; I'm radioactive. Tiny doses of radioactivity are really helpful they've discovered."

Indian Point is one of six nuclear plants in the state.

## **Indian Point Site 'Top Priority' (ATU)**

By Casey Seiler

Albany (NY) Times Union, March 23, 2011

ALBANY -- The US Nuclear Regulatory Commission will make the Indian Point nuclear facility's potential vulnerability to an earthquake its "top priority," according to NRC officials who met Tuesday with Lt. Gov. Robert Duffy and state Director of Operations Howard Glaser.

In the two weeks since an earthquake and tsunami critically damaged Japan's Fukushima Daiichi power plant, Gov. Andrew Cuomo's administration has expressed renewed concern about Indian Point. The Westchester County power plant sits on the shore of the Hudson River in proximity to New York City as well as the Ramapo fault zone that extends into New Jersey and Pennsylvania.

In a Tuesday afternoon news conference, Cuomo said the NRC had pegged the odds of damage to one of Indian Point's reactors after a quake at 1 in 13,000. Entergy Nuclear, the plant's operator, insists the facility could withstand a quake up to 100 times worse than any previously experienced in the region, and welcomed the federal and state scrutiny.

In what Cuomo said would be an "expeditious" process, the NRC will share federal data on seismic risk at the plant with New York experts, and state personnel would join the commission's staff -- including Chair Greg Jaczko -- for on-site inspection of the facility.

In the wake of the crisis in Japan, the NRC has just begun a 90-day review of US plant safety.

"This is not the first time that we've had issues with the Indian Point power plant," Cuomo said. "... My position has been for a long time that the plant is risky and the plant should not operate."

The governor read from a 2007 letter he sent in his capacity as attorney general that called the NRC's decision not to consider seismic issues or potential terrorist threats as part of its licensing process "dangerously irresponsible."

That letter was prompted by an earthquake in Japan that had briefly imperiled a nuclear power plant.

The NRC is slated to relicense one of Indian Point's two operating reactors in 2013, and while the state has no say in the process, Cuomo said the relicensing should look at more than just the integrity of the plant itself.

"The problem with this plant – it's different than a basic or generic conversation about nuclear power," he said.

Cuomo pointed out that the plant's location has prompted related worries about the difficulty of evacuation. He noted the US government was warning its citizens in Japan to stay at least 50 miles from the wounded Fukushima plant. If that zone of exclusion were laid over Indian Point, "you're talking all of New York City, you're talking about parts of Connecticut, you're talking about Long Island, you're talking about New Jersey," he said.

"By some estimates, 6 percent of the nation's population would be in that zone," Cuomo continued. "So evacuation, I don't believe, is even a feasible concept when you're talking about this plant in this area with this density."

The governor said the state would ultimately be able to replace the 2,000 megawatts of power produced by Indian Point through facilities sited and scheduled to go on line in the next few years.

The near-term effects of the loss of power in the state's electrical grid, Cuomo said, shouldn't be yoked to Indian Point's safety. Once that margin of danger has been established by the state and the NRC, he said, the larger discussion about Indian Point's future would begin.

"What risk are you willing to live with?" Cuomo said. "That's what it's going to come down to at the end of the day."

## **NRC Will Make Indian Point Safety Review A "Top Priority" (WXXI)**

By Karen DeWitt

WXXI-TV Rochester, NY, March 23, 2011

Governor Andrew Cuomo says the US Nuclear Regulatory Commission has pledged to make the Indian Point nuclear power plant its first priority in reviewing seismic risk at the nation's nuclear power plants in light of the disastrous earthquake in Japan. Cuomo stopped short, though, of calling for a shutdown of the Indian Point nuclear power plant.

Cuomo as Attorney General expressed deep concerns, about the safety of the Indian Point nuclear power plant, which is located in the population dense Westchester County around 25 miles north of New York City. The governor says his worries were heightened after the Japan earthquake, and after new information that seismic threats to the plant might be greater than previously believed.

Cuomo says his staff and nuclear regulatory commission staff will soon conduct a new review of the potential dangers posed to the plant, which sits near a significant earthquake fault line.

"What is the risk, what can you do about it, can it be mitigated?" asked Cuomo, who said he's seeking "solid information".

New York State does not have the power to shut the plant down, only the federal government can do that. Cuomo is asking though, that the NRC "reevaluate" its criteria before it decides whether the plant should be re-licensed in 2013.

Cuomo says he will ask the NRC officials, "given what you know today, should that plant be licensed today?"

Cuomo says evacuation plans were discussed at the meeting, which was attended by Lieutenant Governor Robert Duffy, but he says there's been no decision to revise those plans. The governor says though, a fifty mile radius evacuation that the US is recommending be put in place in Japan after the nuclear power plant failures there would be almost impossible to carry out if a similar situation occurred at Indian Point.

"You're talking all of New York City, you're talking about parts of Connecticut, you're talking about Long Island, you're talking about New Jersey," said Cuomo, who said those locations represents 6% of the entire US population.

"Evacuation, I don't believe, is even a feasible concept," Cuomo said.

The governor did not say that the plant should definitively be shut down, but he did say that if the nuclear power plant is eventually deemed too great a risk to continue to operate, alternative sources of energy would have to be found to replace the power. He admits adequate replacement supplies do not exist right now.

Cuomo says new plants would have to be built, he says he does not believe that hydrofracking of natural gas deposits, which is under debate in New York, would be a reasonable replacement. Cuomo says at the end of the day, it comes down to "what risk are you willing to live with", and he says his threshold for that risk is likely much lower than that of the federal nuclear regulatory commission.

Cuomo's announcement was praised by the New York Public Interest Research Group. NYPIRG's Laura Haight says the original decision to build the nuclear power plant over an active earthquake fault line was "crazy".

## **Indian Point Target Of Quake Review (WSJ)**

By Devlin Barrett

Wall Street Journal, March 23, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

## **Indian Point Tops Quake-risk List (WESTJN)**

By Greg Clary

Westchester Journal News, March 23, 2011

Federal regulators agreed to put Indian Point at the top of their earthquake risk list, Gov. Andrew Cuomo said Tuesday, hours after top officials of his administration met with the Nuclear Regulatory Commission.

The NRC is reviewing seismic risk at 27 of the 104 working commercial reactors across the nation, and though Indian Point was already on that list, Cuomo sought to have it looked at first because of the earthquake-tsunami damage to reactors in Japan.

Cuomo said the NRC has also agreed to allow New York state technical experts to review agency seismic data and work cooperatively on the review, including on-site inspections.

"It is essential that the NRC move quickly to answer the significant and long-standing safety questions surrounding Indian Point," Cuomo said during an afternoon news conference. "We appreciate the NRC agreeing to move swiftly and we look forward to working closely with them on this issue to protect the health and safety of New Yorkers." Cuomo was represented at the NRC's regional headquarters in Rockville, Md., by Lt. Gov. Robert Duffy, Director of State Operations Howard Glaser and six others.

The state came away with a memorandum of understanding from the NRC promising cooperation with the state. In addition, NRC Chairman Gregory Jaczko has agreed to conduct a personal site inspection of Indian Point with officials, Cuomo said.

The NRC confirmed that there was agreement that state inspectors could join the agency in its seismic inspections at Indian Point and that the NRC would share its non-proprietary seismic data.

Jaczko may find himself conducting inspections on the West Coast as well, with the release Tuesday of a letter sent to him by California Sens. Barbara Boxer and Diane Feinstein.

Boxer, chairwoman of the Senate's Environment and Public Works Committee, said she has received new information from the NRC indicating two California nuclear plants are the only ones in the nation that are in the highest seismic hazard areas.

According to the NRC, its rating was based on the "level of seismic activity and the potential for large magnitude earthquakes," Boxer said.

"New information about the severe seismic risk at the San Onofre Nuclear Generating Station and the Diablo Canyon Power Plant make clear that these two plants require immediate attention in light of the catastrophic events in Japan," Boxer said.

The two Democrats asked Jaczko for answers on what has been done since the plants opened in the mid-1980s to improve safety, how emergency notification systems have worked and what the plants would do if they lost power.

The NRC began in the fall to review seismic risk for its plants east of the Rocky Mountains after updated geological information from the US Geological Survey showed increased likelihood of earthquake activity in the east and central United States.

NRC officials have said repeatedly since the Japanese crisis that Indian Point was built strongly enough to handle earthquakes in this region and the review was being done with improved seismic technology to pinpoint the plant's safety margin.

"We continue to believe that the robust design of US plants makes it highly unlikely that a similar event could occur in the United States," NRC spokesman Neil Sheehan said. "(The) NRC will look to see if there may be any safety enhancements needed for a number of plants, including Indian Point."

Indian Point spokesman Jim Steets said the company welcomed the NRC and state's in-depth look at the plant's seismic safety.

"All citizens of New York need to have access to the pertinent facts regarding Indian Point," Steets said. "We strongly believe that knowing the facts will answer the public's questions and will also clearly demonstrate that this facility is safe — designed with a margin of safety beyond the strongest earthquake anticipated in the area."

## **Indian Point Has Its Bases Covered, Entergy Officials Tell Westchester Lawmakers (MIDHUD)**

Mid-Hudson News, March 23, 2011

WHITE PLAINS – The circumstances that led to the issues relating to the Japanese nuclear power plant problems, namely the earthquake and tsunami, are not going to happen one after the other in the vicinity of the Indian Point nuclear power plants in Buchanan, Entergy officials told members of the Westchester County Board of Legislators on Monday.

The Committees on Environment and Energy and Public Safety met with Entergy officials to be briefed on community concerns about Indian Point safety in the wake of the natural disasters in Japan.

The officials said there are plenty of safeguards at the facilities should a mild earthquake occur, and the last one that happened in the region was a minor one in Rockland County over 50 years ago.

Environment and Energy Committee Chairman Legislator Michael Kaplowitz said two issues stand out, storage of spent fuel rods and the 10 mile emergency zone around Indian Point.

"From Kingston to Staten Island, that's 50 miles. Americans are told in Japan to get away from the plant by 50 miles or more," he said. "Why are we only planning for a 10 mile evacuation zone around Indian Point in our nuclear plants here?"

The county board's study into the safety of Indian Point will continue with another meeting, that one to hear from government regulators of the plant.

## **Indian Point Safe, Radiation Good For You, Says Area Man: Gothamist (GOTHAMIST)**

By John Del Signore

Gothamist, March 23, 2011

Lieutenant Governor Robert Duffy and Director of State Operations Howard Glaser are meeting with regulators from the Nuclear Regulatory Commission today to discuss the risks facing the Indian Point nuclear plant in the event of an earthquake. You'll recall that the plant, which is about 25 miles from city limits, is at the intersection of two different fault lines. But there is nothing to worry about, say the plant's owners and this area man on the street, who gives NY1 the quote of the day:

"Nuclear power is the safest power there is," said a knowledgeable man on the street who declined to give his name. "The fears of radiation are ridiculous. You're radioactive; I'm radioactive. Tiny doses of radioactivity are really helpful they've discovered. People in Colorado get two or three times the dose of normal radioactivity, compared to what we get. So I say more nuclear power plants!" Then a smaller, second head growing out of his neck chimed in, "And more equal rights for mutants!" (Watch at the 1:30 mark.)

Entergy Corp - which runs the plant - says the reactors are safe and the plant can withstand a magnitude 6.0 earthquake. John McCann, plant owner Entergy's vice president for nuclear safety, licensing and emergency planning, told Westchester County lawmakers yesterday, "I would say categorically that Indian Point is not susceptible to the type of earthquake that occurred in Japan. And more importantly, perhaps, to the tsunami." Former mayor and presidential hopeful Rudy Giuliani also says there's nothing to fear, and he's certainly an authority, having been hired by Entergy as a security consultant.

Others, like Governor Cuomo, have called for the plant to be shut down. And federal inspectors will soon conduct a full review of the plant's safety. Asked about the possibility of an earthquake, Energy Secretary David Chu said Sunday, "It is an issue. We're going to have to look at whether this reactor should remain [in operation]. This is not to say that we believe that reactor is unsafe." No, not at all, but it sounds like Entergy might have forgotten the three most important rules of nuclear plant building: location, location, location.

Theoretical physics professor and author Dr. Michio Kaku was on The Late Show with David Letterman last night talking about Indian Point, which the talk show host is strongly opposed to. "We have so many gangs and so much violence in this city, why don't we send some of these gangs up there to just take the thing apart?" asked Letterman. Kaku replied, "That's the Letterman solution!"

By the way, last week a magnitude 4.7 earthquake in east-central Canada was felt as far south as New York's Adirondack Mountains. And if you're not cool with Indian Point, you may want to join forces with the Rock the Reactors movement. (Check out the awesome website.) The group's organizer Remy Chevalier tells us why this issue is so important to him: Any asshole with a surface to air missile can shoot it into the water intake and demolish the cooling system... Any asshole can drive a plane into the plant... a multitude of calamities could happen... Can you imagine trying to evacuate Manhattan? The whole thing is insane, has been insane since the beginning. The only reason we're using enriched uranium and now plutonium to boil water to drive a turn of the last century steam turbine is because these jokers at the Pentagon needed to justify the cost of all these centrifuges! Why it's important to me? Because it's the ultimate insult to life... enriched uranium and plutonium do not exist in nature, we created it out of arrogance, like the tower of Babel... Chernobyl wasn't enough? Indian Point wasn't enough? GE had to go and impose their sick brand of ridiculous pretense on the Japanese people, and put their reactors all stacked in a row on top one of the most active earthquake fault on the planet? We can make iPads, we can make Tesla Motor cars? And we can't find a way to capture electrons from the ambient environment where they are free for the taking? We had to create the worse possible poison man has ever known, and fuck with it? Please don't get me going ok? That's why I don't talk about the reasons why... because if by now people don't know why so many are so passionate about their anti-nuclear convictions, there's really nothing we can do to help them... Read my book ELLE on Earth, I was there in the room when that oaf of a man, Pompidou, sold out France to Westinghouse... France is living on borrowed time... one close call after the other... all for what? A few more light bulbs? Buy LEDs!

## **Indian Point Power Plant Review (WBNG)**

WBNG-TV Binghamton, NY, March 22, 2011

Albany, NY (WBNG Binghamton) New York will get answers about the risks an earthquake could pose to the Indian Point Nuclear Power plant.

Governor Andrew Cuomo announced the US Nuclear Regulatory Commission agreed to make Indian Point one of its top priorities in a review of seismic risk at all 27 nuclear power plants in the United States.

Indian Point is located in Buchanan in Westchester County.

It has two nuclear reactors and sits near two fault lines.

The NRC agreed to include New York experts on the inspection team and share its findings with the state.

The plant sits near fault lines that experts have said is modest compared to those in Japan and California.

Yet, it is within 50 miles of where 20 million people live downstate.

Cuomo's office stated he has long opposed the Indian Point facility and has worked to prevent federal relicensing.

## **New York Nuclear Plant To Receive 'Top Priority' In Safety Review (CNN)**

By David Ariosto

CNN, March 23, 2011

A nuclear power plant less than 25 miles from New York is among 27 reactors the Nuclear Regulatory Commission is reviewing after a commission report uncovered higher safety risk than previously thought, officials said.

The Indian Point station -- which comprises two operating nuclear reactors -- is in Buchanan, New York, and sits atop the Ramapo fault line, causing concern for some residents in the wake of the Japan disaster.

During a news conference Tuesday, New York Gov. Andrew Cuomo said the Nuclear Regulatory Commission has pledged to make Indian Point "its first and top priority."

"It is essential that the NRC move quickly to answer the significant and long-standing safety questions," Cuomo said.

The first-year governor said the station, given its close proximity to major population centers, represents more than "a generic conversation about nuclear power."

"Evacuation is not even a feasible concept with this plant" in a worst-case scenario, he said.

But regulators say that the plant is safe and that an incident similar to Japan's, where a 9.0-magnitude earthquake and ensuing tsunami crippled reactors and raised surrounding radiation levels, is unlikely.

"US plants take into effect even the most extreme conditions," commission spokesman Neil Sheehan said. "The Japanese plants seemed to have withstood the earthquake, but it was the tsunami that knocked out power."

"Indian Point (given its location) is not about to be hit by a tsunami," he said, noting that US facilities are able to operate during electrical blackouts.

"We have diesel generators and backups to the diesel generators," he added.

Eric Leeds, director of the commission's Office of Nuclear Reactor Regulation, said it is "continuing to examine the recently updated earthquake information."

He noted that "reactors in Eastern and central states remain safe, since our analysis confirms that overall seismic risk remains low."

The plant is run by Entergy Corp., which took out advertisements Tuesday in New York newspapers, welcoming the safety reviews.

Each plant reactor produces enough energy to power approximately 1 million households, Sheehan said.

The United States maintains 104 operating nuclear reactors, often considered an alternative to reliance on fossil fuels.

## **Indian Point Plant Safe, Japan Accident Unlikely, NRC Says (BLOOM)**

By Simon Lomax

Bloomberg News, March 23, 2011

Entergy Corp. (ETR)'s Indian Point nuclear power plant in New York is safe and a US accident similar to Japan's atomic disaster is unlikely, federal officials told the state's lieutenant governor, Robert Duffy.

"The robust design of US plants makes it highly unlikely that a similar event could occur in the United States," the Nuclear Regulatory Commission said today in an e-mail after meeting Duffy and other state officials.

The crisis at Japan's Fukushima Dai-ichi plant after a 9.0 magnitude earthquake and tsunami should prompt the US regulator to shut the Indian Point reactors, New York Governor Andrew Cuomo, a Democrat, said March 19. Indian Point is about 24 miles north of New York City.

While a report last year found "slightly higher seismic risk for the Indian Point reactor," it was "still within safety margins," the NRC said. After Japan's earthquake and tsunami, the agency "will look to see if there may be any safety enhancements needed for a number of plants, including Indian Point."

New York officials can join NRC officials at plant inspections and have access to the site's seismic data, the agency said.

Duffy spokesman, David Doyle, didn't immediately respond to a voicemail or e-mail seeking comment.

The two reactors at Entergy's Indian Point plant began operating in 1974 and 1976, according to NRC data. The operating licenses are set to expire in 2013 and 2015, according to the NRC. Entergy has applied to extend the licenses for 20 years.

The NRC, which says US reactors are designed to withstand earthquakes, tsunamis and natural disasters, announced yesterday a 90-day review of US plant safety in light of Japan's crisis. An initial report will be released after 30 days, the NRC said.

The agency granted a 20-year license extension yesterday to Entergy's Vermont Yankee nuclear plant in Vernon, Vermont. The decision was based on reviews completed before the March 11 earthquake and tsunami in Japan.

## **New York Officials Meet With Nuclear Regulatory Commission About Indian Point (WABC)**

By Bob Monek, Eyewitness News

WABC-TV New York City, March 23, 2011

ALBANY (WABC) – New York Governor Andrew Cuomo says that the US Nuclear Regulatory Commission has pledged to make Indian Point its top priority in its review of seismic risk at 27 nuclear plants throughout the country.

The owner of the power plant has insisted the facility is not susceptible to the kind of earthquake and tsunami that rocked Japan.

Entergy's vice president, John McCann, told Westchester County legislators on Monday that the earthquake in Japan was much more powerful than any recorded around Indian Point.

State officials met with the NRC on Tuesday. At the request of the Cuomo Administration, the NRC has agreed to a cooperative review of Indian Point as a joint effort between the NRC and New York State.

The governor's office says NRC has also agreed to sign a memorandum of understanding that will:

Share federal data regarding seismic risk specific to Indian Point with New York technical experts

?Include New York experts as part of the NRC on-site inspection team that will evaluate Indian Point with regard to seismic risk

In addition, NRC Chair Greg Jaczko has agreed to conduct a personal site inspection of Indian Point with New York officials.

Governor Cuomo has long been an opponent of Indian Point and has worked to prevent the federal relicensing of the facility.

"I've had concerns about Indian Point for a long time," Cuomo said. "As attorney general, I did a lot of work on Indian Point. My position was that it shouldn't be re-licensed. My position was that it should be closed."

The facility is situated near a fault line and concerns have been raised about whether it was designed to withstand the seismic activity that could result from an earthquake.

Chief among those concerns is the size of the evacuation zone around Indian Point. Right now, it's just 10 miles. But the zone for US citizens near Japan's damaged nuclear plant is 50 miles.

"If it's 50 miles, it takes us through New York City," Westchester Legislator Michael Kaplowitz said. "If it's 50 miles, I don't know how you design an evacuation plan."

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Do you have something to add to this story? [Click here to contact Eyewitness News.](#)

## **Indian Point Owner Says New York Reactor Is Safe (AP)**

Associated Press, March 23, 2011

NEW YORK (AP) – The owner of New York's Indian Point nuclear power plant says the facility is not susceptible to the kind of earthquake and tsunami that rocked Japan.

Entergy Corp.'s vice president, John McCann, told Westchester County legislators on Monday that the earthquake in Japan was much more powerful than any recorded in the region of Indian Point.

McCann said he expected changes to be made in response to the events in Japan, but he didn't say what they would be.

Entergy on Monday took out a one-page ad in The New York Times reassuring the public that the facility is designed to withstand the strongest earthquake anticipated in the area.

The plant is located in Buchanan, N.Y., 35 miles north of New York City.

## **Entergy: 'Indian Point Is Not Susceptible' To Japan-type Catastrophe (WESTJN)**

By Greg Clary

Westchester Journal News, March 23, 2011

WHITE PLAINS – The one-two punch of a massive earthquake and a tsunami knocking out Indian Point is unlikely in the Hudson Valley, plant officials told Westchester County lawmakers Monday.

"If it were only the earthquake that they had to deal with, we probably wouldn't be discussing (the Japanese) event here today," said John McCann, plant owner Entergy's vice president for nuclear safety, licensing and emergency planning. "I would say categorically that Indian Point is not susceptible to the type of earthquake that occurred in Japan. And more importantly, perhaps, to the tsunami."

McCann said the earthquake that hit a coastal area 170 miles northeast of Tokyo was 1,000 times more powerful than anything recorded in this region, adding that the plant is too far inland to be hit by a tsunami.

Flood planning is set against a 100-year flood mark and the company has its backup systems protected for a safety margin above that high-water mark.

Members of the county's Board of Legislators' Environment and Energy Committee asked Indian Point to brief them about how the Japanese circumstances compare with this area.

"There is no interest on the part of any of us to panic or, in fact, to act in haste," said Michael Kaplowitz, D-Somers, one of the committee's chairmen. "It's a chance to ask questions and get answers ... to see what changes can be made... to make sure people are safe."

The committee focused questions on the ability of the plant to contain radiation, to store spent fuel safely and to keep power flowing via backup generators and other systems until the reactors can be safely shut down.

Before a phalanx of television cameras, the lawmakers raised concerns about emergency planning and evacuation, possible panic among residents, and how quickly nuclear plant officials would be willing and able to make changes at the plant.

"We need to be careful about not moving too quickly," McCann said. "I have no doubt that there will be changes made in response to this event."

Phillip Musegaas, Riverkeeper's lead Indian Point expert, said he didn't hear much new from plant officials.

"They didn't answer any hard questions," he said. "Where's the supporting data on (withstanding) a 6.0 earthquake. And there's nothing preventing them from moving more spent fuel to dry cask storage, except the expense."

Indian Point spokesman Jim Steets said the earthquake data was in the plant's "Final Safety Analysis Report."

Steets said the spent-fuel pools are safe and the company has already emptied the shuttered Indian Point 1 pool and started a program to take more fuel from both of the working reactors to give them more room to empty the reactors during refueling.

"It's not the expense; it takes time and planning," Steets said. "There's a lead time for everything. These are big projects. We're waiting for NRC (Nuclear Regulatory Commission) approval to move more from Unit 3 now."

He said about 10 percent of Indian Point's spent fuel has been moved to dry cask storage on-site.

The committee expects to continue its plant review at its Monday meeting and scheduled earthquake experts to detail the region's risk.

## **Indian Point Review A Top Priority For Federal Regulators (NRPTC)**

By Lanning Taliaferro and Alice Kenny

New Rochelle (NY) Patch, March 23, 2011

In the wake of the Japanese earthquake and resulting nuclear catastrophe, Gov. Andrew Cuomo on Tuesday said that federal nuclear regulators have promised to make Indian Point their top priority in a nationwide review of nuclear plants.

The Indian Point nuclear power plant will be the first in the country to undergo a review of seismic risk by federal regulators, Gov. Andrew Cuomo said Tuesday.

The announcement came after members of the Cuomo administration, including Lt. Gov. Robert Duffy, met with officials from the US Nuclear Regulatory Commission (NRC) at the agency's Maryland headquarters.

"Indian Point will be the NRC's top priority and will be reviewed first among the 27 plants that are being reviewed by the NRC," Duffy said, adding that he did not know when the review would take place.

According to a report released last fall Indian Point, which lies near the Ramapo fault line, is at greater risk for an earthquake than any other nuclear plant in the eastern or central United States. That fact has come into focus in the aftermath of the March 11 earthquake and tsunami in Japan that destroyed the Fukushima Dai-ichi nuclear plant.

Cuomo has been a vocal opponent of Indian Point since at least 2007, when he was serving as the state's attorney general, and has repeatedly called for the NRC to deny the plant's reactors new licenses when the current ones expire in 2013 and 2015.

"My position has been that the plant is risky and should not operate, and that being said I was surprised to hear of the significant seismic risk," Cuomo told reporters on Tuesday.

The freshman governor went on to say that he took issue not only with Indian Point, but with the NRC's entire process of reviewing nuclear sites.

"They don't take a whole new look. They see it more as an update on the physical plant capacity," he said. "Things have happened, the world has changed."

The NRC has also agreed to share seismic data with state officials and include members of Cuomo's cabinet in on-site inspections of the Westchester plant.

Officials from Entergy, the company that owns the plant, discussed a range of issues with county legislators at a committee meeting on Monday.

John McCann, the company's vice president for nuclear safety, insisted that Indian Point could not face a disaster similar to that in Japan. But he did concede that federal regulators will likely force an overhaul of procedures designed to mitigate fallout from an earthquake.

"I have no doubt there will be changes we make in response to this event," McCann said, adding "we need to be careful about not moving too quickly."

At that meeting, lawmakers repeatedly raised concerns about the effectiveness of current evacuation plans, which only cover a 10-mile radius. About 18 million people live within 50 miles of Indian Point.

Legislator Peter Harckham (D-Katonah) said that he was evacuated during the 1979 meltdown at the Three Mile Island plant in Pennsylvania, and that the plan "didn't work."

"When I hear about evacuation, whether it's 10 miles or 50 miles, I personally don't have a lot of confidence," he said.

Cuomo on Tuesday echoed Harckham's concerns.

"Evacuation, I don't believe, is even a feasible concept when you're talking about this plant, in this area, with this [population] density," he said.

## **NRC, NY State Will Review Downstate Nuclear Plants' Ability To Resist Earthquakes (SYPS)**

By Tim Knauss

Syracuse (NY) Post-Standard, March 23, 2011

Albany, NY – Federal regulators will cooperate with New York officials as they review the vulnerability to earthquakes of two Downstate nuclear reactors, Gov. Andrew Cuomo said Tuesday after meeting with representatives of the US Nuclear Regulatory Commission.

Two controversial reactors at Indian Point Energy Center in Westchester County are among 27 units the NRC targeted for extra scrutiny last fall based on new earthquake data that became available several years ago, agency officials said.

The planned inspections have taken on new urgency since the March 11 earthquake and tsunami that caused a nuclear crisis in Japan.

The NRC's reassessment of seismic data began in 2005. An initial review of all 104 US plants found no need for additional measures to protect four Upstate New York reactors, including three in Oswego County and one in Wayne County, said Neil Sheehan, speaking for the NRC.

At 27 facilities, the NRC wants to collect more information about seismic risks to see if upgrades are needed, Sheehan said. The two Indian Point units are the only ones in New York on the list.

Cuomo, who opposes Indian Point's application for relicensing, said the NRC agreed to share seismic information with the state and to allow state representatives to participate in seismic inspections.

Relicensing of Indian Point has drawn significant opposition, in part because 20 million people live or work within 50 miles of the plants, Cuomo said.

## **Cuomo: Indian Point Now 'top Priority' For NRC (ATU)**

**Capitol Confidential**

By Casey Seiler, Capitol bureau chief  
Albany Times Union (blog), March 23, 2011

Gov. Andrew Cuomo, Lt. Gov. Bob Duffy and state Director of Operations Howard Glaser appeared in the Red Room to announce the outcome of Duffy and Glaser's meeting earlier today with officials of the Nuclear Regulatory Commission. The subject: the seismic vulnerability of the Indian Point nuclear facility in Westchester County.

Duffy detailed the NRC's agreement to make Indian Point its "top priority," and its willingness to sign a memo of understanding that it would share federal data on seismic risk with New York experts, and that state personnel would be included in the commission's on-site inspection of the facility.

Cuomo read from a letter he sent in 2007 in his capacity as Attorney General that called the NRC's decision not to consider seismic issues or potential terrorist threats as part of its licensing process "dangerously irresponsible." That letter was prompted by an earthquake in Japan that had briefly imperiled a nuclear power plant.

"This is not the first time that we've had issues with the Indian Point power plant," Cuomo said. "... My position has been for a long time that the plant is risky and the plant should not operate."

The NRC is slated to relicense Indian Point's reactor in 2013, and while the state has no say in that process, Cuomo signaled that he wouldn't be heartbroken if that assessment resulted in the plant's demise.

Cuomo pointed out that the plant's location has prompted worries about the difficulty of evacuation, among other issues. He noted that if the current 50-mile "circle of evacuation" around Japan's wounded Fukushima Daiichi Power Station was laid over Indian Point, "you're talking all of New York City, you're talking about parts of Connecticut, you're talking about Long Island, you're talking about New Jersey," he said. "By some estimates, 6 percent of the nation's population would be in that zone. So evacuation, I don't believe, is even a feasible concept when your talking about this plant in this area with this density."

Cuomo said the state would ultimately be able to replace the 2,000 megawatts of power produced by Indian Point through power facilities sited and scheduled to go on line in the next few years. (Plants capable of producing 3,000 megawatts have already been permitted, he said, while plants capable of producing another 3,000 megawatts are awaiting permits.)

The near-term effects of the loss of power in the state's electrical grid, Cuomo said, shouldn't be yoked to the entirely separate question of Indian Point's safety.

Once that margin of danger has been established by the state and the NRC, he said, the larger discussion about Indian Point's future would begin.

"What risk are you willing to live with?," Cuomo said. "That's what it's going to come down to at the end of the day.

Here's the news release from the governor's office:

Governor Andrew M. Cuomo today announced that the US Nuclear Regulatory Commission (NRC) has pledged to make Indian Point its first and top priority in its review of seismic risk at 27 nuclear plants throughout the country. At the request of the Cuomo Administration, the NRC has agreed to a cooperative review of Indian Point as a joint effort between the NRC and New York State.

As a result of the meeting today at NRC headquarters in Maryland between Lieutenant Governor Robert Duffy, Director of State Operations Howard Glaser, and top NRC officials, the NRC has also agreed to sign a memorandum of understanding that will:

Share federal data regarding seismic risk specific to Indian Point with New York technical experts

Include New York experts as part of the NRC on-site inspection team that will evaluate Indian Point with regard to seismic risk

In addition, NRC Chair Greg Jaczko has agreed to conduct a personal site inspection of Indian Point with New York officials.

"It is essential that the NRC move quickly to answer the significant and long-standing safety questions surrounding Indian Point," Governor Cuomo said. "We appreciate the NRC agreeing to move swiftly and we look forward to working closely with them on this issue to protect the health and safety of New Yorkers."

"I thank the NRC for hosting us today and for recognizing the legitimate concerns that exist regarding Indian Point," Lieutenant Governor Duffy said. "Seismic activity is a serious concern regarding the facility and we will now work with the federal government to make sure we get answers for the people of New York."

Indian Point is located in Westchester County, within fifty miles of where more than 20 million people live and work. Among its other structural and safety flaws, the facility is situated near a fault line and concerns have been raised about whether it was designed to withstand the seismic activity that could result from an earthquake.

Governor Cuomo has long been an opponent of Indian Point and has worked to prevent the federal relicensing of the facility. Governor Cuomo and senior officials will continue to work with the NRC to monitor the status of Indian Point and protect residents.

## **Gov. Cuomo: Feds To Make Indian Point Priority #1: UPDATED (NTDN)**

By Celeste Katz

New York Daily News, March 23, 2011

In the wake of Japan's earthquake-triggered nuclear disaster, Westchester's Indian Point nuclear power plant will become the US Nuclear Regulatory Commission's top priority first in a risk review of 27 plants nationwide, Gov. Cuomo said this afternoon.

As our Rich Sisk reported yesterday,

"Cuomo, who has long advocated closing the Buchanan plant because of its close proximity to 21 million people, demanded a top-to-bottom examination of the aging double-reactor plant last week. A study by a group of leading Columbia University seismologists has revealed that two faults – the Ramapo and the Stamford-Peekskill – intersect just north of Indian Point.

"It is an issue. We're going to have to look at whether this reactor should remain in operation, US Energy Secretary David Chu said in a TV interview Sunday. 'This is not to say that we believe that reactor is unsafe.'"

Lieutenant Governor Robert Duffy and Director of State Operations Howard Glaser met with top NRC officials in Maryland today. (Sisk has much more about that meeting on my NYDN brother blog in DC, Mouth of the Potomac.)

The federal agency has agreed to work with New York State to assess any dangers. The NRC has agreed share federal data regarding seismic risk specific to Indian Point with New York technical experts and include local experts on its inspection team. NRC Chair Greg Jaczko will inspect Indian Point personally.

"It is essential that the NRC move quickly to answer the significant and long-standing safety questions surrounding Indian Point," Cuomo said in a statement. "We appreciate the NRC agreeing to move swiftly and we look forward to working closely with them on this issue to protect the health and safety of New Yorkers."

UPDATE FROM KEN LOVETT:

"These are very good first steps," Duffy said at a Capitol news conference. "We want to make sure New York has answers to these issues regarding Indian Point."

No timeframe was given, but Cuomo said the NRC promised the review would be done in an "expeditious" manner. "It's an emotional topic," he said. "We want to make sure that before we reach any decisions, we have the facts and they are solid facts."

The governor said he wants answers to what the seismic risk is at Indian Point and if a significant risk is found, can it be mitigated.

The fact that the state will have its own team as part of the inspection ensures "people will have an independent source of evaluation, an independent source of information and that is good news."

He also said he believes seismic risks should be a factor in the plant relicensing decision.

Rather than doing a new risk assessment when it relicenses a plant, the NRC does an update on the physical plant capacity.

"My position was, new things have happened," Cuomo said. "There's new information. The world has changed. Reevaluate and look at the situation and decide whether or not you should grant this facility a license today."

Indian Point is a more serious question because of its proximity to New York City and other major population centers.

He said the NRC adjusted the seismic risk at Indian Point from 1 in 10,000 to 1 in 13,000. One in 10,000 is the standard that poses an immediate risk, he said.

Cuomo said he still believes the plant should be shut down rather than relicensed: "My position hasn't changed," he said. "This is a new factor and a new situation aside from whether or not the facility should be relicensed."

He acknowledged that presently there isn't enough power capacity for New York City to make up for the closure of Indian Point. But he said if Indian Point is found to be a safety risk, the state would have to find the replacement power.

"You would have to build it," he said.

Even with state involvement, ultimately relicensing decisions rest squarely with the feds and not the state, Cuomo acknowledged.

Former Westchester state Assemblyman Richard Brodsky, who has brought a lawsuit against the NRC over Indian Point, lauded Cuomo on the issue, but complained the NRC cannot be trusted to review the safety of the plant. Today, Brodsky, who is teaching at NYU, released a letter requesting more information about the plant.

"The NRC is the problem – it's not the remedy," said Brodsky. "You can't ask the NRC to go back and say whether all their decisions have been wrong. The NRC is to Indian Point what the SEC was to Wall Street three years ago."

## **NRC OK's 20-year Extension For Vt. Nuclear Plant (BOS)**

By Beth Daley

Boston Globe, March 23, 2011

The Nuclear Regulatory Commission issued the Vermont Yankee nuclear power plant a 20-year license extension yesterday, but the plant must still get state legislative approval to continue operating after its original license expires next year.

The NRC instructed its staff to issue the renewal March 10, the day before the Japanese earthquake and tsunami, but then placed a hold on the license because agency staff were too busy aiding Japan. Opponents of the reactor in Vernon, near the Massachusetts border, had hoped the pause would translate into a deeper review of the plant, which has the same design as the crippled Fukushima Daiichi nuclear facility in Japan that is releasing radioactive material.

"Today's action comes after five years of careful and extensive review and confirms that Vermont Yankee is a safe, reliable source of electricity and capable of operating for another 20 years," Larry Smith, Vermont Yankee spokesman, said in a statement.

NRC officials said yesterday that the staff had completed an in-depth review since Vermont Yankee first filed for an extension in 2006, including an environmental assessment in 2007 and safety evaluation in 2008. The independent Advisory Committee on Reactor Safeguards also reviewed the proposal.

Vermont is the only state that requires a nuclear plant to get legislative approval for an extension. Last year, the state Senate voted, 26-4, to close the plant when its license expires next year. Entergy, the plant's owner, has declined to discuss its plans. On Sunday, a vigil was held outside the plant to show solidarity with Japan, but also to protest nuclear power. Police said about 250 people attended; organizers say there were twice that many.

Yesterday, Governor Peter Shumlin of Vermont called the NRC's relicensing action "puzzling."

"Fortunately, Vermont has taken steps to close down the aging Yankee plant, and I have urged other states with older nuclear facilities to follow our example and take control of the lifespan of their plants," said Shumlin.

## **Vt. Lawmakers Want NRC To Again Review Vt. Yankee Safety (WCAX)**

By Kristin Carlson, WCAX News

WCAX-TV Burlington, VT, March 23, 2011

Following the nuclear crisis in Japan some Vermont lawmakers want federal regulators to review Vermont Yankee's safety again.

Yankee shares the same reactor design and is about the same age as the Fukushima plant in Japan. A day before the quake, the Nuclear Regulatory Commission announced it would extend Vermont Yankee's operating license for another 20 years, concluding a 5-year review of the plant's operations.

A group of Vermont lawmakers now want the NRC to suspend the license extension until regulators take another look at safety at the Vernon plant. They also want as much radioactive material as possible removed from the water in the spent fuel pool and instead put into dry cask storage.

"The radioactive release in Japan is the result of inundation by water," said Rep. David Deen, D-Westminster. "We may be a seismically inactive area but we do face the power of water if nature decides to inundate the Vermont Yankee plant. Is it – and the emergency support systems around it – up to the task of protecting the people of Vermont?"

Entergy owns Vermont Yankee and says its plants are designed to withstand earthquakes and floods.

## **The Pros And Cons Of Keeping Vermont's Nuclear Plant Open (WBUR)**

**All Things Considered**

By Sacha Pfeiffer

WBUR-FM Boston, March 23, 2011

BOSTON – Federal regulators have given final approval to continued operations at the nuclear reactor just across the Massachusetts border, in Vernon, Vt. But the fight over the Vermont Yankee plant may not be over.

Vermont is the only state that requires legislative approval for the re-licensing of nuclear plants – and last year the Vermont Senate voted against reissuing a new license for Vermont Yankee, whose current license expires in April 2012.

WBUR's All Things Considered host Sacha Pfeiffer spoke with Vermont Gov. Peter Shumlin, a plant opponent, and Vermont state Rep. Michael Hebert, a plant supporter, about their respective stances on Vermont Yankee.

## **Beyond Nuclear Decries Reckless Decision Of Nuclear Regulatory Commission To Give Vermont Yankee Reactor 20 More Years To Operate (Common Dreams)**

Common Dreams, March 22, 2011

TAKOMA PARK, MD - March 22 - Beyond Nuclear today decried the reckless decision-making by the Nuclear Regulatory Commission on March 21 to grant a 20-year license extension to the Vermont Yankee reactor, the same Mark I design as the severely damaged Fukushima Dai-ichi reactors still in an extremely dangerous state in Japan. Beyond Nuclear is urging the public to write letters and make calls to the NRC and Congress, to whom the NRC is responsible, condemning this outrageous gamble with public safety.

"The accident is not even over in Japan and the NRC chose this week to relicense the reactor that is a dead ringer for the Fukushima reactors that they are still struggling to save," said Paul Gunter, director of Reactor Oversight at Beyond Nuclear of the decision to relicense Vermont Yankee.

Meanwhile, Beyond Nuclear simultaneously welcomed an Order issued on March 21 by the United States Court of Appeal for the 3rd Circuit in Philadelphia questioning the wisdom of the NRC decision in April 2009 to extend the operating license by 20 years for the Oyster Creek nuclear power plant in New Jersey. Oyster Creek, owned by Exelon Nuclear, is not only currently the oldest nuclear reactor in the United States (Oct. 1969) but identical to the General Electric Mark I Boiling Water Reactors in various states of early meltdown at Fukushima. The court is considering a public challenge to the NRC 2009 decision that was granted after four years of litigation opposing the operating license extension for the Mark I Oyster Creek reactor.

Despite the NRC decision, Exelon negotiated a settlement in December 2010 with the State of New Jersey to only operate the reactor for another nine years. The agreement was made to avoid more litigation costs possibly leading to a multi-million dollar retrofit of cooling towers to prevent significant ecological damage to Barnegat Bay which is directly used to cool the reactor with 1.5 billion gallons of water per day.

The Vermont reactor, owned by Entergy, has been showing signs of deterioration with tritium leaks from unmaintained buried pipes carrying radioactive water; a cooling tower collapse; and a fire in the plant's transformer. The state of Vermont, supported by Governor Peter Shumlin, has voted to close the Mark I reactor on schedule at the end of its current license on March 21, 2012.

"These design problems and breakdowns at Vermont Yankee are all early warning signs that Entergy and the NRC are pushing production margins ahead of safety margins," Gunter said. "This will ultimately come at the expense of public health and safety. The NRC is demonstrating a rush to judgment when there is no need for it. This decision is not safety driven, it is schedule driven."

The GE Mark I Boiling Water Reactor design was recognized in 1972 as too vulnerable to containment rupture and radiation release in the event of a severe accident by Dr. Stephen Hanauer, a chief safety scientist in the Atomic Energy Commission. Dr. Hanauer recommended that the safety agency adopt a policy discouraging further use of the Mark I. In 1985, then NRC senior safety official, Harold Denton, said the Mark I had a 90% likelihood of containment failure in the event of an accident.

Rather than shut down the Mark I fleet, the NRC adopted a voluntary fix that will temporarily vent or defeat the undersized containment under severe accident conditions in order to save it. Early indications are that just such operations may have significantly failed Tokyo Electric Power Company operators at Fukushima Dai-ichi Unit 2 when a vent failed to open and release hydrogen gas generation which then exploded in containment possibly damaging the vital component.

At Oyster Creek, the carbon steel containment has shown signs of rusting and severe corrosion, a serious safety concern as the steel containment is the component credited for containing an accident.

"The Mark I was brought on line because the containment was small and so they were cheap and quick to build," Gunter said. "But given we have known this design is too dangerous since 1972, it is an unacceptable risk not only to still operate them but to extend their operating lives by another 20 years." Beyond Nuclear today decried the reckless decision-making by the Nuclear Regulatory Commission on March 21 to grant a 20-year license extension to the Vermont Yankee reactor, the same Mark I design as the severely damaged Fukushima Dai-ichi reactors still in an extremely dangerous state in Japan. Beyond Nuclear is urging the public to write letters and make calls to the NRC and Congress, to whom the NRC is responsible, condemning this outrageous gamble with public safety.

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Beyond Nuclear aims to educate and activate the public about the connections between nuclear power and nuclear weapons and the need to abandon both to safeguard our future. Beyond Nuclear advocates for an energy future that is sustainable, benign and democratic.

## **Discharge Permit To Be Renewed (KEENE)**

By Kyle Jarvis, Sentinel Staff

The Keene (NH) Sentinel, March 23, 2011

A Vermont agency plans to renew a permit allowing the Vermont Yankee nuclear power plant to discharge water into the Connecticut River.

The move comes after a petition to the Vermont Agency of Natural Resources by the Connecticut River Watershed Council, which wants to review the permit once it's issued so it can examine potential effects on fish populations.

Vermont Yankee's discharge permit was last renewed in 2006, said David L. Deen, river steward for the watershed council.

The permit allows Vermont Yankee to discharge water into the river after it's used it to condense the steam generated by the nuclear reaction process, Deen said.

"The option is for them to use their cooling towers to return the water back to regular temperatures before discharging it back into the river," he said. "But they would have to use their own energy to do that." Deen and others are concerned that discharging the warmer water into the river creates confusion among American shad populations, he said.

"I spent 25 years as a fishing guide," he said. "Shad, like many aquatic species, their behavior is influenced by temperature. When they hit water that's 60 to 65 degrees, they stop and spawn right there."

That stops upward migration, which has caused the number of shad moving up the river above the plant to drop precipitously, he said.

"In 1991, 37,000 shad crossed the Vernon Dam," Deen said. "In 2009, 16 crossed."

Plant spokesman Larry Smith declined to comment on the petition without consulting the legal department, but called it "nothing new."

The Vermont Agency of Natural Resources is preparing to start the process for issuing the permit, now that a few barriers have been conquered, said Deborah L. Markowitz, secretary for the agency. Those included new Environmental Protection Agency standards and the fact that few of these permits are issued by the Vermont agency, so outside help is needed for the process.

If the agency issues the permit, the council has 30 days to review and comment on it, Deen said.

"We'd review it to see if they've incorporated our concerns," he said. "If they haven't, we can appeal to the Vermont Environmental Court."

Markowitz said the process for the renewal could take up to a year or more since the agency needs to hire a consultant to do the work. Kyle Jarvis can be reached at 352-1234, extension 1433, or [kjarvis@keenesentinel.com](mailto:kjarvis@keenesentinel.com).

## **NRC: Vermont Yankee Nuclear Power Plant 'Good To Go' For 20 More Years (FORBES)**

By Osha Gray Davidson

Forbes, March 23, 2011

In an announcement that surprised many because of its timing, the Nuclear Regulatory Commission announced that the Vermont Yankee Nuclear Power Plant has been relicensed to operate for 20 years. The plant, owned by Entergy Corporation, was first licensed in March, 1972. It has a containment vessel identical to the ones at the crippled Fukushima Dai-Ichi nuclear power plant – a GE Mark I.

"Obviously, we're very pleased by the NRC's action," Entergy spokesman Mike Burns told me by phone. "This confirms that [Vermont Yankee] is a safe and reliable source of electricity...and it will be for another 20 years."

Vermont's congressional delegation begs to differ.

In a statement released today, US Senators Patrick Leahy (D), and Bernie Sanders (I), and Representative Peter Welch (D), said,

It is hard to understand how the NRC could move forward with a license extension for Vermont Yankee at exactly the same time as a nuclear reactor of similar design is in partial meltdown in Japan. We believe that Entergy should respect and abide by Vermont's laws and the (memorandum of understanding) signed with the state in 2002, which requires approval by the Vermont Legislature, and then the Vermont Public Service Board, for the plant to continue to operate beyond 2012."

The legislature voted to deny relicensing after radiation leaks were found outside the plant in February, 2010.

I asked Burns what reassurances can Entergy give that a natural disaster similar to the one that caused the catastrophe in Japan couldn't happen at the aging Vermont reactor.

"All American nuclear power plants are required to have emergency plans," he said, adding that Entergy's policy is to go even further. "Our goal is to make sure [the plant] is safe."

While some experts have speculated that the Mark I is inherently unsafe, Burns said Entergy is confident in the containment vessel's integrity.

"The tsunami appears to have been a key factor," in the Fukushima crisis, not the Mark I design, said Burns.

Key Facts about Vermont Yankee (from the NRC):

Location: Veron, VT

Operator: Entergy Nuclear Operations, Inc

Operating License: Issued – 3/21/1972

Original License Expires – 3/21/2012

Reactor Type: Boiling Water Reactor

Electrical Output: 510 MWe

Reactor Vendor/Type: General Electric Type 4

Containment Type: Wet, Mark I

## **Staff Finds No Reason To Shut Down Any US Reactors And No US Risk From Japanese Radiation (CWIRE)**

By Peter Behr

ClimateWire, March 22, 2011

The Nuclear Regulatory Commission staff has concluded that the Japanese nuclear crisis provides no reason to temporarily shut any US reactors for inspection or doubt their ability to operate safely.

"I am 100 percent confident from the review that we've done and continue to do every single day that we have a sufficient basis to conclude that the US plants continue to operate safely," Bill Borchardt, NRC executive director for operations, told commission members yesterday at a special meeting called on the Japanese reactor catastrophe.

He also said the staff has concluded there is no risk to US populations from radioactive releases from the Japanese plant.

"We ask ourselves the question every single day, should we take a regulatory action based on the latest information" from Japan, he said. So far, the staff has seen no need to do so, he added.

At the same time, Borchardt proposed that the staff undertake two additional investigations to confirm the ability of US nuclear reactors to withstand an extreme natural disaster coupled with the loss of outside power, the overheating of reactor cores and spent fuel, and the resulting explosions that struck the Fukushima Daiichi nuclear plant.

If approved by the commission, the first inspection would be a "quick look" check by veteran NRC staff and possibly retired senior staff at all 104 commercial nuclear reactors, to confirm that protective and emergency measures are in place and ready for use, he said. That could take three months, with an interim report to the commission after 30 days, Borchardt said.

Deeper inquiry awaits evidence from Japan

A deeper inquiry would have to await more evidence of the impact of the quake and tsunami on the Japanese reactor complex, he said. It could take a year to complete, and the "lessons learned" could lead to recommendations for NRC orders or guidance to the reactor owners, he added.

The longer review will also include staff and nuclear industry analyses of possible threats to reactors in the central and eastern United States, based on a new evaluation of seismic hazards completed by the US Geological Survey.

NRC Chairman Gregory Jaczko said he hoped the commission could respond soon to the staff's proposal and determine the kinds of investigations it wanted following up on the Japanese crisis.

Japanese crews continued preparations Tuesday to restore outside electric power to the Fukushima 1 nuclear complex, hoping that explosions and hydrogen fires have not damaged cooling systems for reactors and spent fuel pools and electrical connections at the reactors.

If electrical systems remain intact, power could be reconnected today to reactor unit No. 2, where an internal explosion has occurred, or at unit No. 4, where the spent fuel pool has lost all or most of its cooling water, according to US officials.

Tokyo Electric Power Co. is also hoping to restore electricity to the control rooms at units 1 through 4, to permit technicians to check the availability of instruments measuring temperatures inside the reactors and water levels in spent fuel pools, NHK World reported. Crews worked yesterday to check the condition of cabling and instruments before hooking up power to the No. 2 control room. Outside power has been restored to unit No. 5, which was shut down when the March 11 earthquake struck and has not been a center of the crisis.

But challenges and threats remain. Radiation levels at parts of the complex remain high. Work had to be suspended temporarily when smoke issued from reactor No. 3, and there now is concern about rising temperatures in a separate storage pool at the site that holds 2,000 tons of older, spent nuclear fuel. Crews began spraying water on that pool Tuesday, the Associated Press reported. TEPCO said the smoke from No. 3 was abating as of noon Tuesday local time.

"I would say optimistically that things appear to be on the verge of stabilizing," Borchardt said yesterday.

Borchardt told the commission yesterday, "It is likely that Units 1, 2 and 3 have experienced some degree of core damage. Today, all three units appear to be in stable condition," he said, adding that the integrity of primary containment shells around the reactors appears to be currently maintained.

But he added, "We don't know what the impacts of the earthquake are inside the reactor building. It may have survived perfectly well ... or there may be damage we just don't know about. We need to see what the inspection results are.

"I don't believe we have anywhere near a clear understanding of what the plant conditions are like within the reactor buildings: what kind of electrical cables have been damaged, what kinds of pumps and valves remain operable is a significant unknown.

"As the immediate crisis in Japan comes to an end, we will look at any information we can to gain experience from the event and to see if there are changes we need to make to further public health and safety."

Fukushima situation 'much better'

At a briefing for reporters yesterday, David Lochbaum, director of nuclear safety projects for the Union of Concerned Scientists, agreed that reports from Japan indicated progress in the crisis.

"There continue to be challenges, but the situation overall is much better than it was a couple of days ago," Lochbaum said. He said it was not clear whether, by the NRC's definition, the Fukushima's primary reactor containment was undamaged, or damaged but currently intact.

"Even if cooling is restored," Lochbaum said, "there may be issues restoring adequate cooling to all the material in all the vessels. It seems it's a big unknown."

Borchardt said the staff's confidence in the ability of the reactors to withstand natural disasters was based on the NRC's principle of "defense in depth," which includes redundant systems and features intended to prevent radioactive releases in the case of a severe accident.

These defenses were strengthened by the lessons learned from the 1979 Three Mile Island accident and, after Sept. 11, 2001, a recognition of risks to reactors from a potential terrorist attack utilizing a captured airliner, he said.

The NRC has a "station blackout" rule that requires plant licenses to have emergency backup electrical power sources that can continue operating if the outside power grid is down. There are rules requiring plants to be able to withstand flooding, and measures to deal with the risks of hydrogen explosions if equipment fails or is damaged in emergencies, he said.

"All of these relate in one way or another to the tragic events in Japan."

## **Safety Upgrades At US Nuke Plants Worried UN Agency (REU)**

By Tom Doggett

Reuters, March 23, 2011

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

## **US Court Questions Oyster Creek Nuclear License After Japan Disaster (NEWARKSL)**

By MaryAnn Spoto

Newark Star-Ledger, March 23, 2011

LACEY — A federal court has asked the US Nuclear Regulatory Commission to explain what impact the damage to Japan's nuclear reactor may have on the 2009 relicensing of the Oyster Creek Nuclear Generating Station in Ocean County.

In the midst of hearing arguments over whether Oyster Creek should have received an operating extension, the US 3rd Circuit Court of Appeals in Philadelphia sent a letter Monday asking the nuclear commission to "advise the court what impact, if any, the damages from the earthquake and tsunami at the Fukushima Dai-ichi Nuclear Power Station have on the propriety of granting the license renewal application for the Oyster Creek Generating Station."

That facility is nearly a carbon copy of the Oyster Creek plant.

The NRC approved a 20-year license renewal for Oyster Creek, the nation's oldest operating nuclear plant on April 8, 2009, the day before the license was scheduled to expire.

But the plant's owner, Illinois-based Exelon Corp., announced it would shut the operation in 10 years, a move that allowed the company to avoid spending \$800 million to install eco-friendly cooling towers at the Lacey Township nuclear facility.

The Sierra Club of New Jersey contends the court's request is tantamount to advising the NRC to reconsider its approval.

"I see this as a very clear letter to the NRC saying, 'You ought to reconsider your position,'" said New Jersey Sierra Club director Jeff Tittel. "This is the best thing we've seen since the plant was relicensed."

Radiation has been released at Japan's reactor since a tsunami triggered by an earthquake about two weeks ago knocked out power to the facility, disabling the system's ability to cool the spent fuel rods.

Diane Screnci, an NRC spokeswoman, said it's not uncommon for courts to ask additional questions based on current events.

"We were asked a question by the court, and we'll be providing them with an answer," she said.

Environmental groups contend that corrosion of the facility's dry well liner — a steel structure designed to contain nuclear releases — and a more recent release of tritium into nearby aquifers are evidence the 42-year-old plant is not safe.

Insisting the plant is safe, Larry Ragonese, a spokesman for the state Department of Environmental Protection, said his agency is reviewing Oyster Creek's design plans in the wake of the Japanese incident "just to see if there aren't any lessons that need to be learned here."

Previous coverage:

- US Sen. Menendez wants safety assurances on N.J. nuclear plants
- Japanese Fukushima Daiichi, N.J. Oyster Creek nuclear plants use same reactor design
- N.J. opposes 60-year limit for storing used nuclear fuel

- PSEG Nuclear's reactors in Lower Alloways Creek Township built to withstand natural disasters, operators and federal officials say
- Japan nuclear plant has second explosion, injuring 11 workers

## **Court To NRC: How Does Japan Impact Oyster Creek License Renewal? (ASBPP)**

By Kirk Moore

Asbury Park Press, March 23, 2011

A federal appeals court is asking the US Nuclear Regulatory Commission if events at the Fukushima Daiichi reactor site have changed the agency's thinking about the wisdom of granting a license renewal for the Oyster Creek nuclear power plant in Lacey.

The Third Circuit Court of Appeals in Philadelphia heard oral arguments in January on an appeal by the New Jersey Environmental Federation and other groups challenging the NRC's 20-year license extension.

In its letter, the court asks "what impact, if any, the damages from the earthquake and tsunami at the Fukushima Daiichi Nuclear Power Station have on the propriety of granting the license renewal application" for Oyster Creek.

News of the letter cheered plaintiffs in the appeal, who said it raises another range of issues for the court to consider.

"Old plants in highly populated areas shouldn't be relicensed for 20 years," said Jeff Tittel of the Sierra Club. "What the court is really telling the agency is, 'Hey, you need to take a look at this.' It's a very important sign because America needs to re-examine its policy on these old plants."

NRC spokesman Neil Sheehan said he had not seen the letter Monday and could not comment directly. But federal nuclear commissioners and staff conferred Monday morning on a plan to quickly evaluate American nuclear plants and their safety preparations against what is known so far about the Japanese accidents.

"They want the staff to do a quick look at US reactors to see if any changes are warranted," Sheehan said. That will be followed within 90 days by a more in-depth report and follow-ups in the months to come, he said.

The NRC license renewal enabled Oyster Creek owner Exelon Corp. to potentially operate the plant until 2029. But Exelon struck a deal with Gov. Chris Christie to close the plant by 2019, under pressure from New Jersey environmental officials who wanted cooling towers built to reduce the plant's daily draw of cooling water from Barnegat Bay.

Opened in 1969, Oyster Creek is a General Electric Mark 1 boiling water reactor similar to the Japanese installations, but the New Jersey plant does have a number of differences and safety improvements made over the years, according to the NRC and a recent filing that plant owner Exelon Corp. submitted to the agency last week.

(Page 2 of 2)

Inert nitrogen gas inside the reactor containment and a venting system to safely release hydrogen are designed to guard against a buildup of the explosive gas that blew out roofs and wall panels at the Japanese plants.

Emergency generators and their electrical equipment are protected from floods by elevation or watertight doors, as are emergency core cooling systems, the company says.

Oyster Creek has two backup diesel generators – engines about the size of locomotives – plus two gas combustion turbine generators. Backup systems start automatically with the loss of external power lines coming into the plant, according to the company filing. The plant has portable pumps in addition to backup systems.

"In effect, all Exelon plants have six or more ways to put water into the core for emergency cooling," the company says.

In line with NRC rules, the plants can withstand historic earthquake strength in their regions within 200 miles, between 6.0 and 6.9 on the Richter scale for Exelon's territory in Illinois, Pennsylvania and at Oyster Creek. Tsunamis are less of a threat, Oyster Creek is afforded some protection by barrier beaches that would take the first impact and nearly four miles of Barnegat Bay shallows, the company says.

While tsunamis are rare on the East Coast, hurricanes are a factor in emergency planning for Oyster Creek. The plant's location on a neck of land between the South Branch of the Forked River and its namesake stream puts it 23 feet above sea level, above the 7- to 19-foot hurricane surge height scenarios that have been calculated for that part of Barnegat Bay by the US Army Corps of Engineers and emergency planners.

The highest historic storm tide recorded in the area was about 7 feet above sea level during the great gale of March 1962, the company says.

## **Japan Disaster Spurs Court To Revisit Safety Of Exelon-owned Nuclear Plant (CHIT)**

By Ameet Sachdev And Julie Wernau

Chicago Tribune, March 23, 2011

An Exelon spokesman said, "We will consider internally what the right response is and respond by the deadline accordingly."

Sheehan said the NRC plans to respond to the court's request for more information but would not comment further.

The court's request for more information comes near the conclusion of the case.

In May 2009, a coalition of public-interest groups, including the New Jersey Environmental Federation and Grandmothers, Mothers and More for Energy Safety, challenged the NRC's decision a month earlier to extend Oyster Creek's license.

The groups charged in court papers that the license had been renewed despite evidence of corrosion in the reactor's steel containment structure.

The coalition requested additional hearings during the relicensing proceedings to address the frequency and scope of tests to monitor the containment vessel but were denied by the NRC, said Richard Webster, a New Jersey lawyer who represents the coalition.

"If there's corrosion you don't know about, that's a big problem, especially in light of containment failures in Japan," Webster said.

Legal briefs on the coalition's appeal were filed last year, and the court heard arguments in January. It's unusual for a court to ask for additional briefs on an issue that wasn't addressed before, Webster said. Then again, the events in Japan were extraordinary.

"I'm very gratified that the court is asking questions," Webster said. "It goes to show the court is taking nuclear safety very seriously."

Exelon in December announced that it would shut down Oyster Creek by 2019, 10 years before its license expires. The company negotiated a deal with the New Jersey governor's office to end power generation rather than build expensive cooling towers to handle the plant's thermal discharge.

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## **Appellate Court Wants More Information About Oyster Creek, Tsunamis And Earthquakes (PATCH)**

By Patricia A. Miller

Patch.com, March 23, 2011

The Third Circuit Court of Appeals has directed lawyers for the federal Nuclear Regulatory Commission to provide more information about the "propriety" of relicensing the Oyster Creek Nuclear Generating Station in the wake of the earthquake and tsunami in Japan.

The NRC relicensed the then-40-year-old plant on April 8, 2009 to operate for another 20 years, over the objections of a coalition of citizen groups that fought the plant's relicensing. Oyster Creek is the oldest nuclear plant in the United States.

"At the direction of the court, counsel for the United States Nuclear Regulatory Commission is directed to advise the court what impact, if any, the damages from the earthquake and tsunami at the Fukushima Daiichi Nuclear Power Station have on the propriety of granting the license renewal application for the Oyster Creek Generating Station," the court's directive states.

The court gave NRC attorneys and Exelon - Oyster Creek's owner - until April 4 to submit any relevant information.

NRC attorneys are reviewing the court's order and will respond in time to meet the deadline, NRC spokesman Neil A. Sheehan said today.

"On Monday morning, the five-member, presidentially appointed Commission that oversees the NRC was briefed by the agency's staff on reviews the agency plans to undertake in response to the Japan reactor events," Sheehan said. "One will be a "quick-look" assessment to determine if any immediate actions are needed, with the results due in 30 days. There will also be a more extensive review done. The findings of that evaluation are expected within 90 days. Of course, the NRC will continue to look for lessons learned from the events in Japan."

Richard Webster, the lead attorney for the citizens' coalition, said he was surprised by the appellate court's action.

"Normally the court doesn't do that," he said. "The more information the court has, the better. It certainly helps us make our case."

The coalition includes the New Jersey Environmental Federation, The New Jersey Chapter of the Sierra Club, the Nuclear Information and Resource Service, the New Jersey Public Interest Research Group and Grandmothers, Mothers and More for Energy Safety. Attorneys for the coalition have until April 18 to respond to submissions.

The Nuclear Information and Resource Service today launched a campaign for the permanent shutdown of the 23 General Electric Mark I reactors currently operating in the United States. That includes Oyster Creek.

"For nearly 40 years, top US safety officials at the Atomic Energy Commission and later the Nuclear Regulatory Commission have warned about the safety shortcomings of the GE Mark I design," said NIRS Executive Director Michael Mariotte. "A 1972 recommendation that the US stop licensing the design was accepted on technical grounds but denied by the AEC's (Atomic Energy Commission) top safety official, Joseph Hendrie, because it 'could very well be the end of nuclear power.' In 1986 Harold Denton, then the top safety official at the NRC, warned that Mark I containments have a 90 percent probability of failing under accident conditions."

The Nuclear Information and Research Service also said the reactors have a design flaw that places the irradiated fuel pools above the reactor core and outside the primary containment.

"When the containment buildings exploded, release pathways from the irradiated fuel pools appeared," said Mariotte. "And the explosions might not have merely exposed the fuel pools, but damaged them as well, allowing the loss of water and subsequent release of radiation."

But Sheehan said that although the Oyster Creek plant does have a Mark I boiling water reactor and containment, there are design differences.

Boiling water reactors in the United States with Mark I containments have hardened vents that allow for venting hydrogen to prevent the kind of explosions seen in Japan, Sheehan said.

Toruses - large reservoirs below the reactors used for cooling - at boiling water reactor, Mark I plants in the United States were reinforced years ago, he said.

"We are still endeavoring to learn more about differences between the US and Japanese plants, though the focus for now is on safely shutting down the Japanese units," Sheehan said.

Oyster Creek is the only one of Exelon's nuclear plants located near the Atlantic Ocean. But Exelon notes on its website that the tsunamis and earthquakes are "not typical" on the East Coast. The plant is more than five miles inland from the ocean and 23 feet above mean sea level, the company's website states.

## **Appeals Court Considers Site For Nuclear Disposal (AP)**

By Nedra Pickler, Associated Press

Associated Press, March 23, 2011

WASHINGTON – Federal appeals court judges heard arguments Tuesday in a case over whether the Obama administration had the authority to stop plans to bury the nation's nuclear waste in Nevada.

South Carolina and Washington state are among those suing the president and other federal officials to try to restart plans to ship their radioactive spent nuclear fuel to a repository 90 miles from Las Vegas at Yucca Mountain.

Congress had chosen Yucca Mountain as the leading candidate for waste disposal, but opponents are concerned about contamination and the Obama administration said it would not consider the site and would look for alternatives.

The case comes as the nation is questioning the future of nuclear plants in the wake of a nuclear crisis in Japan. A plant has been leaking radiation since a powerful earthquake and resulting tsunami hit the country on March 11.

The United States has no long-term plans to dispose of its nuclear waste. Arguments before a three-judge panel of the appeals court in Washington focused on whether the federal government has made a final decision yet that the states can appeal.

Last year, the Energy Department filed a motion with the Nuclear Regulatory Commission to withdraw its application for the Yucca Mountain repository. The commission has not ruled on that motion, but the Energy Department has gone ahead with dismantling the project.

Barry M. Hartman, an attorney arguing against the administration's decision, said Energy Department was acting on the orders of the president, who he contended can't just opt out of the choice of Yucca Mountain made by Congress in law. "He had no authority to reverse it," Harman argued.

The three appellate judges assigned to the case — all Republican nominees — questioned whether they can get involved at this point when the commission's decision is still pending. But they pressed the Obama administration's lawyer, Ellen Durkee, on when — or if — the commission is going to rule.

Durkee said she didn't know when the commission plans to act — the commission's chairman recently refused to tell reporters whether it ever will. Durkee argued there's no deadline and although there hasn't been much action lately, "the licensing proceeding is going forward."

"It's going forward by standing in place," replied the court's chief judge, David Sentelle. Sentelle asked what would happen if the commission sits on the motion with no action for 20 years. Durkee replied that a new case could be filed arguing the commission was making an unreasonable delay, but she didn't think they were there yet.

Judge Brett Kavanaugh questioned whether the Energy Department would comply if the commission overturned its decision. She said it would, while exploring options to appeal.

## **Obama Lacks Authority To Shutter Yucca Site, Court Told (MCT)**

By James Rosen, McClatchy Newspapers

McClatchy, March 23, 2011

WASHINGTON — Lawyers for Washington state and South Carolina on Tuesday accused President Barack Obama of having exceeded his constitutional power in shuttering the Yucca Mountain nuclear waste repository.

Washington Assistant Attorney General Andrew Fitz told a federal appellate court that Obama's refusal to fund continued development of the Nevada disposal site violates the 1982 Nuclear Waste Policy Act.

"He's acting unconstitutionally under the separation of powers doctrine because he doesn't have the authority under the statute," Fitz told a three-judge panel of the US Court of Appeals for the District of Columbia Circuit. "He had no authority to reverse it."

In 1987 amendments to the nuclear waste law, Congress designated Yucca as the central site for radioactive debris from the nation's 104 commercial reactors — and from nuclear weapons sites that have held even more toxic waste since the Cold War.

The government has spent \$10 billion developing the Yucca site, but Obama has stripped funding for it from his last two budget proposals to Congress.

Republicans, who have crafted legislation to revive the repository, accuse Obama of making a political gesture to Senate Majority Leader Harry Reid of Nevada, whose residents dislike the notion of burying radioactive debris from across the country at a subterranean site 90 miles northwest of Las Vegas.

Washington, home to the Hanford nuclear reservation in the eastern part of the state, and South Carolina, which hosts the Savannah River Site on its border with Georgia, filed suit against Obama. Aiken County, S.C., where Savannah River is based, and three businessmen in Washington state, also joined the suit.

Other large former nuclear weapons complexes include the Idaho National Laboratory and the Oak Ridge National Laboratory in Tennessee.

Chief Judge David Sentelle and Judge Brett Kavanaugh repeatedly challenged Fitz on whether the lawsuit by Washington and South Carolina is premature.

Sentelle and Kavanaugh said three administrative judges within the Nuclear Regulatory Commission in June had rejected a bid by Energy Secretary Steven Chu to withdraw the Energy Department license to build and operate the Yucca repository.

The case has been before the NRC since then, with no indication of when the full commission will rule on the license withdrawal.

The judges and lawyers didn't address the substantive merits of the case, avoiding the complex scientific and environmental issues tied to the Yucca site.

South Carolina Attorney General Alan Wilson echoed Fitz's courtroom claims in comments after the hearing.

"The government's decision to arbitrarily break federal law and derail Yucca Mountain is wrong and unconstitutional," Wilson said. "Congress passed laws to build Yucca Mountain as a safe repository for America's nuclear waste."

At Obama's direction, Chu set up the Blue Ribbon Commission on America's Energy Future in January 2010 and gave it two years to come up with an alternative to drilling deep tunnels beneath Yucca for nuclear waste disposal.

"Nuclear waste storage at Yucca Mountain is not an option," said Lee Hamilton, the panel's co-chairman and a former Indiana congressman. "The commission will be looking at better alternatives."

## **Appeals Court Hints Lawsuit Over Yucca Nuclear Waste Repository May Be Premature (NYT)**

By Hannah Northey

Greenwire, March 23, 2011

A federal appeals court suggested today that challenges to the Obama administration's decision to withdraw from developing the Yucca Mountain, Nev., nuclear waste repository could be premature.

But the three-judge panel of the US Circuit Court of Appeals for the District of Columbia also told the challengers that they could file a new petition when there is a final agency decision to dispute.

At least one judge appeared to question the administration's political maneuvers in attempting to circumvent the 1982 Nuclear Waste Policy Act, which outlines a limited procedure for choosing a permanent nuclear waste repository.

South Carolina, Washington and other petitioners challenged the federal government's Jan. 29, 2010, decision to withdraw "with prejudice" an application the Department of Energy had submitted to the Nuclear Regulatory Commission to construct the Yucca Mountain dump. The repository would have stored high-level nuclear waste and spent nuclear fuel.

The states maintain that the federal government's withdrawal of its application violates the very specific and prescriptive 1982 nuclear waste law, which Congress designed to be detailed and restrictive after two prior siting attempts crumbled under intense local political opposition. Senate Majority Leader Harry Reid (D-Nev.) ran his successful re-election bid in 2010 in part on his success in shutting down the project.

By changing course as it did, the government violated the Administrative Procedure Act and the National Environmental Policy Act (NEPA), the petitioners say.

But the three-judge panel today seemed to agree the petitions were filed too early, before the government had made a final decision that could be legally challenged.

NRC is currently deciding whether to allow DOE to withdrawal its application to develop the repository. The agency could decide at any time.

"We have to have finality," said Chief Judge David Sentelle.

While it is not clear whether DOE would comply with NRC's decision, Judge Brett Kavanaugh asked: "Why shouldn't we wait for the NRC to act?"

The petitioners argue the federal government never said why Yucca Mountain was scientifically unsuitable for use as a repository and that after spending more than 15 years and billions of dollars investigating the site, DOE has ended agreements with contractors, closed the site and abandoned any funding for the program.

Under the process laid out under the nuclear waste law, the federal government must move forward with the application process until NRC issues a decision on the merits of the application, the petitioners said.

The decision to withdraw the application violates NEPA because it constitutes a "major federal action" that must be supported by environmental analysis, which the government failed to conduct, they said. Even if the government did not violate NEPA, the decision is not supported by any administrative record and therefore violates the APA.

The Obama administration counters that Energy Secretary Steven Chu has broad authority under the Atomic Energy Act and the DOE Organizational Act and that he is authorized to make "discretionary policy decisions regarding disposal of nuclear waste and spent nuclear fuel."

Justice Department lawyer Ellen Durkee did not dwell on the merits of the decision, preferring instead to focus on the premature filing of the petition.

"Judicial review ... is neither appropriate nor available," Durkee said.

That prompted Sentelle to ask what would happen if NRC never acts. Durkee responded that the challengers would be required to file a new petition. She also pledged to the court that the government would comply with NRC's decision after the appeals process is complete.

Of the three judges, Kavanaugh seemed most skeptical of the government's motives.

"It does seem that DOE has made a considered decision not to comply with the law passed by Congress," he said.

Reporter Lawrence Hurley contributed.

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## **Yucca Mountain Fate Argued In Court (LVSRJ)**

[Las Vegas Review-Journal](#), March 23, 2011

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

## **Mississippi Gov. Haley Barbour Makes Early Swing Through Nevada As He Contemplates Run For President (LVS)**

By Anjeanette Damon

[Las Vegas Sun](#), March 23, 2011

Mississippi Gov. Haley Barbour swung through Reno and Carson City today, meeting with party leaders, lobbyists, lawmakers and Gov. Brian Sandoval in an attempt to prove he'll take Nevada seriously if he runs for president.

He was direct about his purpose, eschewing the traditional candidate's pre-campaign obfuscation about his real reason for being in an early contest state.

"I'm here because I'm thinking about running for president," he told reporters assembled at the Plaza Hotel in Carson City. "If I run, I will compete to win Nevada."

Nevada is the third state on the presidential primary calendar after Iowa and New Hampshire.

In a brief question and answer session, Barber said he was well received by Nevada Republicans, rejecting the idea that Southern Republicans and Western Republicans, who are traditionally more libertarian, are all that far apart on the issues.

"I don't see a big difference between Mountain Republican and Southern Republicans," he said.

Barbour also was forthright about his unconditional support for storing nuclear waste at Yucca Mountain.

"We've been collecting taxes for that specific purpose and the American people should get their money's worth," he said.

Will that position hurt his candidacy in Nevada?

"Nah," he said before turning to the next question.

When it comes to legalized prostitution, however, Barbour said that's up to Nevadans.

"We don't have legalized prostitution in Mississippi," he said. "I'd be against it if someone proposed it."

Although Barbour met with Sandoval, he said he didn't ask Nevada's popular new governor to support his presidential bid.

"He's a great guy, we're very proud of him," Barbour said. "If I were he, I wouldn't even think about endorsing anybody for president for a long, long time. I assume he's going to keep his powder dry until we get up to or even beyond the Nevada caucuses."

### **Mississippi Governor Explores Presidential Bid In Nevada (LVSRJ)**

Las Vegas Review-Journal, March 23, 2011

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

### **Last word in nuclear safety: Yucca (RALEIGH)**

By RICK MARTINEZ

Raleigh News & Observer, March 23, 2011

It's becoming increasingly clear that the biggest threat of uncontained radiation from Japan's earthquake-induced nuclear-plant disaster lies in the spent fuel rods stored on site, not the active power plant cores. I don't know if the prime minister can order that Japan's spent fuel rods be placed in a secured storage facility deep inside a mountain. But I do know that option is available to President Barack Obama. He should take it.

Although the president has claimed he's a convert to the environmental and economic benefits of nuclear power, he's gutted his support by taking off the table the long-awaited Yucca Mountain nuclear waste storage facility in Nevada. Obama has yielded to the ultimate "Not In My Back Yard" selfishness demonstrated by Nevada residents who have chosen to ignore the safety evidence generated by more than \$10 billion worth of scientific and environmental studies conducted on the project.

Instead, Energy Secretary Steven Chu has formed a panel to look for alternatives to Yucca Mountain. The president went even further by eliminating funding for Yucca's development from his proposed 2012 budget even though it has a dedicated revenue stream.

Back in 1982 when Congress passed a law creating the nuclear waste storage facility, it authorized a fee on utilities that use nuclear power. Among those that pay the fee are Duke and Progress Energy, North Carolina's electric cooperatives and the state's municipal power agencies. Since Yucca still isn't open, the money has been piling up. The fee now generates about \$750 million a year, which explains why the federal Nuclear Waste Fund has a balance that exceeds \$24 billion. North Carolina ratepayers have paid nearly \$1 billion into the fund. Earlier this month, electric utilities went to court to stop collection of the fee.

On another legal front, Washington and South Carolina have begun a court challenge of Obama's unilateral abandonment of Yucca Mountain, which the administration did without securing congressional repeal of the law that created the project.

Legalities aside, the president should learn the lessons Japan's nuclear calamities are teaching us. Obama should not only resume development of Yucca Mountain, he should speed it up.

Such a move has the Republican support he says is key to doing what's best for the American people. On March 3, 64 Republicans introduced legislation that calls for building 200 more nuclear plants in the US by 2030.

Included in the bill is a call for the Nuclear Regulatory Commission to license Yucca Mountain within six months unless there are technical and scientific reasons not to do so. Whining from Nevada tourism officials and the no-nuke crowd doesn't count.

Even if the Japanese earthquake experience further slows the development of nuclear power here, it should not slow the drive to open Yucca. If anything, Japan's experience should accelerate it. Storing spent fuel rods at a nuclear plant is dangerous and an easily avoidable risk

According to the Nuclear Energy Institute, a trade association, 64,000 metric tons of spent fuel are stored at US nuclear sites. Of that, 49,000 tons are stored in deep water pools like those used at the Japanese plants and at the Shearon Harris plant in Wake County.

What Japan is demonstrating to us is clear: the need for isolated nuclear waste storage facilities is separate from the debate about whether nuclear power is safe enough to continue as a major component of our energy portfolio. I wish the no-nuke folks and environmentalists would champion this key point - because even if they were successful in stopping the construction of new nuclear plants and in closing existing plants, one more step would be necessary.

The next logical step in nuclear safety? Gather up the 64,000 tons of nuclear waste spread throughout the country and store it inside a single mountain in Nevada.

## **Reactors' Spent Fuel Pools: Serious Safety, Security Hazards (BELLH)**

By NAJMEDIN MESHKATI

Bellingham (WA) Herald, March 23, 2011

"Probable impossibilities are to be preferred to improbable possibilities." - Aristotle

An unimaginable natural disaster which was a combination of a monster 9.0 earthquake and an ensuing powerful tsunami triggered unprecedented "secondary" and "tertiary" effects of reactors meltdown, fire and radiation release at the Fukushima Daiichi Nuclear Power Station in Japan.

What is unfolding is the realization of probable impossibilities: The compromise of a nuclear power plant, as a result of a tsunami caused by an earthquake, would be a creative mind's scenario in a Hollywood disaster movie. Yet is happening before our own eyes. And it is a rude awakening to reconsider seriously our wishful assumptions of our systems' reliability and the vulnerability of the redundant safety systems to common mode failures.

Out of the six nuclear reactors at the Fukushima plant, two have had partial meltdowns, accompanied by powerful hydrogen explosions. Thankfully, their primary containment vessels, made of concrete and steel and able to prevent radiation from escaping, were mostly holding on (at least for five of the six reactors), despite the very strong motions from the earthquake. (Reactor number 2 suffered a minor breach of the primary containment.) These reactors are not out of the danger zone yet as their fuel rods contain residual heat and they need to be cooled. Most likely this will be accomplished by dumping more seawater into the vessel, then venting the resulting steam to the atmosphere and continuing this process of "feed and bleed" until they can be stabilized.

But at present, the gravest danger at the Fukushima plant is the dire condition of the spent fuel storage facilities which contain tons of still highly radioactive and "hot" spent fuel rods. Spent fuel (otherwise known as nuclear waste) has been of a secondary concern prior to this impending disaster, despite its immense importance. In many of nuclear plants around the world, the practice is for old rods to be stored in 30- to 40-foot deep body of water pools with a cooling system to dissipate the intense heat they give off. These pools are located in the containment area. However, loss of water or its circulation could convert the pools to a wet "lethal sauna" with rising levels of radioactive steam. An explosion last Tuesday damaged the building of Reactor No. 4, its roof and, according to last Wednesday's Congress testimony of the chairman of the US Nuclear Regulatory Commission, resulted in all the water in these pools to boil dry. In his words: the radiation levels are extremely high, which "impact the ability to take corrective measures."

Spent fuel pools are currently in use at all 65 sites with operating commercial nuclear power reactors in the United States. The unfolding nightmare in Fukushima tells us that these are major safety and security sitting ducks in 33 states of the union. A major study by the National Research Council in 2005 on the safety and security of spent fuel storage found that an accidental or a terrorist attack that "partially or completely drained the spent fuel pool could lead to a propagating zirconium cladding fire and the release of large quantities of radioactive materials to the environment." It recommended that "the NRC should ensure that power plant operators take prompt and effective measures to reduce the consequences of loss-of-pool-coolant event in spent fuel pools that could result in propagating zirconium cladding fires."

More ominously, these spent fuel pools are gradually approaching their full capacity, and it is projected that up to three or four nuclear power plants will reach full capacity in their spent fuel pools, each year for at least the next 11 years.

The Japan disaster notwithstanding, and just to highlight the urgency to paying serious attention to this issue in the United States, one can point to the dangerous safety condition of the spent fuel pool at the Unit 1 of the Millstone nuclear power plant in Connecticut, which was the subject of a protracted and controversial investigation by the NRC and was the topic of a special

investigation and article in the Time magazine. This case, according to the article, resulted in some major policy changes in the NRC, as well the inclusion of all Millstone reactors in the NRC's "hall of shame," which is the high-scrutiny "watch list" of troublesome reactors.

We have to learn lessons from Fukushima and count our blessings in the United States. And urgently start, before it is again too late, decommissioning the highly risky spent fuel pools, now scattered all over the country in 33 states. This can be accomplished by reactivating the Yucca Mountain deep geologic disposal site for high-level nuclear waste, the study of which has been going on for more than 25 years with the staggering cost of \$38 billion to date.

Making Yucca Mountain the solution to the nuclear waste disposal problem is a vital public policy issue that requires bold leadership from the administration and bipartisan support. It is fortuitous that in this critical juncture, Dr. Steven Chu, a Nobel physicist, is leading the US Department of Energy. In light of what's happening in Japan, he ought to lead the effort to reconsider the decision to withdraw Yucca Mountain's license application from the NRC, restore its funding, and urgently reactivate the project.

In the age of probable impossibilities, we cannot afford to stick to wishful thinking or romantic fascination of the improbable failure of even a single one of these 65 dangerous sites. Exhibit A: Fukushima.

#### ABOUT THE WRITER

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### **AP IMPACT: US Spent-fuel Storage Sites Are Packed (AP)**

By Jonathan Fahey And Ray Henry, The Associated Press

Associated Press, March 23, 2011

The nuclear crisis in Japan has laid bare an ever-growing problem for the United States — the enormous amounts of still-hot radioactive waste accumulating at commercial nuclear reactors in more than 30 states.

The US has 71,862 tons of the waste, according to state-by-state numbers obtained by The Associated Press. But the nation has no place to permanently store the material, which stays dangerous for tens of thousands of years.

Plans to store nuclear waste at Nevada's Yucca Mountain have been abandoned, but even if a facility had been built there, America already has more waste than it could have handled.

Three-quarters of the waste sits in water-filled cooling pools like those at the Fukushima Dai-ichi nuclear complex in Japan, outside the thick concrete-and-steel barriers meant to guard against a radioactive release from a nuclear reactor.

Spent fuel at Dai-ichi overheated, possibly melting fuel-rod casings and spewing radiation into the air, after Japan's tsunami knocked out power to cooling systems at the plant.

The rest of the spent fuel from commercial US reactors has been put into dry cask storage, but regulators only envision those as a solution for about a century and the waste would eventually have to be deposited into a Yucca-like facility.

The US nuclear industry says the waste is being stored safely at power-plant sites, though it has long pushed for a long-term storage facility. Meanwhile, the industry's collective pile of waste is growing by about 2,200 tons a year; experts say some of the pools in the United States contain four times the amount of spent fuel that they were designed to handle.

The AP analyzed a state-by-state summary of spent fuel data based on information that nuclear power plants voluntarily report every year to the Nuclear Energy Institute, an industry and lobbying group. The NEI would not make available the amount of spent fuel at individual power plants.

While the US Department of Energy previously reported figures on overall spent fuel storage, it no longer has updated information available. A spokesman for the US Nuclear Regulatory Commission, which oversees nuclear power plant safety, said the capacities of fuel pools are public record, but exact inventories of spent fuel are tracked in a government database kept confidential for security reasons.

The US has 104 operating nuclear reactors, situated on 65 sites in 31 states. There are another 15 permanently shut reactors that also house spent fuel.

Four states have spent fuel even though they don't have operating commercial plants. Reactors in Colorado, Oregon and Maine are permanently shut; spent fuel from all three is stored in dry casks. Idaho never had a commercial reactor, but waste from the 1979 Three Mile Island accident in Pennsylvania is being stored at a federal facility there.

Illinois has 9,301 tons of spent nuclear fuel at its power plants, the most of any state in the country, according to industry figures. It is followed by Pennsylvania with 6,446 tons; 4,290 in South Carolina and roughly 3,780 tons each for New York and North Carolina.

Spent nuclear fuel is about 95 percent uranium. About 1 percent are other heavy elements such as curium, americium and plutonium-239, best known as fuel for nuclear weapons. Each has an extremely long half-life — some take hundreds of thousands of years to lose all of their radioactive potency. The rest, about 4 percent, is a cocktail of byproducts of fission that break down over much shorter time periods, such as cesium-137 and strontium-90, which break down completely in about 300 years.

How dangerous these elements are depends on how easily can find their way into the body. Plutonium and uranium are heavy, and don't spread through the air well, but there is a concern that plutonium could leach into water supplies over thousands of years.

Cesium-137 is easily transported by air. It is cesium-137 that can still be detected in a New Jersey-sized patch of land around the Chernobyl reactor that exploded in the Ukraine in 1986.

Typically, waste must sit in pools at least five years before being moved to a cask or permanent storage, but much of the material in the pools of US plants has been stored there far longer than that.

Safety advocates have long urged the NRC to force utility operators to reduce the amount of spent fuel in their pools. The more tightly packed they are, the more quickly they can overheat and spew radiation into the environment in case of an accident, a natural disaster or a terrorist attack.

Industry leaders say new technology has made fuel pools safer, and regulators have taken some steps since the 9/11 terror attacks to reduce fuel pool risks. Kevin Crowley, who directs the nuclear and radiation studies board at the National Academy of Sciences, says lessons will be learned from the crisis in Japan. And NRC Chairman Gregory Jaczko says his agency will review how spent fuel is stored in the US.

A 2004 report by the academy suggested that fresh spent fuel, which is radioactively hotter, be spread among older, cooler assemblies in the spent fuel pool. "You're buying yourself time, basically," says Crowley. "The cooler ones can act as a thermal buffer."

First Energy, which runs two nuclear power stations in Ohio and one in Pennsylvania, was able to reconfigure the spent fuel rods in its pools to make more room. Still, the company is now running out of space, says spokesman Todd Schneider. Ohio has 1,136 tons of spent fuel in pools and 37 tons in dry casks.

The casks in the US are kept outdoors, generally on concrete pads, but industry officials insist they are safe. Unlike the pools, the casks don't need electricity; they are cooled by air circulation.

One cask model, selling for \$1.5 million, places spent fuel inside a stainless steel canister, which is placed inside an "overpack" — an outside shell composed of a layer of carbon steel, 27 inches of concrete and another layer of carbon steel. When in place, the system stands 20 feet tall and weighs 150,000 pounds, said Joy Russell, a spokeswoman for manufacturer Holtec International of Florida.

Russell said engineers have designed the system to withstand a crash from an F-16 fighter jet and survive the resulting jet fuel fire.

Plant operators in some states have moved aggressively to dry cask storage. Virginia has 1,533 tons of nuclear waste in dry storage and 1,105 tons in spent fuel pools. Maryland has 844 tons in dry storage and 588 tons in spent fuel pools.

Utilities in Texas, though, have not. There are 2,178 tons kept in spent fuel pools at reactor sites there, and zero in dry casks. In New York, 3,345 tons are in spent fuel pools while only 454 tons are in dry storage.

No cask is totally invulnerable, but the academy report found that radioactive releases from casks would be relatively low.

"If you attacked a fuel cask and managed to put a hole in it, anything that came out, the consequences would be very local," Crowley said.

Casks can be licensed for 20 years, with renewals, said Carrie Phillips, a spokeswoman for the Atlanta-based Southern Co., which has a dozen such casks at its two-reactor Joseph M. Farley plant near Columbia, Ala. She said officials have "every expectation" the casks could last "in excess of 100 years by design."

But not the needed tens of thousands of years. For long-term storage, the government had looked to Yucca Mountain. It was designed to hold 77,160 tons — 69,444 tons designated for commercial waste and 7,716 for military waste. That means the current inventory already exceeds Yucca's original planned capacity.

A 1982 law gave the federal government responsibility for the long-term storage of nuclear waste and promised to start accepting waste in 1998. After 20 years of study, Congress passed a law in 2002 to build a nuclear waste repository deep in Yucca Mountain.

The federal government spent \$9 billion developing the project, but the Obama administration has cut funding and recalled the license application to build it. Nevadans have fiercely opposed Yucca Mountain, though a collection of state governments and others are taking legal action to reverse the decision.

Despite his Yucca Mountain decision, President Barack Obama wants to expand nuclear power. He created a commission last year to come up with a long-term nuclear waste plan. Initial findings are expected this summer, with a final plan expected in January.

"They are 13 years late," says Terry Pickens, Director of Nuclear Policy at Xcel Energy, the Minneapolis-based utility that operates three reactors in Minnesota. Xcel is building steel-and-concrete cask containers to hold old waste on site, and suing the government periodically to pay for them. "We would like them to get done with what they said they would get done."

Some countries — such as France, Japan, Russia and the United Kingdom — reprocess their spent fuel into new nuclear fuel to help reduce the amount of waste.

The remaining waste is solidified into a glass. It needs to be stored in a long-term waste repository, but reprocessing reduces the volume of waste by three-quarters.

Because reprocessing isolates plutonium, which can be used to make a nuclear weapon, Presidents Gerald Ford and Jimmy Carter put a stop to it in the US. The ban was later overturned, but the country still does not reprocess.

France produces 1,300 tons of nuclear waste per year, and reprocesses 940 tons. Still, fuel is only reprocessed once and then it, too, needs to be stored. France is expecting that engineers will eventually succeed in building a new type of nuclear reactor called a fast reactor that will use the waste it can't reprocess as fuel.

"They've kicked the can down the road," says Frank von Hippel, a director of the Program on Science and Global Security at Princeton University.

Other countries, such as Germany, store spent fuel in casks. Finland is building a repository it says will store waste safely for 100,000 years.

Even though there is no long-term storage in the US, utility customers and taxpayers have been paying for it — twice.

Customers have paid \$24 billion into a fund Congress established in 1982 to pay for such storage. The charge — a penny for every 10 kilowatt-hours — would typically add up to about \$11 a year for a household that received all its electricity from nuclear plants.

Users pay as taxpayers, too — for dry storage. Utilities that have run out of storage space in pools successfully sued the federal government for breach of contract, because it failed to keep to the 1998 deadline to establish long-term storage. By law, the money for dry casks cannot come from the nuclear waste fund, and must come from the federal budget.

## **US Nuclear Waste Problem Gains New Scrutiny (LAT)**

**Japan's nuclear accident has focused attention on the US practice of packing spent-fuel pools at power plants far beyond their capacity, which some scientists call a serious compromise in safety.**

By Ralph Vartabedian

Los Angeles Times, March 23, 2011

When the first US nuclear power plants went on line more than half a century ago, utilities built small cooling pools next to the reactors to store their radioactive waste, like the ones at Japan's Fukushima plant that overheated and probably leaked radiation into the environment.

The utilities erroneously thought the pools would be for temporary storage only: The federal government had promised it would find a safe place to bury the used-up fuel rods, which remain radioactive for thousands of years.

It has yet to make good on that commitment.

Technical miscalculations, multibillion-dollar lawsuits and political stalemates over nuclear waste have kept the decaying radioactive material stationary for decades, accumulating across the country ever since the Eisenhower administration.

Now the nuclear disaster in Japan, in which at least one spent fuel pool seems to be damaged and leaking and may have caught fire, has thrown US decisions about its own waste into sharp focus, exposing what many scientists call a serious compromise in safety.

The risks taken at the Fukushima Daiichi plant were actually less than those in the US, nuclear scientists say, because utilities here have been forced to pack more fuel rods into pools than they were designed to hold, increasing the density and therefore the chance that they could catch fire if they were to lose the water that cools them.

"The pools in Fukushima were not filled to capacity, and the accident could have been a lot worse if they were filled as densely as ours are," said Edwin Lyman, a physicist with the Union of Concerned Scientists.

The Nuclear Regulatory Commission, which oversees commercial reactors in the US, this week launched a 90-day review of reactor safety and plans a more comprehensive long-term examination of its regulations. The pools, considered by outside experts the most important nuclear energy safety issue, almost certainly will be part of that.

The decision to massively overfill the pools has been pushed by the growing inventory of nuclear waste and a lack of a place to send it.

The US now has about 65,000 tons of the material spread from the East Coast to the West Coast and from the northern woods to Mexican-border states. With growing anxiety, experts have debated the waste's short-term vulnerability to accident or terrorist attack and its long-term potential to leak into the environment through political neglect.

"US operators are going to have to go back and rethink their decisions because of what happened in Japan," said Kevin Crowley, director of the board on radioactive waste management at the National Research Council, which advises the federal government.

Crowley led a 2005 study that reported that overloading the US pools put them at risk if they were to lose cooling. The study considered a terrorist attack that could puncture a hole in the pools, as well as human errors or natural events.

Without cooling, the spent fuel can get so hot that zirconium tubing that holds uranium pellets begins to oxidize and potentially melt radioactive isotopes, sending them into the atmosphere.

The report recommended that the Nuclear Regulatory Commission force utilities to partially unload their pools and move their oldest waste into dry casks, which are widely considered much safer.

Utilities at plants all over the country have already loaded hundreds of dry casks with nuclear waste. But they could be loading much more and reducing the amount stored in pools, the study authors said.

And though utilities did rearrange fuel rods to checkerboard newer and older fuel, nuclear experts said the commission did not require plant operators to reduce the density of the fuel.

The industry maintains that there is nothing to worry about.

"We believe the pools are safe," said Rod McCullum, director of used-fuel programs at the Nuclear Energy Institute, the industry's primary trade group. "It is not necessary to move the fuel. You don't gain a considerable amount of safety by moving to dry casks."

McCullum said that the US pools have multiple layers of safety, including redundant cooling systems and leakage monitoring, though he declined to say that US pools are safer than those at Fukushima.

He said the industry would review its procedures and plans to ensure that they are adequate. And he said he believed the Japanese were handling their accident well.

"The radiation levels, while not acceptable, are manageable," he said.

The Nuclear Regulatory Commission has essentially accepted the industry's rationale on the safety of dense-packing fuel rods. Over the last two decades, the agency has repeatedly approved license applications by utilities to pack more rods into the pools.

Nuclear safety experts say that plants have packed up to five times more spent fuel rods than the pools were designed to store, though Nuclear Energy Institute officials say the pools contain no more than twice their original capacity.

The only advantage to keeping the pools packed so tightly is the cost of the dry casks, which would run about \$5 billion to \$10 billion nationwide, said Frank N. von Hippel, a Princeton University physicist who first disclosed the problem in a paper he co-wrote in 2003. He said he considers fixing the fuel pool problem one of the most important steps toward making US nuclear plants safer.

"It is such a huge risk that it is worth the cost," he said. "We may not be as lucky as the Japanese were to have the wind blowing the radioactive emissions out to sea."

The reason so much waste has built up is the failure of the Energy Department to hold to its decades-old pledge to take ownership of it, triggering multibillion-dollar law suits by utilities against the government.

Under federal law, the waste was supposed to go to a repository at Yucca Mountain, about 100 miles north of Las Vegas. President George W. Bush approved the plan in 2002. But President Obama has taken steps to kill the plan, saying he wants to find a different site.

Energy Secretary Steven Chu warned last week that it could be decades before any permanent solution for the waste is developed, so the heavily packed fuel pools will be around for a long time.

"The utilities say that even if an accident happens here, they can deal with it," said Lyman of the Union of Concerned Scientists. But, he said, the Fukushima accident shows that some events will be difficult to anticipate and plan for.

"The Japanese have run out of pages of their operating manual, and they are just making things up," he said.

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## **Special Report: Fuel Storage, Safety Issues Vexed Japan Plant (NYT/REU)**

Reuters, March 22, 2011

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

## **Mass. Officials Press NRC On Nuclear Waste, Storage Issues (WALPOLE)**

By Beverly Citizen

Walpole (MA) Times, March 23, 2011

As engineers work to contain a potential devastating nuclear meltdown in Japan, Attorney General Martha Coakley and Senate President Therese Murray are urging US regulators to refocus their attention on two plants closer to home.

Coakley and Murray sent a letter to the US Department of Energy and the Nuclear Regulatory Commission on Monday requesting that the DOE and NRC reexamine the safety of storing spent fuel rods in wet pools at the Pilgrim and Vermont Yankee power plants.

The letter indicates the NRC has repeatedly rejected the contention by Attorney General's Office that "wet fuel on-site dense storage" creates an environmental risk, but has failed to disclose the full studies to the state on which their decisions have been based.

Coakley and Murray are asking the NRC to consider mandating additional "dry cask storage" at the two plants, as well as expediting the process for developing a national nuclear waste storage solution that has languished for decades despite billions in funding being collected for the purpose of developing safe disposal.

"Despite our continuous advocacy for the NRC to consider alternative storage at these plants, the NRC has refused to do so – saying that the risk of breach and fire is 'insignificant.' The events in Japan show that a breach can occur, and we are asking the NRC to revisit that assessment," the two Massachusetts Democrats wrote.

US Energy Secretary Steven Chu has set up a Blue Ribbon Commission to study safer alternatives for the disposal of nuclear waste, but Coakley and Murray said they are "deeply concerned" that more than a decade has passed without the federal government meeting its obligation to begin the disposal of nuclear waste pursuant to the Nuclear Waste Policy Act of 1982.

A national nuclear repository planned for Yucca Mountain in Nevada never materialized over local and Congressional opposition, leaving power plants around the country continuing the practice of storing fuel rods in pools of water on-site. Some facilities store the partially cooled rods in dry, cement-reinforced bunkers.

Under the 1982 law, the federal government began collecting a fee from nuclear power generators – one-tenth of a cent per kilowatt hour of electricity generated – for the Spent Nuclear Fuel Fund in order to develop a safe central repository for spent fuel rods and highly radioactive waste by 1998. The fund, to which Massachusetts customers have contributed for almost 30 years, holds \$24 billion today, according to Murray and Coakley.

"We expect the federal government to comply with the NWPA and remove this material from our generation facilities and decommissioned sites in a timely matter," Coakley and Murray wrote.

The NRC on Monday officially renewed the 20-year license of the Vermont Yankee plant near the Massachusetts border, while Plymouth's Pilgrim plant is currently seeking a similar 20-year license renewal.

Since the earthquake in Japan, President Barack Obama has ordered the NRC to conduct a safety review of all nuclear plants in the United States.

"Nuclear power can and should play an important part of meeting our future energy needs. However, the federal government should ensure that these plants are safe and that their decisions are transparent. We are urging you to re-evaluate these issues in light of the events in Japan," Coakley and Murray wrote.

## **Alexander Says Disaster In Japan Will Sharpen Focus On Nuclear Safety (KINGPRT)**

Kingsport (TN) Times-News, March 23, 2011

US Sen. Lamar Alexander downplayed on Monday any impact that Japan's nuclear crisis might have on the future of nuclear power in the United States.

The Tennessee Republican said that at a minimum, what happened in Japan has caused nuclear power advocates to stop and take a look at best safety practices.

"But we need to keep this in perspective," Alexander said after touring construction of the Tennessee Valley Authority's \$800 million natural gas-powered John Sevier plant. "Nuclear power provides 70 percent of our country's clean electricity. It's low cost and reliable. There's never been a death in connection with our reactors. ... At our only big accident at Three Mile Island 30 years ago, not a single person was hurt. When you compare that safety record with coal and oil spills and gas plant

explosions, it's very impressive. ... Every form of energy production has some danger to it. And certainly we ought to take lessons from Japan, but TVA's nuclear reactors (TVA operates six nuclear units at three locations) and all those in the United States are among the safest operating energy producers in our country."

Alexander liked what he saw at the John Sevier facility, which is about 40 percent complete moving toward a summer 2012 completion date.

After the gas turbine facility goes online, two of four coal-fired units at the nearby John Sevier Fossil Plant will be idled, according to TVA.

TVA says the gas facility puts out 40 percent less emissions than a coal-fired plant.

## **Senator Graham Tours Oconee Nuclear (WYFF)**

WYFF-TV Greenville (SC), March 23, 2011

Despite the tragic earthquake in Japan that led to a tsunami, which then knocked out back up power at a nuclear plant's cooling system, US Sen. Lindsey Graham is still in support of expanding nuclear power in the United States.

Graham shared his thoughts after taking a tour of the Duke Energy Nuclear Plant.

"This nuclear plant I live five miles away. I've lived in this area all of my life. A lot of the people I've grown up with work here. I have faith in the American nuclear power industry. We're preparing to build two new reactor in South Carolina and one in Georgia. I think it is imperative we move forward," said Graham

Duke Energy officials took Graham, WYFF News 4 and other members of the media inside the control room of reactors one and two.

There are three reactors on site.

Graham wants the public to know he considers nuclear plants a safe and efficient form of creating energy.

"This plant has design characteristics that would prevent what happened in Japan from occurring here. We do not sit on an earthquake fault like they have in Japan. It is impossible to have an earthquake of that magnitude in this area of America," said Graham.

The Oconee County nuclear plant started generating power in 1973.

## **Graham Uses Tour To Push Nuke Power (TSSC)**

By Sammy Fretwell

The State (SC), March 23, 2011

SENECA — US Sen. Lindsey Graham was home Tuesday, talking about one of his favorite subjects: nuclear energy and why it's the best way to power South Carolina and America.

Aware that events in Japan have increased concern about nuclear safety, Graham took the media on a tour of Duke Energy's Oconee atomic power station to show why he thinks nuclear energy needs to be expanded.

Graham said the visit reinforces his belief that a nuclear disaster like that in Japan could not happen at Duke's three reactors. Graham said the US will learn some lessons from Japan but should not slow the push to develop new reactors.

Nestled in the mountains five hours from the ocean, the Duke power plant couldn't be affected by a tsunami, he noted. The reactors also are of a different design that ensures they could continue to operate safely in the event of a disaster, he said. He conceded that a broken dam at Lake Jocassee could affect the plant, but said Duke Energy is working on a plan to address such a disaster.

"This nuclear plant, I live five miles away" from, said Graham, R-S.C. "I've lived in this area all of my life. A lot of the people I have grown up with and went to high school with work here. I have faith in the American nuclear power industry."

Graham said the plant "cannot explode like a nuclear bomb."

Oconee is one of just four sites in the country that received the lowest marks on one federal scale for safety performance, according to a March 8 news release from the NRC. The Oconee plant had problems last year with clogs in a line and what the NRC said was an unsatisfactory response by Duke Energy.

Graham said, however, that the NRC's findings show that the system of regulating atomic power plants works. Duke and NRC officials at Tuesday's media tour said the problems have been addressed.

"If you showed me a reactor site where there was never a safety concern, I'd be suspicious," Graham said. "The fact that we're identifying safety concerns independent from the company itself, and the company is getting on top of it, is reassuring."

The senator faced criticism Tuesday from anti-nuclear activist Tom Clements, who disputed that all of the problems were resolved. Clements also said the press event was little more than an attempt to advance an industry on which Graham relies for campaign funds.

Clements gave reporters data showing that Graham has received in the past two years about \$40,000 in campaign contributions from those sympathetic to the nuclear industry, such as major power companies. Clements, who is with Friends of the Earth, raised those questions during a press briefing after the tour.

"The reason people in the nuclear power industry support me is because I believe in what they do," Graham told Clements. "I don't get any money from your organization because I disagree with you."

Graham and a horde of reporters and photographers started the tour outside, viewing Oconee's three reactor containment buildings – the tall visible buildings with the round tops many people recognize. Later, Duke Energy officials took the media through the plant's turbine building, where steam drives the power that runs into major transmission lines outside the facility. A network of pipes, platforms and huge tanks ran the length of the building, about the size of a football field.

Graham also visited the control room, or nerve center, for two of the three reactors. The control room contains walls of blinking lights that keep track of the nuclear reaction process. Duke executives answered the senator's questions as members of the media looked on. Graham learned that the reactors could be shut down with the push of one button, which he said was enlightening. The tour did not take the media to the company's spent fuel pools, where deadly radioactive waste is held in huge vats of water to keep them from overheating – one of the major concerns about safety at a nuclear power plant.

The first of Duke's triple reactors went on line in 1973 – the same year Graham graduated from high school. The three supply much of the power Duke provides to customers in the Carolinas.

The pressurized water reactors are just a few miles north of Seneca, located in the middle of upscale communities along the shores of Lake Keowee, at the foot of the Appalachians. The Oconee nuclear station is one of four sites in South Carolina that supply atomic power. Another site near Hartsville, like Oconee, has faced more intense NRC scrutiny recently because of questions about how the plant was operated.

## **Sen. Graham: 'I Believe In Nuclear Power' (ADERSN)**

Anderson Independent-Mail, March 22, 2011

SALEM — US Sen. Lindsey Graham stood in the welcome center of Duke Energy's Oconee Nuclear Station and said he had learned something new about his hometown nuclear plant.

"I didn't know how easy it is to shut down," Graham said. "There's one button they can press and it drops the fuel rods. With one button, they can shut down the reactor within a second."

Graham was visiting the three-unit nuclear station Tuesday along with about 20 guests from the media and top Duke officials. For the first time since 2007, Duke Energy allowed outside cameras to shoot the station's football-field-sized turbine/generator room and a control room for two of the reactors.

Graham repeated his call for the American public to support expanded nuclear power even as scientists study the causes and lessons that can be learned from the partial meltdown of a reactor in Japan after a devastating earthquake and tsunami there on March 11.

At stake, Graham said, is a clean energy source for future generations of Americans. Wind and solar power, he said, can't replace the coal-fired plants that dominate the energy production landscape today, but nuclear can.

Graham said he fears that the nation's nuclear power renaissance could be threatened by calls for a moratorium on new plants.

The nation's first two new nuclear plant projects since 1979 are the Southern Co.'s Vogtle Plant on the Savannah River outside Waynesboro, Ga., and SCANA's new plant outside Jenkinsville, S.C. Both are within two hours' drive of Anderson.

Duke's chief nuclear officer, Dhiaa Jamil, heads operations at all seven of the energy company's reactors at three sites in North Carolina and South Carolina. He said about half of all energy going to its Carolinas customers is generated at nuclear plants. This is ahead of the national rate of nuclear power, which is 20 percent. Eighty percent of power in France is generated at nuclear plants.

Graham also underlined the station's role in the local economy, as it has a \$90 million payroll and has paid \$27 million in property taxes to Oconee County. About 1,500 people work regularly at the plant, said Richard Freudenberger, the plant's regulatory support manager. Another 2,000 or so are on site now working with Duke on upgrades and refueling the station's first unit.

Graham said he saw nothing in the tour to change his mind about the safety of nuclear power; his primary purpose in organizing the event was to familiarize the public with a plant's operations.

"No one working here has ever been hospitalized because of radiation exposure," Graham said. "Every worker when they leave is tested for radiation."

He said federal regulations, including Nuclear Regulatory Commission inspectors stationed at every nuclear plant in the nation year-round, are rigorous and reflect lessons learned from the meltdowns at Three Mile Island and Chernobyl. Duke Energy also increased security measures dramatically at Oconee Nuclear Station after the terrorist attacks of 9/11, with several secure checkpoints and armed guards stationed throughout the facility.

"If you short-change safety, you always pay for it later," Graham said. "So the regulatory and permitting process is very strenuous."

Preston Gillespie, vice president for Duke Energy and head of operations at Oconee Nuclear Station, said Duke has been sending engineers to the Institute of Nuclear Power Operations in Atlanta to work through data coming from the disaster in Japan and share changes in operations that should come of it.

The nuclear industry set up the institute in 1979 a few months after the meltdown at Three Mile Island to share safety standards and operating procedures. Oconee Nuclear Station started operating in 1973.

"The industry itself has pulled together a team in Atlanta to collect and disseminate data about the problem in Japan," Gillespie said.

Graham repeated his praise for the Obama administration's \$36 billion in loan guarantees for energy companies wanting to invest in new reactors; and he repeated his call for a central repository for spent fuel rods at Yucca Mountain in Nevada.

Spent fuel rods containing beads of uranium are removed about every 18 months from the reactors at Oconee Nuclear Station and stored in cooling pools. After nine years these radioactive rods are moved to a dry-cask storage facility on site.

Gillespie said the company cannot reveal how many spent fuel rods are in storage at Oconee Nuclear Station, other than saying there remains a "prudent operating reserve" of space left.

Environmentalist Tom Clements of Columbia asked Graham during his press briefing about campaign contributions the senator has received from political-action committees connected to the nuclear industry — including \$17,500 from Duke since 2001. Clements, a member of Friends of the Earth, has worked to block construction of four new reactors in South Carolina, including a new Duke site in Cherokee County.

Clements said modern reactor designs, including the AP1000 model from Westinghouse that Duke intends to use at a new site in Cherokee County, are not robust enough to contain a radiation leak.

The nearly 40-year-old domed towers at Oconee Nuclear Station are among the strongest in the industry, with four-foot-thick cement containment walls reinforced by steel cables.

"I'm here because I believe in nuclear power," Graham said. "I don't get money from your organization because I don't support your views."

## **Inside Oconee Nuclear: How Safe Is Upstate's Nuclear Power Plant? (WSPA)**

By Robin Kanady

WSPA-TV Asheville (NC), March 22, 2011

News cameras have not been inside Oconee Nuclear Plant, since right after 9/11. But Tuesday we got a rare look at plant operations.

News Channel 7 was there with Senator Lindsey Graham as he went inside the nuclear plant to review safety measures after Japan's nuclear disaster caused by an earthquake.

Inside the turbine room at Oconee Nuclear, which is right beside the plant's nuclear reactors, it can heat up to over 100 degrees. Having the right cooling systems can help prevent a nuclear disaster like the one following Japan's earthquake and tsunami. Senator Graham says, "This plant has a lot of redundancies when it comes to cooling the reactor."

US Senator Lindsey Graham went with TV cameras inside Oconee Nuclear Tuesday for a rare look at safety measures in place at the plant. Graham says there are some major differences between the Oconee plant and the ones in Japan. He says, "This plant (Oconee) has design characteristics that would prevent what happened in Japan from occurring here. We do not sit on an earthquake fault like they have in Japan."

Graham says the biggest concern at Oconee is a radiation leak. Plant officials say releasing small amounts of gas are routine and permitted because of pressure build-up in the reactors. But a Duke Energy Spokeswoman says there have not been any radiation leaks in the facility's nearly 40 year history.

In light of the earthquake in Japan, Oconee Nuclear, along with plants around the country, is reviewing equipment and procedures.

Graham says it's too early to tell the exact lessons that can be learned from Japan, but he points to September 11 as an example of changes being made because of a man-made disaster. Graham says, "We have reinforced the containment vessel.

One of things we learned after 9-11 is that someone could drive a plane into a nuclear plant. A terrorist attack is something we train for and prepare for."

Graham also says the country is on the verge of a nuclear power renaissance. He says coal-fired plants produce major pollutants and that nuclear power is a much cleaner source.

## **Nuclear Industry Works To Sustain Rebirth (GRNVN)**

By Anna Simon

Greenville News, March 23, 2011

The nuclear industry in the United States and its allies have launched a campaign to reassure the public and keep alive a budding renaissance of new reactor construction as Japan struggles to control a damaged nuclear complex.

On Tuesday, U.S. Sen. Lindsey Graham invited the press on a tour of the three-reactor Oconee Nuclear Station on the shores of Lake Keowee. Graham said he fears an illogical reaction to the events in Japan will snuff out what until this moment has been the quickening rebirth of reactor construction.

"My fear is that companies who decided to embark on a new building program for nuclear power will be deterred," Graham said.

Nuclear power is clean and safe, Graham said. His single concern is spent fuel storage, and Graham said he is calling on the Obama administration to rebate the money that utility ratepayers have been paying to build a long-term repository at Yucca Mountain in Nevada.

"Once you close Yucca Mountain, then you are requiring facilities like this to store spent fuel on site in perpetuity. I think that was a huge mistake," Graham said.

Graham praised President Barack Obama's inclusion of \$36 billion in loan guarantees to build the nation's next generation of nuclear plants.

"The loan guarantees will reassure the private sector that if you invest in building a nuclear power plant, the government will stand behind you, which will give some confidence to the private sector to invest in nuclear power," Graham said.

The planned U.S. plants are "totally different" from those in Japan and have gravity-fed cooling systems, Graham said.

As Graham expressed hope that a domestic nuclear renaissance will move forward, Tom Clements, a nuclear campaign coordinator in the southeastern region for the environmental group Friends of Earth, said nuclear industry contributions account for a third of political action committee contributions to Graham's last campaign.

Graham has become a paid spokesman for the nuclear industry, said Clements, who ran on the Green Party ticket last year in an unsuccessful effort to defeat Republican U.S. Sen. Jim DeMint.

Graham said the contributions came because of his support for the nuclear industry, not the other way around, and he is proud of contributions donated by employees at plants like Oconee.

"I believe in nuclear power," Graham said.

The press tour was done at Graham's request, said Sandra Magee, a Duke Energy spokeswoman at Oconee.

Duke and the industry "want to make sure that people still understand the value of nuclear power and the contribution it makes," Magee said.

There will be lessons learned from Japan, Graham said.

However, he expressed confidence in safeguards at U.S. nuclear plants, including plans put in place in the 1980s to enable back-up power in the event of blackouts and work following the terrorist attacks of Sept. 11, 2001, to strengthen containment structures.

"America needs as much safe, abundant, affordable power as possible for our economy in the 21st century," Graham said, calling for use of all energy technologies including nuclear, clean coal, natural gas, solar and wind.

Graham said he has changed his mind on the issue of reprocessing, as is done in France, reducing the amount of waste to be stored. Graham said Energy Secretary Steven Chu has convinced him that there is new technology to develop advanced systems rather than spending millions to duplicate the 1970s technology used in France.

"I would like the Savannah River site in South Carolina to be the demonstration site to come up with these new waste disposal systems for nuclear power," Graham said.

"Like everybody else, I want to know why can't this happen here," Graham said as he toured the control room for units 1 and 2 of the plant's three reactors.

Duke hopes to put two next-generation nuclear reactors online at a Cherokee County site in 2021 and 2022. The Charlotte-based utility's chief executive officer, James Rogers, recently told GreenvilleOnline.com. that Duke hopes to have licenses from the U.S. Nuclear Regulatory Commission in 2013 for the \$11 billion plant.

Half of the electricity Duke provides in the Carolinas is produced by nuclear power.

CBS News reported Tuesday that its CBS News Poll taken following the start of the events in Japan found that 50 percent of Americans disapprove of building new nuclear plants, an increase of 16 points since the question was last asked in 2008. The network reported that its survey found 43 percent approve of building more nuclear plants, a drop of 14 points from 2008. The poll of 1,022 adults nationwide has a margin of error of plus or minus 3 percentage points, the network reported.

### **NRG Casts Doubt On Reactor Plans (WSJ)**

By Rebecca Smith

Wall Street Journal, March 23, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

### **South Texas Nuke Plant Expansion Faces Delays (HOUBIZ)**

Houston Business Journal, March 23, 2011

Nuclear Innovation North America LLC is scaling back its expansion plans for the South Texas Project until the US Nuclear Regulatory Commission and other stakeholders can effectively assess the impact of the events in Japan.

Nuclear Innovation North America (or NINA) is the company jointly owned by NRG Energy Inc. and Toshiba Corp. that is developing two nuclear reactors at the South Texas Project near Bay City, about 80 miles from Houston.

Given the tragedy of the earthquake and tsunami that struck Japan on March 11, NINA officials will limit work on the South Texas Project expansion to securing a license and a federal loan guarantee for the nuclear project.

Tokyo Electric Power Co. employees in Japan are still working to stabilize the reactors at the Fukushima Daiichi nuclear plant. The outcome of those efforts may affect the future of nuclear power development throughout the world.

Executives with NRG Energy, Toshiba and CPS Energy are all watching developments in Japan closely.

"Since STP is very differently situated from the stricken nuclear plant in Japan — 10 miles from the Gulf of Mexico, in a non-seismic area with hardened watertight protection around both its backup generation and its spent fuel storage facilities — it is not obvious to us that any modifications are necessary to regulatory requirements applicable to either our existing or planned nuclear facilities," said David Crane, president and CEO of New Jersey-based NRG Energy (NYSE: NRG).

Meanwhile, CPS Energy officials on Monday released a statement that San Antonio's municipally owned utility has decided to suspend discussions indefinitely with NRG Energy with respect to buying additional supplies of nuclear power from the South Texas Project.

CPS Energy is not ruling out future discussions with NRG, however.

CPS Energy owns a 40 percent interest in South Texas Project and a 7.625 percent minority ownership in two units that have yet to be constructed.

### **NRG CEO: Slashing Loan Guarantees Would Cripple Nuclear Industry (WSJ)**

By Naureen S. Malik

Dow Jones Newswires, March 23, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

### **TVA Execs Discuss US Reactor Safeguards As Japan Struggles With Nuclear Crisis After Quake (AP)**

Associated Press, March 23, 2011

HUNTSVILLE, Ala. — Two executives with the Tennessee Valley Authority said Tuesday that their information and analysis indicate the utility's six reactors would have weathered a powerful earthquake like that which prompted Japan's nuclear emergency, a claim that drew skepticism from an environmental activist.

TVA's senior nuclear communications manager Ray Golden and chief nuclear officer Preston Swafford discussed Japan's nuclear emergency with reporters in Huntsville in describing safeguards at TVA's nuclear plants along the Tennessee River in Tennessee and Alabama. Swafford said some of the differences with Japan's plants stem from "redundant" safety and power systems installed at nuclear plants in the United States after the September 2001 terrorist attack.

TVA has invited the media to a Friday tour at its Browns Ferry Nuclear Plant in Athens, Ala., which has boiling water reactors similar to the malfunctioning reactors in Japan. TVA has said the Browns Ferry Plant was designed to withstand a 6.0-magnitude quake based on its distance from the New Madrid fault.

The TVA's Watts Bar Nuclear Plant at Spring City, Tenn., and its Sequoyah plant at Soddy-Daisy, Tenn., are designed to withstand a 5.8-magnitude quake based on an 1897 tremor at Giles County, Va., officials said.

Swafford said he and others at TVA "expect to learn a lot from the Japan event" in which the magnitude 9.0 quake touched off a devastating tsunami along a wide swath of Japanese coastline.

Swafford said no TVA nuclear plant is vulnerable to a flooding emergency from a break of any dam or multiple dams.

Stephen Smith, director of the Southern Alliance for Clean Energy, said of TVA's claim: "Without some documentation of the assumptions that were made to come to that conclusion, talk is cheap."

"They should put that documentation up on their web site and let it be examined," Smith said in a telephone interview. "Maybe it's true."

Smith said the nuclear industry is "in full-scale damage control mode right now."

Swafford said TVA has invited the media to a Friday tour at the Browns Ferry Plant, where one of the reactors is currently idle.

Days after the disaster in Japan, TVA called off a long-scheduled media tour at its Watts Bar plant that is the site of a second unit that is the nation's only reactor under construction.

The TVA board at its April meeting in Chattanooga, Tenn., is expected to discuss committing funds to future nuclear projects.

Golden said changing the pace of the utility's nuclear plans would be "up to the board."

TVA, the country's largest public utility, supplies power to about 9 million people in Tennessee, Alabama, Mississippi, Kentucky, Georgia, North Carolina and Virginia.

## **TVA Officials Confident In Its Nuclear Plants (SDS)**

Scottsboro (AL) Daily Sentinel, March 23, 2011

TVA officials confident in its nuclear plants

Reactors Safe and Reliable TVA officials confident in its nuclear plants

While admitting that its nuclear reactors at the Browns Ferry Nuclear Plant near Athens are similar to the ones at Japan's Fukushima Dai-ichi facility TVA's chief nuclear officer Preston Swafford said Tuesday that the utility's units would have survived the effects of an earthquake and tsunami that crippled the Tokyo Electric Power Co. reactors.

"The Japanese reactors handled an earthquake 10 times bigger than they were designed for," Swafford said during a meeting with reporters in Huntsville. "The plant was doing a normal shutdown until the tsunami struck. Then the emergency diesel generators and switch gear failed."

TVA senior manager of nuclear communication Ray Golden accompanied Swafford.

The utility is continuing construction on a second reactor at its Watts Bar Plant near Spring City, Tenn. Design and engineering work continues on one unit at the Bellefonte Nuclear Power Plant near Scottsboro though no decision has yet been made to complete the facility. Golden said that the utility should be ready to load fuel at its Watts Bar site in approximately 300 days.

TVA's Board of Directors may discuss continued work at Bellefonte at its April board meeting in Chattanooga. Between 400-500 employees and contractors work at the site each day preparing engineering plans and developing upgrades needed during the construction process. The plant was idled before construction was completed.

"It will be up to our board to make a determination on Bellefonte," Golden said. "If they don't take any action there will be an August meeting where they may consider it. Right now we're thinking this unit, if we go forward with it, will be (ready) in the 2018 range."

Opponents of nuclear power have come out against not only the construction of any new nuclear plants but the continued operation of the energy source in the US in the wake of the accident at Fukushima Dai-ichi.

"In the light of the unfolding tragedy in Japan, the United States must revisit all nuclear issues..." "Earthquakes are not unusual in Japan. If an advanced, industrial nation with all known safeguards in place can be blindsided by such an event the United States should question all its assumptions about nuclear technology," a spokesperson for the Blue Ridge Environmental Defense organization said on March 19.

Swafford said there had been misinformation on the Japanese accident in part because of communication barriers and because of the difference in culture. He said there was no need for scaring people unnecessarily. More than 8,000 people died in the earthquake and tsunami and thousands more are listed as missing.

"It's so sad at the carnage that has occurred in Japan and all the deaths," Swafford said. "But the news has become more focused on the nuclear incident than on those affected by the earthquake and tsunami. In the end there probably will not be one death tied to the nuclear situation."

"There's no reason to add more nuclear power with its legacy for our children of radioactive waste and health concerns when there are safer and cheaper ways to produce electricity," Gretel Johnson, founder of Mothers Against Tennessee River Radiation said.

Swafford said all US nuclear plants have "redundant" safety and power systems due to a number of factors including the September 2011 terrorist attack. No TVA plant is susceptible to damage from a flooding emergency from a dam break or "worst case" from multiple breaks.

"Nuclear energy is a complex subject. It is very difficult for most people to equate," Swafford said. "But, it's a well-understood technology that is proximity safe."

Media members have been invited to tour TVA's Browns Ferry Nuclear Plant on Friday. One of the three units at the plant is in the refueling stage.

Editor's Note: For more information on TVA's response to the nuclear accident in Japan and its plans for the future of nuclear power check out Thursday's print and online edition of The Daily Sentinel.

## **TVA Addresses Brown's Ferry Concerns (WAAY)**

By Reid

WAAY-TV, March 23, 2011

The TVA is addressing concerns about the Browns Ferry Nuclear plant following the disaster in Japan. Because of the catastrophe, officials are reviewing safety procedures. Chief operating officer Bill Mccollum is reminding residents how safe they're nuclear plants already are. "We also challenged our operations to see if there are lessons learned that we can apply from Japan" Mccollum said

The Tennessee Valley Authority has three nuclear plants. Two in Tennessee and one right here in Limestone county. The Browns Ferry plant is located near Athens in Tanner. It was built in the 1960's and went on-line in 1974. It produces enough electricity to provide power for roughly 2 million homes. Bill Mccollum says local residents have nothing to fear. "Our plants are designed, built and operated safely and have many redundant features in case we have any sort of emergencies".

Some residents living near the Browns Ferry plant say they are used to living so close to the Nuclear plant and they feel safe. Matt Jackson lives near Athens. "It was a terrible thing that happened in Japan, but I think its something we can learn from and I certainly feel safe having a nuclear plant around here" Jackson said. Decatur resident Jim Pyron shared similar feelings. "Its kind of always in the back of my mind that I do live this close and something could happen. But you try not to think about it".

The Browns Ferry facility is a boiling water reactor. It has a safety feature called containment venting. It works by safely removing hydrogen from the containment structures. TVA employs one thousand people to maintain and operate Browns Ferry. The plant has an annual payroll of 107 million dollars.

## **NRC Looks At Lubrication Concern At Nuclear Plant (AP)**

Associated Press, March 23, 2011

FULTON, Mo. (AP) -- A Nuclear Regulatory Commission inspection team is at Ameren Corp.'s Callaway nuclear plant near Fulton after concerns were raised about lubrication of an auxiliary feedwater pump.

An Ameren spokesman says the inspection is unrelated to heightened concerns at nuclear plants following the damage to the plant in Japan.

The NRC says an oil sample taken Feb. 8 showed the auxiliary pump might have been inadequately lubricated. The pump is used to supply water to steam generators during some accident conditions.

The oil sample indicated that the oil level may have been too low to properly lubricate the pump bearing. If that happens, the pump may not be able to run long enough during an accident scenario.

The NRC says the inspection was begun because a similar finding occurred at Callaway in 2009.

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## **NRC Conducts Special Probe In Callaway (AP)**

By Don Norfleet

Fulton Sun, March 23, 2011

A United States Nuclear Regulatory Commission (NRC) inspection team conducted a special inspection Monday of the Callaway Nuclear Power Plant after concerns were raised about lubrication of an auxiliary feedwater pump.

Mike Cleary, an Ameren Missouri spokesman, said the inspection is the lowest of three NRC inspection levels that go beyond the normal, ongoing inspections conducted by the resident NRC inspectors based at the plant.

"It is not related to the current nuclear plant problems in Japan," Cleary said.

Cleary said the current inspection is in response to a Feb. 8 routine oil sample taken during normal maintenance on a pump.

The oil showed discoloration, Cleary said, and a subsequent inspection of the pump bearing found some wear.

"Callaway Plant personnel identified the issue during routine maintenance and reported it to the NRC," Cleary said.

The oil and bearings were replaced. "An engineering evaluation showed the pump would have performed its intended function if needed," Cleary said.

The NRC said the pump is used to supply water to steam generators during some accident conditions.

The oil sample indicated the oil level may have been too low to properly lubricate the pump bearing. The NRC was concerned that if that occurred, the pump may not have operated as efficiently during an accident.

The NRC reported the inspection was ordered because a similar finding occurred at the Callaway Nuclear Power Plant in 2009.

## **Durbin, Kirk To Host Forum On Ill. Nuclear Safety (AP)**

By Tammy Webber

Associated Press, March 23, 2011

CHICAGO

Illinois Sens. Dick Durbin and Mark Kirk have asked federal and state nuclear experts to attend a forum to discuss the safety of the state's nuclear reactors and whether Illinois is prepared for an emergency, citing Japan's still-unfolding crisis.

Officials from the Nuclear Regulatory Commission, the Illinois Emergency Management Agency, Exelon Corp. and environmental groups say they plan to attend the meeting Friday at the Dirksen Federal Building in Chicago.

"I have no reason to believe we have a particular concern (in Illinois), but what happened in Japan, I think, is fair warning that we ought to periodically review this," Durbin said Tuesday.

Some watchdog and environmental groups, however, have said they're concerned that four of the state's 11 reactors – at the Dresden and Quad City generating plants – are of the same design and about the same age as those involved in Japan's nuclear crisis.

Dave Kraft, director of the Nuclear Energy Information Service, an Illinois watchdog group, said the Mark I boiling-water reactors are flawed because spent fuel rods are stored above the reactor containment chamber instead of at ground level, and the containment system around the reactor is too small and could allow pressure to build quickly in the event of an emergency.

The head of the Illinois Environmental Law and Policy Center, Howard Learner, said he is concerned about plans by Exelon to "uprate" or rev up the amount of electricity generated by the Mark I reactors, all of which already are more than 40 years old.

"It's time for Exelon and the Nuclear Regulatory Commission to hit the pause button and go back and carefully reassess the risks and rewards," squeezing more power from the plants, Learner said. "I'm not throwing stones at the nuclear plants, but it would be prudent and wise at this point."

President Barack Obama has called on the NRC to review the nation's nuclear plant safety and Illinois Gov. Pat Quinn said the state also will conduct a "full-scale" review. Quinn also wants to increase the annual fees Exelon pays to Illinois – currently pays about \$20 million annually – to ensure the state Emergency Management Agency has what it needs to oversee safety at the plants.

Illinois has six nuclear plants, with a total of 11 reactors, more than any other state in the US. In addition to NRC inspectors, the state has a on-site inspector for each plant.

Although the chance of an earthquake as large as the one that rocked Japan is remote and a tsunami all but impossible in Illinois, Kraft said he is not sure the state's reactors could withstand something like an airplane crash.

Exelon spokesman Marshall Murphy said all the company's reactors are safe and built to withstand natural and potential manmade disasters, and that the uprating also is safe.

But that doesn't mean the company won't learn from the events that are unfolding in Japan, he said.

"There will be an opportunity to learn more from Japan ... and we will apply (those lessons) if we need to," Murphy said.

## **Nuclear Illinois Helped Shape Obama View On Energy In Dealings With Exelon (BLOOM)**

By John McCormick

Bloomberg News, March 23, 2011

If Illinois were a country, it would have the world's 12th-largest number of nuclear power reactors, behind China and ahead of Sweden. No other US state generates more energy through fission.

Exelon Corp. (EXC), which operates all 11 of the state's reactors, is no stranger to President Barack Obama. The Chicago-based company has served as a source of campaign contributions and also created environmental and political challenges to navigate.

Even as his administration reviews all US reactors following the March 11 earthquake and tsunami that triggered radiation leaks from a crippled Japanese plant, Obama last week called nuclear power an "important part" of his energy agenda. That mirrors the balancing act he displayed in his adopted home state, which generates more than a tenth of US nuclear power.

"It's a large part of our power generation," said Senator Mark Kirk, a Republican who won Obama's old seat in November. "And we have more waste than any other state."

Obama's relationship with Exelon, the nation's largest US nuclear power producer, led his top 2008 Democratic primary opponent, then-Senator Hillary Clinton of New York, to charge that he had "cut some deals" with the industry.

His experience also reflects his handling of political concerns in 2005-2006 from radioactive tritium leaks at Illinois reactors. And it includes battles over disposal of nuclear waste, an issue Kirk is raising following the Japanese disaster.

"We need to get nuclear waste away from Lake Michigan," Kirk, 51, said. "The United States needs a permanent nuclear waste storage solution, and that's overwhelmingly Yucca." The Obama administration announced in February 2009 that it wouldn't move forward on a proposed storage center at Yucca Mountain in Nevada.

Democrat Dick Durbin, the state's senior senator, and Kirk plan a Chicago briefing March 25 to review the safety of Illinois reactors and address waste storage with Exelon representatives.

Obama's 2012 budget calls for an additional \$36 billion in US loan guarantees for new nuclear power plants.

"The administration's energy priorities are based solely on how best to build a 21st century, clean energy economy," White House spokesman Clark Stevens said yesterday in a statement. "That policy is not about picking one energy source over another."

The existing 104 reactors in the US provide about 20 percent of the nation's electricity. Those in Illinois provide about half the state's power.

Obama's Exelon ties came under fire as he campaigned for the Democratic nomination for president in 2008.

"Senator Obama has some questions to answer about his dealings with one of his largest contributors, Exelon, a big nuclear power company," said Clinton, then his party primary opponent and now his secretary of state. "Apparently he cut some deals behind closed doors to protect them from full disclosure."

The Washington Post at the time reported that Clinton stretched the truth, although it also said Obama had "exaggerated his legislative accomplishments" as a nuclear- industry watchdog.

Obama also offered assurances to Nevadans on waste storage during the 2008 campaign.

"I will bring to this issue not just independent judgment and careful deliberation, but a personal appreciation that comes from my own experience of living in the back yard of hazardous nuclear materials," Obama wrote in a May 2007 letter to the editor of the Las Vegas Review-Journal.

Exelon and its employees were the seventh-largest source of campaign money for Obama, 49, during his four-year Senate career, contributing at least \$71,850, according to the Washington-based Center for Responsive Politics.

When he ran for president, the company's employees gave at least \$200,000, and board member John Rogers Jr., chairman of Chicago-based Ariel Investments LLC, was a top Obama fundraiser.

Exelon "actively engages in the political process and supports candidates from both parties who we believe will support sensible energy policies," company spokeswoman Judith Rader said yesterday in a statement.

Obama's legislative involvement with nuclear energy started after Exelon issued a December 2005 news release that said it had detected "higher than normal concentrations" of tritium in an underground pipe inside the boundary of a plant it operated in Braidwood, about 60 miles (97 kilometers) southwest of Chicago.

Tritium, a radioactive form of hydrogen and a byproduct of nuclear power generation that in large doses can increase cancer risk, was found days later in a home's drinking water well near the plant, although levels didn't exceed safety standards.

Two months later, Exelon announced tritium leaks had been found at two more nuclear power plant sites in Illinois. One of those, a plant located in Grundy County, about 60 miles southwest of Chicago, has the Mark 1 design, developed by General Electric Co. (GE) in the 1960s and used at the Fukushima Dai- Ichi plant in Japan.

On March 1, 2006, Obama introduced legislation that would have required utilities to notify federal nuclear regulators as well as state and county officials whenever there was “an unplanned release of fission products in excess of allowable limits.”

Exelon and other industry interests said they were already doing more reporting voluntarily and the measure wasn't needed. A modified version of it never became law.

Two top former Obama aides, onetime senior adviser David Axelrod and ex-White House Chief of Staff Rahm Emanuel, had business dealings with Exelon earlier in their careers.

Emanuel, who left the administration to successfully run for mayor of Chicago, worked on the \$8.2 billion merger that created Exelon in 2000. Axelrod, currently helping run Obama's re-election bid, had ownership in a consulting business that had Exelon as a client before he joined the White House in 2009.

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## **Critics Cite 'Severe Seismic Risk' At California Nuclear Power Plants (CSM)**

Christian Science Monitor, March 23, 2011

Representatives from both facilities said they could withstand the maximum events predicted for their sites. But wary legislators weren't buying such confidence. Skip to next paragraph

"In light of the disaster in Japan, I think the average person's response is: We should be safer," said state Sen. Christine Kehoe (D) of San Diego. "They weren't expecting a 9.0 earthquake."

Pacific Gas and Electric (PG&E), which runs the Diablo plant, has begun its relicensing process, despite the fact that current NRC licenses for the two reactors don't expire until 2024 and 2025.

That's a bad move, considering the discovery two years ago of a previously unknown fault just a half mile from the plant, says state Sen. Sam Blakeslee (R) of San Luis Obispo, who wants the utility to withdraw its license application until new studies have assessed the potential damage from this new discovery.

"I'm concerned mostly about this culture of disregard of risk," Senator Blakeslee, who has a doctorate in geophysics, told the panel. "It's potentially putting my constituents in a place of great risk."

Lloyd Cluff, PG&E's director of earthquake risk management, defended the facility's approach to as-yet-unknown dangers.

"There's uncertainty in everything," Mr. Cluff said, pointing out that their disaster modeling took unforeseen events into account. "We don't see a concern about the uncertainty," he added.

Senator Kehoe turned her fire on Southern California Edison, who run the San Onofre plant, in addressing what she considers complacency about the maximum events contemplated in the plant design.

While San Onofre is built to withstand a magnitude 7 earthquake, no reassessment had been done in light of a 7.2 quake – just across the Mexico border – in April 2010.

Caroline McAndrews, director of licensing for the San Onofre plant, says, "We do evaluate for the probability of those larger earthquakes," McAndrews said, "and we have confidence."

The NRC cited the San Onofre plant for “serious issues” two years ago, notes USC's Meshkati, “and after people raised questions, they came up with what I call ‘reasonable’ or ‘satisfactory’ answers, but – satisfactory isn't good enough. They have to go above and beyond.”

After such disasters as Three Mile Island and Chernobyl, the modern nuclear industry is exceptionally safe, with multiple redundancies and backup plans for emergencies, says Gwyneth Cravens, author of “Power to Save the World: The Truth About Nuclear Energy.” As the technology continues to improve, she says, the most pressing issue is human error. Wakeup calls, even though framed by such human tragedy as the events unfolding in Japan, are what the industry needs to further training.

“Human engineering is a big issue,” she says.

It is too early to assess all the lessons of the Fukushima crisis for the US nuclear industry, says Meshkati, who sat on a committee that oversaw the followup to the BP Gulf Oil disaster. But if he could point to one lesson that seems to run through disaster preparedness of all sorts, he says, it is “too much confidence.”

## **California Lawmakers Push For New Seismic Safety Studies Of Nuclear Power Plants (SCPR)**

Southern California Public Radio, March 23, 2011

In the aftermath of Japan's magnitude 9.0 quake, California lawmakers want a better grasp of the risks of a nuclear accident here. They're pressuring the utilities that operate California's nuclear power plants to complete new seismic studies.

Japan is more prepared than any county in the world to cope with massive earthquakes and tsunamis. Since seismologists began recording such events, a dozen massive earthquakes have rocked the island nation.

Geologists figured the fault line near Fukushima was capable of producing a 7.9-magnitude earthquake at most. But at a legislative hearing this week in Sacramento, Keith Knudsen with the US Geological Survey said the quake that hit this month blew a hole in those careful projections.

"The shaking that these people experienced - we've seen some of the videos online - the shaking went on for two to three minutes." Knudsen said.

The Japan quake was 900 times more powerful than Northern California's 1989 Loma Prieta quake. Knudsen showed lawmakers a slide of what made the Japan quake so powerful: a massive rupture in the Earth's crust under the water right off Fukushima's eastern coast.

"This polygon here represents the area of the Earth that ruptured during this earthquake," Knudsen explained. "It wasn't just ruptured at this epicenter but that entire area, roughly an area 300 by roughly 150 miles."

The Fukushima Dai-ichi nuclear power plant complex survived the giant quake. Its reactors shut down automatically and emergency generators powered up to run the cooling system.

But the tsunami flooded the emergency generators and they failed. The Fukushima plant was built to withstand a 22-foot wave but the giant wall of water that engulfed it was as much as 10 feet higher than that.

"What I hear you say is it's not surprising that we underestimate the potentiality of a fault system like we did in Japan," Sen. Sam Blakeslee responded.

Blakeslee said California's nuclear power plant operators need to do more to ensure the safety of facilities. The San Luis Obispo Republican has pushed Pacific Gas & Electric to conduct new seismic risk studies of its Diablo Canyon nuclear power plant. Diablo Canyon and Southern California Edison's San Onofre nuclear plant lie near known fault lines. But three years ago, geologists discovered a new fault within a mile of Diablo Canyon.

"I'm a little concerned that PG&E, which had the primary responsibility for identifying the seismic safety of the facility and the seismic environment in which they were operating, failed to notice a fault of this size, given that earthquakes have been occurring throughout time virtually right under their nose," Blakeslee said.

PG&E insists there is "no uncertainty" about whether Diablo Canyon can withstand a seismic threat. At this week's hearing, Blakeslee asked PG&E seismic expert Lloyd Cuff if the utility still thinks there's "no uncertainty" about seismic risk at Diablo Canyon.

Cuff said there's always uncertainty in earthquakes, but "we don't see a concern about the uncertainty because we've quantified where it is and what would happen if we changed the uncertainty."

"So PG&E still sees no concern about the uncertainty?" Blakeslee asked.

"No," Cuff insisted.

"You see uncertainty but you have no concern about it?" Blakeslee continued

"No, we do not," Cuff replied.

PG&E has applied to renew Diablo Canyon's licenses despite the California Energy Commission's request that the utility first conduct new studies on seismic risks.

PG&E's Cuff said the company plans to apply in April for a permit to begin new seismic studies.

A spokeswoman for Southern Gas and Electric testified that San Onofre is invulnerable to massive quakes and can withstand a 30-foot tsunami.

## **Central Coast Senator Asks PG&E To Suspend Nuclear License-renewal Request (VENCSTR)**

By Timm Herdt

Ventura County Star, March 23, 2011

A Central Coast state senator has accused the operator of the Diablo Canyon nuclear power plant of operating under "a culture of disregard of risk."

The lawmaker, Sen. Sam Blakeslee, also asked Pacific Gas & Electric Co. to suspend or withdraw its application for license renewal until the company has completed advanced seismic studies requested by state regulators three years ago.

Blakeslee, R-San Luis Obispo, a geophysicist whose district includes the site of the nuclear plant, along the coast of San Luis Obispo County, said Monday that PG&E has consistently downplayed the risks associated with the discovery of an offshore

earthquake fault line in 2008. That "culture of disregard," he said, "has become endemic at PG&E. It's a culture that puts my constituents at risk."

Blakeslee represents District 15, which also includes coastal Monterey County, as well as portions of Santa Cruz, Santa Clara and Santa Barbara counties.

His remarks came during a special Senate committee hearing designed to examine lessons California might learn from this month's earthquake and tsunami in Japan and the subsequent crisis at a nuclear power plant whose reactors were crippled by the shutdown of essential cooling systems needed to prevent a meltdown.

Lawmakers were told that seismic studies at the sites of both California nuclear plants - the other is at San Onofre, in San Diego County - are insufficient to assess risks associated with geologic data that has become available since the plants were built.

James Boyd, vice chairman of the California Energy Commission, testified that "recent studies have found that ground motion near a fault could be stronger and more variable than previously thought, which could be important at Diablo Canyon, since the offshore Hosgri Fault is 4.5 kilometers west of the plant."

The commission recommended in November 2008 that both plants should use three-dimensional seismic mapping to update their seismic research, but Boyd noted that has not yet been done.

Daniel Hirsch, a lecturer in nuclear policy at UC Santa Cruz, said recent problems at Diablo Canyon, including the fact that emergency cooling pumps had been disabled for 18 months before the problem was discovered, show that safety systems are insufficient.

(Page 2 of 2)

"I don't believe what happened in Japan is something we're immune to here," he said.

Steve David, PG&E's director of site services at Diablo Canyon, said the company has "large margins for safety" at the plant. He noted the elevations of the plant and all of its safety systems, including diesel-powered generators and their fuel tanks, are much higher than is the case at Japan's Fukushima plant.

The plant, located at Avila Beach, about 130 miles south of Salinas, has had a troubled history of dealing with unexpected seismic issues. The Hosgri Fault, capable of producing a 7.5 magnitude quake, was discovered a year after its construction permits were issued in 1970, forcing a redesign that caused construction costs to balloon from the \$320 million estimate to more than \$5 billion.

Later, in 1981, PG&E discovered it had built seismic supports based on a reversed blueprint, requiring another \$2.2 billion in retrofits to correct the mistake.

Then, a little more than two years ago, the US Geological Survey discovered another previously unknown offshore fault, the Shoreline Fault, less than a mile from the plant.

PG&E and the federal Nuclear Regulatory Commission determined the plant's design could withstand an earthquake along that fault. However, Boyd of the state Energy Commission, testified the fault's "major characteristics are largely unknown," including the question of whether an earthquake beginning on one of the offshore faults could continue along the other to produce a larger quake than would be anticipated along either one individually.

The plant is licensed through 2024. PG&E submitted an application to the Nuclear Regulatory Commission in November 2009, seeking a 20-year extension.

Under the commission's rules, Boyd testified, seismic activities are considered not relevant and are "not taken into account in relicensing."

He noted, however, that the recent events in Japan led President Barack Obama and Energy Secretary Steven Chu to request in-depth studies of existing US power plants, which will possibly now mean the advanced seismic studies will be required before the license can be extended.

Blakeslee said if PG&E does not agree to suspend its license application he will seek legislation to try to force it to do so.

Given that the current license is good for another 13 years, he said, "There is more than enough time to address this uncertainty."

## **Manufacturer Reports Potential Safety Issue At Browns Ferry (WAFF)**

By Do

WAFF-TV Huntsville (AL), March 23, 2011

Workers at TVA's Browns Ferry nuclear plant are closely monitoring the water coming in and out of the plant, after a parts manufacturer recently notified TVA of a possible issue with some important pieces to its reactors.

Brown Ferry is one of more than two dozen nuclear plants nationwide that use GE Hitachi control rods or blades in its boiling water nuclear reactors.

Control rods in a nuclear reactor are like the brakes on a car. When you want to slow down your car, you hit the brakes. When you want to reduce the amount of energy produced at a nuclear reactor, you insert more control rods.

Depending on where the rod is placed in a reactor, it could last as long as three decades.

However, GE Hitachi recently informed the Nuclear Regulatory Commission in a report that the rods need to be replaced more frequently than the company initially thought.

GE Hitachi discovered extensive cracking in some rods at a nuclear plant overseas – a defect which could create a safety hazard.

Out of 555 control rods in Brown's Ferry's three reactors, 56 of them are the GE Hitachi brand.

TVA spokesman Ray Golden says plant officials are well aware of the issue. One way to tell if the rods begin cracking is if higher levels of certain chemicals begin appearing in the plant's runoff water. Golden says this has not yet been a problem at Browns Ferry.

"We are continuously monitoring the water that goes in and out of the reactor all the time," Golden said. "We know that if these blades started to crack, we would see elevated levels of boron and elevated levels of tritium."

NRC spokesman Roger Hannah says it's not an immediate safety concern, but something that does need to be closely watched.

Golden says TVA officials are considering switching to a different brand of control rods once the current ones are ready to be replaced.

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## **TVA Officials Keeping Close Eye On Japan's Nuclear Crisis (WAFF)**

WAFF-TV Huntsville, AL, March 23, 2011

TVA officials keeping close eye on Japan's nuclear crisis

North Alabama News, Radar, Weather, Sports and Jobs-TVA officials keeping close eye on Japan's nuclear crisis

Trang Do

Tuesday, March 22, 2011 12:00 AM

By Trang Do - bio | email

LIMESTONE COUNTY, AL (WAFF) – TVA officials are keeping a close eye on what went wrong with Japan's reactors and what can be improved for the future for Browns Ferry Nuclear Plant.

About a week and a half since a 9.0 magnitude earthquake and tsunami devastated Japan, nuclear plant employees are still working around the clock to try to cool down damaged reactors and prevent dangerously high levels of radiation coming from the plant from spreading.

Browns Ferry's reactors are boiling water reactors, the same type as the ones affected in Japan.

Tennessee Valley Authority CEO Bill McCollum is watching the situation with the damaged Fukushima Daiichi nuclear reactors especially close. TVA operates three nuclear power plants, including Browns Ferry in Limestone County.

"It's our obligation to explore this and learn as much as we can about how we can be better," said McCollum.

TVA officials admit that the reactors at Browns Ferry are very similar to the troubled reactors in Japan, but they also say there are major differences.

[Click here for continuing coverage of the disaster of Japan]

A huge obstacle at the Japanese reactors was not so much the earthquake that took out power, but the resulting tsunami that flooded and destroyed the back-up power generators.

"Our emergency back-up diesels are in structures that are designed to withstand, high energy tornadoes, earthquakes and also are designed to be submerged so that they're water-tight during any type of flooding events," adds McCollum.

[TVA Emergency Information (PDF)]

McCollum says the Browns Ferry plant has another thing the Japanese reactors do not have: a hardened vent system that would help prevent a build-up of hydrogen from the reactors containment structures.

A build-up of hydrogen gas led to an explosion at one of the Fukushima reactors.

Despite the safeguards already in place at Browns Ferry, McCollum says TVA has formed an internal team to examine what other improvements can be made.

McCollum also says TVA's three nuclear plants are designed to withstand earthquakes much stronger than the eastern US has ever seen. The strongest Alabama earthquake on record was a 5.1 in Irondale, just north of Birmingham, in 1916.

Related Stories:

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## **Energy Company Babcock & Wilcox May Help With Japan Nuclear Power Plants (WP/AP)**

Associated Press, March 23, 2011

LYNCHBURG, Va. — Energy company Babcock & Wilcox says it may help Japan with the nuclear reactors damaged following the devastating earthquake and tsunami this month.

The North Carolina-based company has its Nuclear Operations Group headquarters in Lynchburg.

Babcock & Wilcox said Tuesday it is in talks with Toshiba to provide nuclear technical assistance and services to secure and maintain the safety of the nuclear power plants at Fukushima Daiichi. The details of the work have not yet been defined.

Toshiba is helping the Japanese government and plant operator Tokyo Electric Power Co. with the plants.

Babcock & Wilcox CEO Brandon Bethards says nuclear power plays an important role in the current and future energy picture and there will be lessons learned from this event.

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## **Babcock & Wilcox To Support Japan Relief (CLTBIZJ)**

Charlotte (NC) Business Journal, March 23, 2011

The Babcock & Wilcox Co., which designs, builds and services nuclear reactors, is in discussions with Toshiba Group to secure the safety of the power plants at Fukushima Daiichi in Japan. Babcock & Wilcox says it will provide nuclear technical assistance and support.

The scope of work has not yet been defined.

Babcock & Wilcox doesn't have any operations in Japan. It hasn't experienced any disruption to its supply chain and continues its normal operations

Toshiba is helping the Japanese Government and Tokyo Electric Power Co., the operator of the Fukushima nuclear power plants, to restore the safety of the affected plants and to reinstate power in the region hit by the earthquake and tsunami.

"We are saddened by the loss of life and devastation that has occurred as a result of the earthquake and tsunami in Japan," says Babcock & Wilcox Chief Executive Brandon Bethards. "Our thoughts are with those affected by this tragedy as well as those who continue to recover from its aftermath. Babcock & Wilcox is prepared to support Toshiba's efforts to stabilize the Fukushima Daiichi nuclear power units."

Charlotte-based Babcock & Wilcox (NYSE:BWC) markets clean-energy technology and services, primarily for the nuclear, fossil and renewable-power markets. The company has 12,000 employees worldwide.

## **Babcock & Wilcox May Help With Japan Power Plants (VICTORA)**

Associated Press, March 22, 2011

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Babcock & Wilcox CEO Brandon Bethards says nuclear power plays an important role in the current and future energy picture and there will be lessons learned from this event.

## **B&W In Talks With Toshiba Over Fukushima Daiichi Nuke Plant (INTLBIZ)**

International Business Times, March 22, 2011

Clean Energy company Babcock & Wilcox Co. (B&W) (NYSE:BWC) said it is in discussions with Toshiba Group to provide nuclear technical assistance and services to secure and maintain the safety of the nuclear power plants at Fukushima Daiichi in Japan.

However, the scope of work has not yet been defined, B&W said.

Toshiba is helping the Japanese Government and Tokyo Electric Power Co., Ltd. (TEPCO), the operator of the Fukushima power plants, to restore and maintain the safety of the affected nuclear power plants and to reinstate power in the region hit by the earthquake and tsunami.

Reactors at the Fukushima Daiichi plant, which lies 150 miles north of Tokyo, have leaked radiation after they were struck on March 11 by a massive earthquake and tsunami, leading to the world's worst nuclear crisis since Chernobyl 25 years ago.

Shares of B&W closed Monday's regular trading session at \$31.68 on the NYSE

## **Meltdown-or-Not Future For Nuclear Fuel Seen In Refrigerator-Sized Reactor (BLOOM)**

By John Lippert And Jeremy Van Loonbloomberg

Bloomberg News, March 23, 2011

Nuclear engineer Jose Reyes jolted awake at 4:45 a.m. on March 11 when his son called to warn him that a massive earthquake had unleashed a tsunami that rocked Japan. Giant waves were heading for the Oregon coast, about an hour from Reyes's Corvallis office.

As news poured in during the next 12 hours that the cooling system at a Tokyo Electric Power Co. nuclear plant had been damaged, Reyes's anxiety grew. People were using the words "potential meltdown" with alarming frequency.

Reyes, 55, who founded NuScale Power Inc. in 2007 to design a slimmed-down, 45-megawatt reactor, contemplated the blot on the already beleaguered nuclear industry -- and the prospects for his nascent company, Bloomberg Markets magazine reports in its May issue.

"We've been hard-pressed but not crushed," he says. "Stopping the progress being made would be a mistake."

Convinced that today's large nuclear projects are burdened by too much financial risk, NuScale is designing and testing a 60-foot-high (18-meter-high) reactor encased in a thermos-like metal sheath. It would cost about \$200 million and could be used to light and heat villages, desalinate ocean water or be strung together side by side to form a midsize power plant -- virtually free of carbon emissions. With some investors on board, Reyes plans to ask the US Nuclear Regulatory Commission for a license in late 2012.

"More and more people see small nuclear as a green technology," he says.

Decades after accidents at Three Mile Island and Chernobyl poisoned attitudes and the environment, Reyes and a cadre of scientists, engineers and investors have been betting that small-scale reactors can spark a nuclear revival.

Hyperion Power Generation Inc. in Santa Fe, New Mexico, is working on 25-megawatt, refrigerator-sized designs for \$50 million each that could power remote locations or be used in hospitals and factories. By 2020, Russian nuclear company Rosatom Corp. expects to sell seven barges equipped with twin 35-megawatt reactors for the Arctic and Africa. In Argentina, the government of President Cristina Fernandez de Kirchner is clearing ground in the central grasslands for a 25-megawatt prototype planned for 2014.

Microsoft Corp. (MSFT) co-founder Bill Gates is backing a more powerful, 500-megawatt reactor designed by TerraPower LLC in Bellevue, Washington. Its traveling-wave technology uses uranium-238 to fuel a reaction in what functions like a 13-foot-tall candle.

"If it works, it's hard to think of a more valuable offering in the energy space," says Izhar Armony, a partner at Waltham, Massachusetts-based Charles River Ventures, which invested in TerraPower.

As improbable as it may sound amid the devastation in northeastern Japan, the nuclear accident may increase the appeal of innovative, small-scale reactors, says Chris Gadowski, a Bloomberg New Energy Finance analyst in San Francisco.

"We're seeing a knee-jerk reaction saying, 'get rid of nuclear,' but that's not going to happen in the long run," he says. "There is no other good solution if you want to decarbonize the energy sector. As far as small reactors go, these events in Japan will strengthen their hand as opposed to weakening it."

US Energy Secretary Steven Chu, who won the Nobel Prize in physics in 1997 for using lasers to study atomic particles, has requested \$97 million for small-reactor development in fiscal 2012, which begins on Oct. 1. Chu said on March 16 that President Barack Obama's administration will press ahead with efforts to expand loan guarantees for new reactors.

Maurice Gunderson, a partner at San Francisco-based CMEA Ventures, invested in NuScale four years ago. He predicts he'll raise an additional \$200 million by June 1, even after the Japanese disaster.

Anti-nuclear sentiments inflamed by leaking radiation at the Fukushima plant may subside over time, he says. More crucial, he says, is that the world has few good options to replace the one-seventh of its electricity that's produced by nuclear reactors.

"Powering a society as large as the one we have means using nuclear power and coal," he says. "Nothing else we have at the present time is big enough to do it in a sustained way. And coal means lopping off mountaintops, air pollution and mining deaths. It's tremendously hazardous."

Burning petroleum spews carbon into the air, and rising prices ripple through the global economy. From Dec. 17, when riots erupted in Tunisia and spread to oil-rich nations in the region, Brent crude for May settlement surged 26 percent to \$115.70 a barrel in London on March 22.

Reyes says his preliminary data show that his reactor would have survived the Japanese earthquake – and held up under one that shook the ground even harder. NuScale's reactor core is housed inside a vessel that's 10 times stronger than the one in Japan, he says, and that's placed in a pool of water and buried underground.

More important, his design doesn't require pumps or external power to cool the reactor. Fukushima Dai-Ichi reactors, of which Toshiba Corp. (6502) was among the builders, overheated when power sources failed and pumps couldn't deliver cooling water.

NuScale's design relies on so-called passive safety systems that take advantage of natural circulation created by the heating and cooling of water inside and outside the reactor. NuScale's design, which uses about 5 percent of the amount of fuel of the big models, produces less heat after it's idled.

"Keep your core covered with liquid – that's the rule of thumb," Reyes says.

The accident in Japan is hurting Toshiba. The company's shares have dropped 17 percent in the days after the earthquake and tsunami to 406 yen on March 22. On March 16, China suspended approval of new nuclear projects and said it would conduct safety inspections of all plants under construction. China has chosen the AP1000 from Toshiba's Westinghouse unit as its flagship, with the first one set to go online in 2013.

Mykle Schneider, a Paris-based nuclear industry analyst who has advised the governments of Belgium, France and Germany on atomic energy, says small reactors would have been vulnerable to the twin forces of Japan's earthquake and tsunami.

"The industry has lost the last remaining bit of hope," he says. Nuclear proponents can't recover by painting rosy views of a carbon-free atomic future, Schneider says. "This was a big one for the nuclear industry," he says.

New reactor models will arrive too slowly to make a dent in global warming, while used fuel stored in pools of water is a prime terrorist target and safety risk, he says. Permanent waste disposal solutions mean digging into granite or salt and leaving radioactive material for thousands of years.

In the face of such dire predictions, nuclear power has been growing as countries strive to slake mankind's appetite for energy.

The world has 441 reactors, including those at Japan's Fukushima Dai-Ichi facility, with a total of 375,000 megawatts of capacity, the United Nations International Atomic Energy Agency said in September 2010. That provided about 14 percent of the world's power last year. Another 60 reactors are in the works, and output may reach 445,000 megawatts by 2020, the IAEA says.

By 2025, the world could add 36 small reactors, each with 400 megawatts of capacity or less, according to the IAEA. Of the 38 reactors of this size operating today, 34 were built before 1990 and use traditional technology rather than new designs.

TerraPower, the company Gates is backing, aims to build a sodium-cooled reactor by 2020. It would consume spent fuel from conventional plants and generate less waste of its own, addressing a problem that has dogged the industry. TerraPower has spent tens of millions of dollars on research and will need several billion dollars more for a prototype, CEO John Gilleland says.

Toshiba is planning a 10-megawatt model that, if approved, may supply the Alaskan village of Galena. Older, larger Toshiba reactors overheated amid the earthquake when backup systems failed to keep them cool. Toshiba declined to comment on the impact of the accident on its small-scale program.

Babcock & Wilcox Co., Reyes's main competitor in small models, has lined up a customer – a crucial step before seeking NRC approval for its technology. The Tennessee Valley Authority, a federally owned utility in seven states, may build six small Babcock reactors to provide power for 4,800 Department of Energy researchers in Oak Ridge, Tennessee, says Andrea Sterdis, TVA senior manager for nuclear expansion. Terry Johnson, a TVA spokesman, says it's too soon to say how the Japanese accident may affect small-scale reactor development.

Babcock, which supplied boilers for New York's first subways, also built the reactor for the stricken Three Mile Island nuclear facility near Harrisburg, Pennsylvania. In 1979, a commission appointed by US President Jimmy Carter criticized the company for, among other things, failing to notify customers that the kind of coolant valve that caused the Pennsylvania accident had already failed nine other times. Babcock declared bankruptcy in 2000 as a result of legal claims for exposure to asbestos in its power-generating equipment. The company emerged from bankruptcy six years later.

Babcock's new, 125-megawatt reactors would cost about \$500 million each and become available as early as 2018, says Christofer Mowry, CEO of Babcock's B&W Modular Nuclear Energy unit. He declined, through a spokesman, to comment on the Fukushima accident.

Ben Landy, an analyst at Baltimore-based T. Rowe Price Group Inc., says that Babcock already builds reactors for the US Navy and that the company's boilers and pollution-control equipment for coal plants are competitive strengths.

"If small reactors become a big market, that's icing on the cake," Landy says.

With 14.4 million shares, T. Rowe Price is Babcock's biggest investor. Babcock shares rose 52 percent from Aug. 2, when the company was spun off from McDermott International Inc. (MDR), to \$35.09 on March 10, the day before the earthquake. The stock has dropped 9.8 percent since then, to \$31.65 on March 22.

Landy says negative publicity over Fukushima may impede large US reactors already fighting to raise money. Buyers may view Babcock's small models as safer, partly because they're buried in the ground, he says.

The NRC has been marshalling resources for when applications for mini-reactors start rolling in, NRC Chairman Gregory Jaczko says. The commission has 50 people who will determine whether the models need the same personnel, security and insurance as big designs and whether operators should pay similar licensing, disposal and decommissioning fees.

The NRC is familiar with NuScale's basic design and is likely to certify it, BNEF's Gadomski predicts. Hyperion's 8-foot-tall models present a tougher security challenge because they're intended for remote locations. Common thieves probably couldn't steal them, but a rogue government could -- and then may convert the uranium into weapons, he says.

Even as Republicans in Congress attacked Obama's energy plan, they left most nuclear programs intact. After Japan's woes, Democrats may be less likely to support the administration's nuclear agenda.

The day after the earthquake, Representative Ed Markey, a Democrat from Massachusetts, called for a moratorium on new plants in seismically active areas until additional safety reviews could be completed. Senator Joseph Lieberman of Connecticut, an independent who heads the Senate's Homeland Security Committee, sought a pause until the Japan accident could be analyzed.

The US nuclear industry is already growing more slowly than those of China, Russia and India. Nuclear generating capacity may jump by 77 percent in the Far East, including China, by 2020 compared with 12 percent in North America, the IAEA says. Capacity in Western Europe may drop 24 percent in that period, the agency says.

Most US utilities still see too much risk. Constellation Energy Group Inc. (CEG) abandoned a five-year quest in October for a third big reactor in Lusby, Maryland. Chicago-based Exelon Corp. (EXC), the largest US nuclear operator, with 17 reactors, is reassessing a \$3.65 billion plan to raise output at its nuclear plants because the company expects safety reviews by the NRC, CEO John Rowe said on March 16. Marilyn Kray, vice president of nuclear development, says if utilities need power, and can be convinced that small reactors are cost-effective, they may build them at existing nuclear or coal sites, which already have transmission lines and permits.

That thinking meshes with Reyes's plans for NuScale.

Seated in his office near Oregon State University, where two paintings by Austrian artist Friedensreich Hundertwasser lean, unhung, against the wall, Reyes recalls how living through the worst US nuclear accident taught him about scale.

He was working as a safety analyst at the NRC during the partial core meltdown at General Public Utilities Corp.'s Three Mile Island plant in 1979. He studied how operators of the Babcock reactor were baffled by 1,000 alarms going off simultaneously. Today, a plant's key diagnostics fit on one computer screen, he says.

"Simplicity matters," Reyes says.

Reyes began forming his idea for NuScale after he got a DOE grant to develop reactors for emerging markets. He built a mock power plant that resembles a 12-foot-tall chimney to troubleshoot his designs in a four-story garage at Oregon State, where he's on leave from his job as a tenured professor. He decided to commercialize the technology and filed 18 patent applications.

Reyes, who holds a Ph.D. in nuclear engineering from the University of Maryland, used similar equipment to convince the NRC in 2005 that a \$6 billion, 1,117-megawatt behemoth designed by Toshiba's Westinghouse unit was safe partly because, like NuScale's, it relies on passive safety systems. China later adopted Toshiba's design for its future reactors.

"After reviewing all these events in Japan, people may decide that these passive plants might be the right way to go," Reyes says.

Reyes had been struggling to raise money even before the Japanese crisis. His woes worsened in January, when the US Securities and Exchange Commission filed a lawsuit against his biggest backer, Francisco Illarramendi, claiming that Illarramendi transferred money among investment accounts without telling clients.

Illarramendi, principal owner of Michael Kenwood Group LLC in Stamford, Connecticut, pleaded guilty in March to what the SEC described as a multiyear Ponzi scheme. He could face up to 70 years in prison, prosecutors say. John Gleason, his attorney, declined to comment.

In January, when the lawsuit temporarily froze NuScale's bank account, CEO Paul Lorenzini fired 30 of 100 employees and hundreds of contractors and cut pay by as much as 50 percent.

One potential investor, Ray Rothrock, who works in Palo Alto, California, for venture firm Venrock Associates, says he passed on NuScale because no one can predict whether or when the NRC will approve its design. The Fukushima accident magnifies the uncertainty, he says.

"This will slow things down, cost money and require the regulatory people to opine on it," Rothrock says. If NuScale passes its regulatory hurdles, he says, the company will be worth billions of dollars.

About 1,450 miles (2,333 kilometers) from Reyes's Oregon lab, in Santa Fe, Hyperion CEO John Deal has been working on what he calls "nuclear batteries" that hospitals, remote communities and oil companies can use for power and heat. Each reactor is designed to run for eight years before Deal retrieves it and drops off a new one.

Deal, 47, worked at Los Alamos National Laboratory, where he says he got the idea to commercialize small nuclear technology, as "resident entrepreneur." By 2020, Hyperion aims to have a prototype that can operate at 1,000 degrees Fahrenheit (538 degrees Celsius), 400 degrees hotter than water-cooled designs. Hyperion's lead-bismuth model and sodium-cooled versions from other companies could generate electricity as well as heat for refining bitumen into crude oil or for warming the maternity ward of a hospital.

Deal says his "batteries" offer advantages over the reactors in Japan. They'd spread out power generation rather than concentrating it; they'd be a fraction the size of traditional models; and they'd be buried inside reinforced bunkers designed to withstand earthquakes. Cooling would work by gravity, without pumps.

"If there is a worst, worst, worst case, all contamination, if any, should be very local and remain in the ground inside the vault," Deal says.

People are likely to accept such security, especially if lack of power means they don't have basic necessities such as clean water, Deal says.

"You have to get out of Berkeley to realize how badly people need electricity," he says, referring to the California college town that has long been a protest hotbed. If the NRC moves too slowly to license his reactor, Deal says, he'll build it overseas.

The planet has 40 years to slice carbon emissions in half or suffer a deadly rise in temperatures, according to the International Energy Agency, which advises the governments of 28 countries, including the US

Nuclear proponents say meeting this challenge requires a cascade of inventions, including reactors that are smaller, safer and cheaper -- even after the crisis in Japan.

"There is still a need for clean energy and for getting away from fossil fuels," Reyes says. "That part of the equation doesn't change."

## **NRC Proposes To Amend Licensing, Inspection, Yearly Fees Rule (EGYBUS)**

Energy Business Review, March 22, 2011

The Nuclear Regulatory Commission (NRC) is proposing to amend its regulations for the licensing, inspection and annual fees it charges applicants and licensees for fiscal year 2011.

The nuclear watchdog said that it is required by the Congress to recover for the US Treasury most of its annual appropriated budget through two types of fees.

One is for specific NRC services, such as licensing and inspection activities, that apply to a specific license while the other is an annual fee for generic regulatory expenses and other costs not recovered through fees for specific services.

These fees are are paid to the US Treasury and go into the general fund.

The NRC must recover, through fees to applicants and licensees, 90% of its budget authority for fiscal year 2011 (1 October 2010 - 30 September 2011).

The NRC receives 10% of its budget authority (not including non-fee items) from the general fund each year to pay for the cost of the agency activities that do not provide a direct benefit to NRC licensees.

Based on the fiscal year 2011 budget, the NRC's total amount of fees to be recovered by 30 September is approximately \$915.3m, about less than 1% (\$0.4m) more than in fiscal year 2010.

## **NEWSMAKER - Problem Solver At Helm As US Faces Test On Nuclear (REU)**

By Timothy Gardner

Reuters, March 23, 2011

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

## **OVERNIGHT ENERGY: Get Ready For More Chu (HILL)**

By Ben Geman And Andrew Restuccia

The Hill, March 23, 2011

State of Play: Energy Secretary Steven Chu will speak Wednesday at a Pew Environment Group forum on clean energy, an appearance that comes days after Chu suggested the Japanese nuclear reactor crisis could influence the siting of future US nuclear plants.

"Certainly where you site reactors and where we site reactors going forward will be different than where we might have sited them in the past, I would say," he said on "Fox News Sunday."

Chu's brief comment drew widespread attention — tomorrow he could face more questions about the impact of the crisis in Japan. The Energy Department has deployed resources and staff to assist the response and track the accident's effects.

### NEWS BITES:

Begich wants 'development czar' to replace Browner ...

Sen. Mark Begich (D-Alaska) says the White House should replace departed climate czar Carol Browner with a "development czar."

Begich — who has long pushed the administration to greenlight oil drilling off Alaska's coast — pitched the idea in a speech to the state's legislature Tuesday.

He said such a step would enable the White House to show that "it is serious about increasing domestic oil and gas development."

"I call on the President to replace his climate czar with a 'development czar' to help focus this administration on the right priorities for our nation: producing American energy from American soil with American workers," Begich said, according to his prepared remarks.

... and readies bill to push drilling off Alaska's coast

Begich also said he will introduce legislation next week that would establish a federal coordinator for Arctic waters off Alaska's northern coast.

"This office would have authority to work across the agencies causing Alaska so much heartburn today — the EPA, Army Corps of Engineers and Interior Department," Begich said.

"The federal OCS coordinator would work with the State of Alaska and affected local governments to streamline development in the Chukchi and Beaufort seas, which hold such promise for future oil and gas development," he added.

Study: Connecting extreme weather to climate change is effective strategy

A new study says connecting climate change to extreme weather is an effective way of convincing people to take action to reduce greenhouse gas emissions.

That's good news for Rep. Henry Waxman (D-Calif.) and other Democrats who have recently focused their attention on new studies that say climate change exacerbates extreme weather.

The study, which appeared in the journal *Nature Climate Change*, finds that people in the U.K. who have experienced flooding are more concerned about climate change.

From the study:

"[T]hose who report experience of flooding express more concern over climate change, see it as less uncertain and feel more confident that their actions will have an effect on climate change. Importantly, these perceptual differences also translate into a greater willingness to save energy to mitigate climate change. Highlighting links between local weather events and climate change is therefore likely to be a useful strategy for increasing concern and action."

NEI outlines US nuclear emergency procedures

The Nuclear Energy Institute, the nuclear industry's trade association, released a breakdown of emergency preparedness procedures for US nuclear reactors on Tuesday.

The graphic comes amid new concerns about nuclear safety in the United States, particularly from those who live near reactors. New York State Gov. Andrew Cuomo said that the Indian Point nuclear plant should be closed because a major disaster at the plant could affect New York City.

Here are some highlights from the NEI graphic:

• “If evacuation were necessary, emergency responders would initially focus on those citizens likely to be exposed to a potential radioactive release: those within a two-mile radius around the plant, as well as sector(s) five miles downwind. State and local governments make the determination and implement protective action orders for the public.”

• “In the event of a release of radiation, state and local governments will also sample water, milk, soil and crops within a 50-mile radius of a plant to determine if radiation was deposited during an incident. According to the federal guidelines for ‘worst-case’ reactor accidents, immediate life-threatening doses would not occur outside the 10-mile evacuation zone, according to the Federal Emergency Management Agency.”

As The Hill reported last week, the Nuclear Regulatory Commission requires companies to develop emergency evacuation plans for a 10-mile radius around a reactor. But in Japan, the NRC recommended that Americans living within 50 miles of the stricken reactors evacuate.

Murkowski adds muscle to energy staff

Sen. Lisa Murkowski (R-Alaska), the top Republican on the Energy and Natural Resources Committee, is beefing up her staff ahead of committee debates on energy legislation.

Annie Medaglia has begun a fellowship with the committee. She’s a presidential management fellow with the State Department who recently began a “rotation” with the panel; prior gigs include work on Middle East and South Central Asia for State’s Legislative Affairs Bureau and energy security issues in Europe, Central Asia and China with State’s Special Envoy for Eurasian Energy, Murkowski’s committee office said.

Also on board: Pasha Majidi, who used to work for former Rep. Tom Davis (R-Va.). She joined the committee as a legislative assistant.

Rebecca Rosen has joined the GOP staff to work on energy economics. Her past jobs include working for the consulting firm PFC Energy, where she was “engaged by many of the world’s major international and national oil companies to consult on an array of corporate financial and strategic matters,” according to the committee.

ON TAP WEDNESDAY:

Report to defend EPA Clean Air Act rules

The liberal Center for American Progress will roll out a report aimed at showing Latino community benefits stemming from Clean Air Act regulations. The report is part of a wider campaign against GOP-led efforts to scale back or scuttle several regulations that Republicans say will burden businesses and cost jobs.

The report explores “how standards set by the EPA have protected millions of Latinos from diseases from pollution and how our most vulnerable citizens, children, and seniors are at higher risks of suffering chronic ailments,” an advisory states.

Heritage forum to explore rare-earth policy

The conservative Heritage Foundation will hold an event about rare-earth elements, which are critical to manufacturing certain low-carbon energy and defense-related equipment. China currently dominates global production, leading to fears of supply disruptions.

“The situation has brought calls for government intervention to ensure supply. Many of these calls are misguided. The national security risk is moderate. The commercial market for critical elements is functioning well and could easily be warped by government action. Our panel will discuss the scientific, commercial, and security dimensions of the issues and what if anything should be done about them,” an advisory states.

Expert speakers will include MIT physics professor Robert Jaffe.

Pew forum on clean energy

The event with Energy Secretary Steven Chu we mentioned above will also include remarks by former Michigan Gov. Jennifer Granholm (D) and former Sen. John Warner (R-Va.), who has warned that climate change is a national security threat.

IN CASE YOU MISSED IT...

Here’s a quick roundup of Tuesday’s E2 posts:

- The nuclear crisis in Japan has made the public more wary about nuclear power
- The Interior Department is planning to broaden ethics rules
- Another poll said the public is more supportive of renewable energy since the crisis in Japan
- Senate Democrats said proposed GOP spending cuts will result in higher gas prices
- Dave Matthews is the face of a new Wilderness Society campaign
- The administration issued its fourth Gulf deepwater drilling permit
- The Interior Department is touting its support for oil and coal amid criticism from Republicans

Please send tips and comments to Ben Geman, This e-mail address is being protected from spambots. You need JavaScript enabled to view it , and Andrew Restuccia, This e-mail address is being protected from spambots. You need JavaScript enabled to view it .

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## **Nuclear Power Loses Support In New Poll (NYT)**

By Michael Cooper And Dalia Sussman

New York Times, March 23, 2011

What had been growing acceptance of nuclear power in the United States has eroded sharply in the wake of the nuclear crisis in Japan, with support for building nuclear power plants dropping slightly lower than it was immediately after the accident at the Three Mile Island plant in 1979, according to a CBS News poll released on Tuesday evening.

Only 43 percent of those polled after the failure of the Fukushima Daiichi plant in Japan said they would approve building such new facilities in the United States to generate electricity. That is a steep decline from the 57 percent who said in 2008 that they approved of new plants. That poll was taken at a time of soaring gas prices and mounting concerns about global warming that led to calls for a new national energy policy and that drove popular support for nuclear power to its highest level in three decades.

Support for nuclear power has waxed and waned over the decades, going up as the power-hungry nation looked for ways to meet demand and driven down by nuclear accidents at home and abroad. Support for more nuclear power plants was 69 percent in 1977, the highest level ever recorded in a poll by The New York Times or CBS News. But two years later, it plummeted to 46 percent after the Three Mile Island accident near Harrisburg, Pa. After the Chernobyl disaster in Ukraine, then part of the Soviet Union, in 1986, support dropped to 34 percent in a CBS News poll.

The new poll found that nearly 7 in 10 Americans think that nuclear power plants in the United States are generally safe. But nearly two-thirds of those polled said they were concerned that a major nuclear accident might occur in this country — including 3 in 10 who said they were “very concerned” by such a possibility. Fifty-eight percent of those polled said they did not think the federal government was adequately prepared to deal with a major nuclear accident.

Still, 47 percent of those polled said that, over all, the benefits of nuclear power outweighed the risks; 38 percent said they did not.

The nationwide telephone poll was conducted March 18-21 among 1,022 adults, and it has a margin of sampling error of plus or minus three percentage points.

The unfolding crisis in Japan occurred just as many Americans believed that nuclear power was poised to make a comeback in the United States, more than three decades after the Three Mile Island accident.

President Obama has spoken in his past two State of the Union addresses of the need to build more nuclear plants, and he has called for billions of dollars in federal loan guarantees for construction. Some environmental groups, and many members of Congress in both parties, have also increasingly come to consider nuclear power as a steady energy source that, since it does not emit carbon, could play an important role as the nation seeks to address concerns about climate change.

But even before the Japan crisis, there were tremendous financial challenges for any new construction, and the number of plants that was expected to be built in the near future was small.

Finding places to build new plants could also prove difficult: more than 6 in 10 of those polled said they would not approve of a nuclear plant in their community. Support was highest in the South, where plans are under way for new plants in South Carolina and Georgia, and in the Midwest.

Attitudes toward nuclear power varied along partisan and gender lines, the poll found.

A slim majority of Republicans said they approved of building more nuclear plants, while majorities of Democrats and independents disapproved. Republicans were also more likely to see the existing nuclear power plants as safe, and were more likely to say that the federal government was prepared to handle an accident, though most still said the government was not ready for such an emergency.

And Republicans were less likely to disapprove of new nuclear plants in their areas: 50 percent of them said they did not want new nuclear plants nearby, compared with 69 percent of Democrats and 65 percent of independents.

There was also a gender divide: while a majority of men said they approved of new nuclear plants, most women disapproved. Women were also significantly less likely than men to say that the benefits of nuclear power outweighed the risks, more likely to say that they were “very” concerned about a major accident and more likely to say that the events in Japan made them more afraid that a nuclear accident could occur in the United States.

Mr. Obama received high marks for his handling of the crisis from all political groups. Nearly half of those polled said they were concerned that radiation from Japan could harm people in the United States, with the results similar across all regions. But their concern did not run very deep: only 17 percent said they were “very concerned” about the possibility, including just 13 percent of those who live in the West.

### **Support For Nuclear Power Is Partisan (POLITCO)**

By Jennifer Epstein

Politico, March 23, 2011

As nuclear plants in Japan continue to leak radiation in the aftermath of a string of natural disasters, Americans are voicing stronger opposition to the construction of new plants than they did a year ago, though a majority still support the use of nuclear power to produce electricity.

In a CNN/Opinion Research Corporation poll released Tuesday, 53 percent of Americans said they oppose the construction of new plants, up from 47 percent in a CNN poll conducted in March 2010. Forty-six percent said they support the construction of new plants, down from 50 percent in last year's poll.

Support for building more nuclear plants breaks down along party lines, with 34 percent of Democrats and 57 percent of Republicans in favor of new plants. Independents are divided 50-50 on building new plants.

Though a small majority of Americans are against the building of new nuclear plants, 57 percent said they support the domestic use of nuclear energy, while 42 percent said they are opposed to it.

When CNN polled on the question soon after the Three Mile Island accident in 1979, 53 percent of Americans approved of using nuclear power to produce electricity. In 1986, following the Chernobyl disaster, 45 percent of Americans said they supported the use of nuclear power.

Most Americans have a “not in my backyard” attitude toward nuclear plants, with 60 percent of those surveyed saying they wouldn't want one to be built in their own community, while 39 percent said it would be acceptable.

The poll was conducted March 18-20 and surveyed 1,012 adults. The error margin is plus or minus 3 percentage points.

### **Poll: Japanese Crisis Cuts US Nuke Energy Support (HILL)**

By Ben Geman

The Hill, March 23, 2011

But nuclear advocates might take heart in the rise in public support for expanded offshore drilling, which had dipped in the months after last year's massive BP oil spill began.

Pew's poll this month shows that 57 percent of the 1,004 adults polled favor allowing more offshore oil-and-gas drilling in US waters, while 37 percent oppose it. That's a turnaround from Pew polling last June, when 44 percent favored expanded drilling while 52 percent opposed it.

The recent oil and gasoline price spikes are likely playing a role — support for wider drilling was 51 percent in October, before the turmoil in the Middle East and North Africa began sending prices upward.

Pew polls in February of 2010, April of 2009 and September of 2008 showed support for allowing more offshore drilling in the 63-67 percent range.

Elsewhere, the new poll finds that 74 percent of adults favor increased federal spending on renewable energy research, while 21 percent oppose it. The numbers are consistent with other Pew polls over the last year.

The White House is pushing for expanded Energy Department R&D funding, while Capitol Hill Republicans want to decrease spending for those programs.

### **Nuclear Power In US: Public Support Plummets In Wake Of Fukushima Crisis (CSM)**

Christian Science Monitor, March 23, 2011

Most Americans said they favor kicking away nuclear-industry supports. Even though President Obama has asked for \$36 billion in new loan guarantees on top of \$18 billion already approved by Congress, 73 percent of Americans said they do not “think taxpayers should take on the risk” of construction loans for new nuclear reactors. The same proportion favor “a shift of federal loan-guarantee support for energy away from nuclear reactors” toward wind and solar power.

Some 73 percent respondents favor congressional review of a 1957 law that indemnifies nuclear-power companies from most disaster cleanup costs. Instead, Americans would hold the companies “liable for all damages resulting from a nuclear meltdown or other accident,” the survey said.

Slightly more Americans (76 percent ) are also now "more supportive than ... a month ago to using clean, renewable-energy resources – such as wind and solar – and increased energy efficiency as an alternative to more nuclear power in the United States."

Meanwhile, 51 percent support "a halt to the United States extending the operating lifespan of its oldest nuclear reactors." Owners of dozens of aging nuclear power plants – among 104 reactors nationwide – are seeking 20-year operating permit extensions.

Such sentiments have already come into play in state legislative hearings in California, where lawmakers questioned the safety of two coastal nuclear plants located within the highest seismic hazard area, according to the Nuclear Regulatory Commission (NRC). State Sen. Sam Blakeslee, who has a doctorate in geophysics, asked that the owner of one of the plants withdraw its application for a new license until further studies were done.

In addition, 23 nuclear plants in the US have the same or similar reactor design as the Fukushima plant. A February survey showed 68 percent of Vermont residents supported the closure next year of the Vermont Yankee plant, which has a General Electric Mark 1 Boiling Water Reactor, like Fukushima.

Though the Vermont Senate voted last year to retire the plant as scheduled – and the plant cannot operate without its state license – the NRC still extended the Vermont Yankee plant's operating license Monday. "This move calls into question the seriousness" of the NRC's decision to conduct a 90-day review of the entire industry in light of the Fukushima crisis, says Erich Pica, president of Friends of the Earth.

The NRC has defended its safety record. "The NRC remains confident that our Reactor Oversight Program, which includes both on-site and region-based inspectors, is effectively ensuring US nuclear power plants are meeting the NRC's strict requirements and are operating safely," said Scott Burnell, NRC spokesman, in a recent statement.

But officials representing the nuclear power industry acknowledge that there is work ahead to reassure Americans.

"We're not at all surprised to see – in the wake of more than a week of intensive news coverage – that support has dropped," says Steve Kerekes, a spokesman for the Nuclear Energy Institute, an industry trade group in Washington. "We will apply the lessons learned from Fukushima and make the plants even safer than they already are – and build public confidence. We're committed to doing this."

## **US Public Support For More Nuclear Power Slips (REU)**

By Christopher Doering

Reuters, March 23, 2011

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

## **US Looks To Safeguard Medical Isotopes From Terrorists (NATJO)**

By Ronald Brownstein

National Journal Daily, March 22, 2011

The United States is spending millions of dollars to help hospitals reduce the potential for terrorists to acquire sufficient amounts of medical isotopes to build a radiological "dirty bomb," *Newsday* reported on Monday (see GSN, Aug. 20, 2010).

The National Nuclear Security Administration is funding the effort as part of its initiative to assess and improve radioactive substance safeguards at almost 2,700 sites no later than 2020, according to NNSA Deputy Director Kenneth Sheely.

In excess of 120 of the sites covered by the program are in New York state, including 50 facilities in New York City. Thirty facilities have already been examined in the city, including 18 hospitals. Before the end of 2011, officials want to see safeguard studies completed for all New York City hospitals.

Seven Long Island facilities have undergone security assessments and \$800,000 in safeguard improvements have been carried out on three buildings, NNSA officials said.

The North Shore-Long Island Jewish Health System, comprised of 15 hospitals, has employed grant dollars to improve protection of a radiological machine at the Lenox Hill Hospital in Manhattan and is requesting additional money to secure another device in Manhasset, hospital system Vice President James Romagnoli said.

US counterterrorism experts fear that widely used and inadequately secured devices that house radioactive materials could create an opening for terrorist organizations such as al-Qaeda to produce a dirty bomb, which would use conventional explosives to disperse radiological substance over a wide area (see GSN, Feb. 2).

"It's a very significant concern," said Representative Peter King (R-N.Y.), adding that he spoke in the fall with New York Police Commissioner Ray Kelly and federal officials about the issue.

The Obama administration requested \$25 million in fiscal 2011 for a program to secure radioactive materials. Congress has not passed a final budget for the current budget year, which ends on September 30, instead approving a series of continuing funding resolutions. The White House is seeking to increase funding for the program to \$51 million in fiscal 2012.

Meanwhile, Washington is also training state and local law enforcement officials and hospital security guards, among others, at a specialized security facility in Oak Ridge, Tenn. The training includes countering a terrorist attempt to invade a hospital in order to obtain radioactive substances.

"What we need to understand is that preparation and prevention at places such as hospitals is an insurance policy and relatively low cost compared to the potential consequences [of a dirty bomb attack]," Federation of American Scientists President Charles Ferguson stated by e-mail.

Enhanced security measures include the purchase for hospitals of mechanical delaying devices that are fixed to blood irradiators and cancer treatment devices to extend the amount of time it would take for an individual to open the machines.

"Buying time is important because a dirty bomb is not a very technologically (sophisticated) device to make," Sheely said (Anthony Destefano, Newsday, March 21).

## **H Canyon Might Remain Open (AUGC)**

By Rob Pavey

Augusta Chronicle, March 23, 2011

AIKEN — A plan to scale back operations at Savannah River Site's H Canyon could keep a still-growing inventory of spent nuclear fuel in South Carolina indefinitely, members of a citizens committee told site officials Tuesday.

"H Canyon has become very problematic lately," said Rose Hayes, the nuclear materials committee chairwoman for the SRS Citizens Advisory Board. "Right now, it is the disposition path for foreign and domestic spent nuclear fuel, and without H Canyon, there is no disposition path for this material."

The 403,000-square-foot chemical separations plant was built in the 1950s to recover uranium and plutonium for defense programs. Today, it is the nation's sole remaining facility at which certain types of plutonium, highly enriched uranium and aluminum-clad spent nuclear fuels can be processed for disposal.

The US Department of Energy announced plans last month to place the facility in "minimum inventory and staffing condition," which could include halting the flow of nuclear materials sent there for processing.

The measure could also affect a still-unknown number of the canyon's 750 jobs and, according to President Obama's fiscal year 2012 budget request, would save about \$100 million by halting operations, while keeping the site in a "standby" mode that would allow it to resume operations quickly.

Allen Gunter, a senior DOE technical adviser, told committee members that scheduled shipments of highly enriched spent fuel from research reactors in the US and abroad are still scheduled to arrive at the plant in coming years.

The material would be stored with about 14 metric tons of existing used fuel kept in pools of water in the site's L Area.

Although the site is not supposed to be a permanent repository for such material, it is nonetheless a safe storage area, he said.

The committee said that L Basin is nearly full and that adding more could increase safety risks to workers and the public.

Gunter responded that no final decisions have been made about how to define "standby" mode at H Canyon, and the site's contractor – Savannah River Nuclear Solutions – has not yet completed its assessment of how the proposed change would affect personnel and jobs.

"There are also discussions of possibly revising the fiscal 2012 budget from 'safe shutdown' to 'operable,' " Gunter said. "But that is a discussion that's still under way."

## **144 Get Layoff Notices At Mission Support Alliance (TRICITYH)**

By Annette Cary

Tri-City (WA) Herald, March 23, 2011

Almost 150 people learned Monday that they are losing their jobs at Hanford in the first round of layoffs linked to the end of federal economic stimulus money.

Mission Support Alliance notified all 68 employees who had applied for a voluntary layoff that their applications had been accepted.

But the Hanford contractor, which provides support services for the nuclear reservation, had been prepared to accept up to 200 voluntary layoff applications, said spokeswoman Deanna Smith.

To help make up the difference, it notified 76 employees that they also would be laid off. All 144 employees will leave their jobs at month's end.

Hanford staffed up when it received \$1.96 billion in American Recovery and Reinvestment Act money starting in spring 2009 to supplement annual budgets of about \$2 billion. Most of the one-time money is expected to be spent by Sept. 30.

Although Mission Support Alliance received none of the economic stimulus money directly, it increased staff to support other contractors, including hiring and providing training and information technology services.

It expects to cut its staff by 300 by the end of September. A second request for employees who want to leave voluntarily is planned in May.

In addition, CH2M Hill Plateau Remediation Co., which received \$1.3 billion of the Hanford economic stimulus money, expects to cut 1,350 jobs through a combination of voluntary and involuntary layoffs.

The central Hanford cleanup contractor told employees in January that they could volunteer for layoffs during a 21-day period starting in late May. Jobs are expected to be cut in July, August and September.

The Mission Support Alliance employees who received layoff notices Monday included a broad range of management, administration, professional and organized labor employees, Smith said.

Employees will receive one week's severance pay for every year worked, up to 20 years. In addition, workers may elect continued medical coverage under a DOE program for displaced workers.

Mission Support Alliance is working with WorkSource Columbia Basin to help workers find new jobs. DOE also has arranged for a virtual worker transition center, which will offer computerized job search services nationwide to environmental cleanup workers.

An early retirement program had been proposed for Hanford contractor employees, but DOE did not approve it, finding it too costly.

– Annette Cary: 582-1533; acary@tricityherald.com

## **Hanford official's talk to review Japan impacts (TRICITYH)**

Tri-City Herald (WA), March 23, 2011

The director of a monitoring lab at Hanford will give a presentation today at Columbia Basin College that will include comments on the nuclear crisis in Japan and what it means for American nuclear plans.

James Conca is director of the Waste Sampling and Characterization Facility, a radiological and environmental monitoring lab that is a part of the Mission Support Alliance at Hanford.

He will discuss how energy needs affect everything from the economy to national security in a presentation titled "The Geopolitics of Energy: Achieving a Just and Sustainable Energy Distribution by 2040."

He also will discuss the Japanese Fukushima nuclear incident's effect on the US nuclear industry, geologic risks and how the latest reactor designs can handle such devastating events.

Read more: <http://www.tri-cityherald.com/2011/03/22/1418762/hanford-officials-talk-to-review.html#ixzz1HPrdQOFe>

## **Hanford Whistle Blower Case More Closely Linked With DOE (NPR)**

NPR, March 23, 2011

RICHLAND, Wash. – Documents just surfacing from an ongoing lawsuit are raising questions about the demotion of a Hanford whistleblower and whether a top manager with the Department of Energy was involved.

Last July Walt Tamosaitis was removed from a top management position with a Hanford contractor URS. URS was one of many businesses that subcontracted with another private business, Bechtel, to build a massive \$12 billion radioactive waste treatment plant for the federal government.

Tamosiat's job was to trouble-shoot any engineering issues that came up along the way. Tamosiat's claims he was demoted because of the questions he raised about the safety of the plant. He's suing Bechtel and URS.

Tom Carpenter of the watchdog group Hanford Challenge says email strings found in this court process show that DOE was also involved in Tamosaitis' demotion.

Tom Carpenter: "The evidence is starting to come out that there certainly did appear to be some internal agreements to get him off the site and the project."

Energy Department spokespeople refused to comment on these developments. But in previous statements on this issue they've said that the federal government doesn't get involved in contractor staffing decisions and was not involved in Tamosaitis' demotion.

On the Web:

Tamosiatis case documents:

<http://www.hanfordchallenge.org/wp-content/uploads/2010/08/2011-2.31-New-Evidence-shows-DOE-role-in-Tamosaitis-removal.pdf>

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## **Global Crises Overshadow Obama's 2011 Agenda (USAT)**

By Susan Page, Usa Today

USA Today, March 23, 2011

WASHINGTON — President Obama returns to the White House today after a six-day trip to Latin America that was intended to focus on jobs, trade and the economy — but the world just wouldn't cooperate.

A partial nuclear meltdown in Japan, a US military operation in Libya, a looming budget showdown in Washington and more have overwhelmed Obama's agenda, raised risks for the nation's fragile economic recovery and opened him to criticism from not only the emerging Republican presidential field but also some congressional Democrats.

Welcome home, Mr. President.

"I didn't think anything could take the cameras off the Middle East, and then Japan has a triple disaster" of an earthquake and tsunami that damaged nuclear plants, says Steven Clemons of the centrist New America Foundation. "It's like out of a Godzilla movie. You have to wonder, what's the next thing?"

"I have spent the bulk of the last month literally in the Situation Room," Vice President Biden told a reception for major Democratic donors in Boston on Monday.

Just eight weeks ago, Obama outlined in his State of the Union Address his priorities for the year. He coined the phrase "winning the future," called the challenges of the day "our generation's Sputnik moment" and endorsed both deficit reduction and spending on energy, education and infrastructure. He set goals to expand access to high-speed rail, increase college-graduation rates and generate clean energy.

Since then, the administration's efforts to spotlight those initiatives through presidential trips, events by Cabinet members, conference calls with reporters and op-eds in newspapers have been swamped by an unrelenting crush of news, from public employees protesting at the Wisconsin state Capitol to pro-democracy demonstrators marching in the streets of Cairo.

In a sign of how quickly things have changed, consider this: Obama's State of the Union speech didn't mention Egypt — then ruled by Hosni Mubarak, a US ally for decades who has since been ousted — or refer to the safety concerns over nuclear power that are sparking headlines around the world. There wasn't a word about Libya or collective-bargaining rights, issues now front and center.

"I can't remember seeing anything like this in terms of the sweep of the different things going on," says Norman Ornstein, a veteran congressional scholar at the American Enterprise Institute. "It makes it very tough for a president who tries to use a foreign trip to help frame an agenda and use his presence and the bully pulpit to get a message across."

At a news conference Tuesday in El Salvador, the questions for Obama from US reporters were about Libya. He acknowledged the press of the unexpected: "Events happen around the world in which the United States, with our unique capabilities, has to respond."

Presidential historian Robert Dallek cautions against declaring the current crush of challenges unprecedented, but he has to reach back seven decades to cite a more dramatic example. "Think of the Franklin Roosevelt period of 1939 to 1941, when he confronted intensely isolationist sentiment in the country and the dangers from Nazism and Japanese militarism," he says.

Global turmoil has tested Obama's leadership and upended his promise to sharpen his focus on reducing the nation's stubbornly high jobless rate. It also has unsettled some Americans.

Confidence in the economy has fallen to its lowest level of the year, according to a Gallup Poll released Tuesday. Now, 32% of Americans believe the economy is getting better; a year ago, when optimism that the recession was over was beginning to take hold, 35% did.

And unlike in FDR's day, the instantaneous nature of modern communications can amplify the clamor.

"It does create a sense of immediacy and urgency ... to have this 24/7 news cycle with people on television yammering away constantly about 'Look what's going on!'" Dallek says. "It does heighten the sense of crisis and danger."

Crisis has defined Obama's presidency from the start. At his inauguration, he faced the worst economic downturn since the Great Depression. After a bailout for automakers and a stimulus package, he pushed a health care overhaul through Congress — the one-year anniversary of its signing is today — that continues to split the public and energize his opposition.

Now Obama's decision to use US military forces to impose a "no-fly zone" over Libya has prompted criticism from Republican presidential hopefuls that the president dithered before agreeing to act. Former Massachusetts governor Mitt Romney called Obama "tentative, indecisive, timid and nuanced." Former House speaker Newt Gingrich dubbed him "spectator in chief."

Lawmakers in both parties, including such Democratic stalwarts as House Caucus Chairman John Larson of Connecticut, complain that Obama failed to fully consult with Congress before ordering US forces into combat.

Ahead: Funding for the federal government? It expires April 8.

## **US Senate Panel To Weigh Cybercrime Costs (AFP)**

AFP, March 23, 2011

WASHINGTON (AFP) – A key US Senate panel announced Tuesday it will hold a March 29 hearing on the economic costs of cyberattacks and cyber crimes like identity theft and hacker strikes on government computers.

The US Senate Commerce Committee said it "will explore how cyber attacks imperil America's economy, as well as examine the private sector's role in protecting networks from cyber exploitation and theft."

"Every day, cyber thieves are stealing our identities, our money, our business innovations and our national security secrets," said the panel's chairman, Democratic Senator Jay Rockefeller.

"They are trying to rob us of our economic and global competitiveness, and right now we're not stopping them. There is too much at stake and no time to waste. I am committed to getting a cybersecurity bill passed this year."

The hearing will include testimony from government officials, the private sector, and security specialists.

## **INTERNATIONAL NUCLEAR NEWS:**

### **Power Lines Up In Progress At Japan Nuclear Plant (AP)**

By Eric Talmadge And Mari Yamaguchi, Associated Press

Associated Press, March 23, 2011

FUKUSHIMA, Japan – Workers at a leaking nuclear complex hooked up power lines to all six of its reactor units, but other repercussions from a massive earthquake and tsunami still rippled across Japan as economic losses mounted at three flagship companies.

The progress on the electrical lines at the Fukushima Dai-ichi nuclear power plant was a welcome and significant advance Tuesday after days of setbacks. With the power lines connected, officials hope to start up the overheated plant's crucial cooling system that was knocked out during the March 11 earthquake and tsunami that devastated Japan's northeast coast.

Tokyo Electric Power Co. warned that workers still need to check all equipment for damage first before switching the cooling system on to all the reactor units — a process that could take days or even weeks.

Late Tuesday night, Tokyo Electric said lights went on in the central control room of Unit 3, but that doesn't mean power had been restored to the cooling system. Officials planned to try to power up the unit's water pumps later Wednesday.

Emergency crews also dumped 18 tons of seawater into a nearly boiling storage pool holding spent nuclear fuel at Unit 2, cooling it to 122 degrees Fahrenheit (50 degrees Celsius), Japan's nuclear safety agency said. Steam, possibly carrying radioactive elements, had been rising for two days from the reactor building, and the move lessens the chances that more radiation will seep into the air.

Added up, the power lines and concerted dousing bring authorities closer to ending a nuclear crisis that has complicated the government's response to the catastrophic earthquake and tsunami that killed an estimated 18,000 people.

Its power supply knocked out by the disasters, the Fukushima complex has leaked radiation that has found its way into vegetables, raw milk, the water supply and even seawater. Early Wednesday, the government added broccoli to the list of tainted vegetables, which also include spinach, canola, and chrysanthemum greens. Government officials and health experts say the doses are low and not a threat to human health unless the tainted products are consumed in abnormally excessive quantities.

The Health Ministry ordered officials in the area of the stricken plant to increase monitoring of seawater and seafood after elevated levels of radioactive iodine and cesium were found in ocean water near the complex. Education Ministry official Shigeharu Kato said a research vessel had been dispatched to collect and analyze samples.

The crisis continued to batter Japan's once-robust economy.

Three of the country's biggest brands — Toyota Motor Corp., Honda Motor Co. and Sony Corp. — put off a return to normal production due to shortages of parts and raw materials because of earthquake damage to factories in affected areas.

Toyota and Honda said they would extend a shutdown of auto production in Japan that already is in its second week, while Sony said it was suspending some manufacturing of popular consumer electronics such as digital cameras and TVs.

The National Police Agency said the overall number of bodies collected so far stood at 9,099. An additional 13,786 people have been listed as missing, though there may be some overlap on those two lists.

"We must overcome this crisis that we have never experienced in the past, and it's time to make a nationwide effort," Chief Cabinet Secretary Yukio Edano, the government's public point-man, said Tuesday in his latest attempt to try to soothe anxieties.

Still, tensions were running high. Officials in the town of Kawamata, about 30 miles (50 kilometers) away from the reactors, brought in a radiation specialist from Nagasaki — site of an atomic bombing during World War II — to calm residents' fears.

"I want to tell you that you are safe. You don't need to worry," Dr. Noboru Takamura told hundreds of residents at a community meeting. "The levels of radiation here are clearly not high enough to cause damage to your health."

But worried community members peppered him with questions: "What will happen to us if it takes three years to shut down the reactors?" "Is our milk safe to drink?" "If the schools are opened, will it be safe for kids to play outside for gym class?"

Public sentiment is such in the area that Fukushima's governor rejected a request from the president of Tokyo Electric, or TEPCO, to apologize for the troubles.

"What is most important is for TEPCO to end the crisis with maximum effort. So I rejected the offer," Gov. Yuhei Sato said on national broadcaster NHK. "Considering the anxiety, anger and exasperation being felt by people in Fukushima, there is just no way for me to accept their apology."

While many of the region's schools, gymnasiums and other community buildings are packed with the newly homeless, in the 11 days since the disasters the numbers of people staying in shelters has halved to 268,510, presumably as many move in with relatives.

In the first five days after the disasters struck, the Fukushima complex saw explosions and fires in four of the plant's six reactors, and the leaking of radioactive steam into the air. Since then, progress continued intermittently as efforts to splash seawater on the reactors and rewire the complex were disrupted by rises in radiation, elevated pressure in reactors and overheated storage pools.

Radiation levels have abated from last week's highs, allowing authorities to bring in more workers. By Tuesday, 1,000 plant workers, subcontractors, defense troops and firefighters were at the scene, the Nuclear and Industrial Safety Agency said.

Tokyo Electric and experts said still more time is needed to replace damaged equipment and vent any volatile gas to make sure the restored electricity does not spark an explosion.

"You're going to get fires now as they energize equipment," said Arnold Gundersen, the chief engineer at the US-based environmental consulting company Fairewinds Associates. "It's going to be a long slog."

The Vienna-based International Atomic Energy Agency said that monitors have detected radiation 1,600 times higher than normal levels — but in an area about 12 miles (20 kilometers) from the power station, at about the perimeter of the evacuation area declared by the government last week.

Radiation at that level, while not high for a single burst, could harm health if sustained. If such levels were projected to last three days, US authorities would order an evacuation as a precaution.

The levels drop dramatically the farther you go from the nuclear complex. In Tokyo, about 140 miles (220 kilometers) south of the plant, levels in recent days have been higher than normal for the city but still only a third of the global average for naturally occurring background radiation.

There have been few reports of looting since the disasters struck. But someone did take advantage of a bank's crippled security system that left a vault wide open — allowing at least one person to walk off with 40 million yen (\$500,000), police said Tuesday.

## **Electricity Connected To Daiichi Reactors As Japanese Evacuees Struggle For Normalcy (WP)**

By David Nakamura And And Brian Vastag

Washington Post, March 23, 2011

TOKYO — Crews at the heavily damaged Fukushima Daiichi nuclear power plant reached a milestone Tuesday as they finished connecting external power to all six of the facility's reactors.

Workers were going to test the plant's internal electrical and cooling systems to see whether they can cool the overheated reactors and prevent further meltdown and releases of radiation.

Crews have been using external pumps to send seawater into three of the facility's six reactors after the cooling systems failed following the March 11 earthquake and tsunami.

Concerned that the highly corrosive seawater might have damaged equipment, the plant's operator, Tokyo Electric Power (Tepco), was "checking each electrical device on each unit," said Taro Ishida, a representative of the Federation of Electric Power Companies in Japan, an industry group in Washington.

In the meantime, the power company resumed rolling blackouts in many areas of Japan in an effort to conserve energy.

On Tuesday, 11 days after the 9.0-magnitude earthquake and tsunami that struck off the coast of Sendai in northeastern Japan, the National Police Academy said that 9,080 people had been killed and that 13,561 were missing.

There were four sizable aftershocks in Tokyo on Tuesday, including one at lunchtime large enough to trigger an early-warning system of TV and cellphone alerts.

With reconstruction costs pegged by the World Bank at up to \$235 billion, Japanese government officials pledged to pump public money into the relief effort. The Kyodo News agency reported that Koichiro Gemba, the national policy minister, said three supplementary budgets could be needed in fiscal 2011 to fund the reconstruction effort.

In the battle to limit radiation from pools of uranium fuel, concrete-pumping trucks turned their spindlelike arms on unit 4 and sprayed seawater directly into that reactor's fuel pool. Meanwhile, water guns from the Tokyo fire department sprayed the pool in unit 3. Previous efforts to cool the pools included seawater drops from helicopters.

The used fuel pools still present the "highest concern" at the facility, said Graham Andrew, a technical adviser to the director general of the International Atomic Energy Agency in Vienna. If the pools heat up, they can emit high doses of radiation, further hindering progress. Work had been suspended the previous day because of concerns about smoke from two of the units.

At a news briefing, Japanese Chief Cabinet Secretary Yukio Edano said that the government will analyze potential impacts on coastal fisheries, adding fish and shellfish to spinach and other vegetables on the list of foods that the government is monitoring for radioactive contamination.

Adding to concerns about the food supply, the Japanese government reported detecting radioactive fallout in seawater near the facility and in soil 25 miles away. Tepco said that concentrations of radioactive iodine-131 just south of the facility were more than 100 times higher than the legal limit.

Many of the estimated 140,000 residents who lived within 12 1/2 miles of the facility are camped in evacuation centers such as the one visited Tuesday by a high-ranking power company official, who apologized to evacuees by saying he was "sorry to have caused you trouble."

"We will put all our efforts toward putting things under control as soon as possible," Norio Tsuzumi, the executive vice president of Tepco, told those living at a center in Tamura City in Fukushima.

A TV broadcast showed residents of the shelter peppering Tsuzumi with comments such as: "We won't be able to farm anymore and will lose our source of income!"

The evacuation center in Tamura City is one of hundreds that have been hastily organized to serve those displaced by the triple disaster.

In Saitama, a sprawling city north of Tokyo, about 2,300 people were sleeping in the wide hallways of the Saitama Super Arena and living off donated rice. Most come from the once-rural town of Futabamashi, next to the damaged Daiichi plant.

The government ordered everyone to evacuate Futabamashi soon after the earthquake and chartered dozens of buses to Saitama. Families from other flooded towns and areas close to the plant made their own way south as well.

A small but welcome semblance of normalcy came Tuesday for the families at the shelter; after nearly two weeks, their children could go to school.

Yukie Yamada, a professional education advocate, had heard about the shelter and offered to open a school. She brought her own worksheets and reading materials and recruited scores of volunteers, many of them retired teachers.

On the first morning, more than 80 children signed in at the makeshift classroom in the arena's basement, each picking out assignments organized by grade level.

By afternoon, elementary students were reviewing multiplication tables with help from tutors, and middle-schoolers were practicing their English.

School is familiar for the children, organizers said, and helps take their mind off the stress of displacement and survival. At the beginning of the day there were no smiles on their faces, said Miwako Hamanaka, one of the coordinators of the makeshift school. But by the end, the youngsters were talking and having fun.

Shigeyuki Kuboki said that school was a welcome change of pace for his three daughters. They abandoned their flooded home in the town of Yotsukura 11 days ago, bringing little more than school supplies.

They hope to return and start over, Kuboki said, but not until the nearby nuclear plant stabilizes.

Meanwhile, in Vienna, the IAEA said it was not receiving complete information about the state of the nuclear facility. In the United States, political and public opinion fallout from the disaster intensified.

Sen. Barbara Boxer (D-Calif.) released excerpts of an e-mail from the National Regulatory Commission that listed California's two nuclear power plants as the only such facilities in the United States located in "high seismic hazard" zones. For a week, Boxer and Sen. Dianne Feinstein (D-Calif.) have been pressing the NRC for safety reviews of the nuclear stations at San Onofre and Diablo Canyon.

And a new survey documents declining support for nuclear power. Conducted by the nonprofit Civil Society Institute, the survey of 800 adults found that 53 percent support "a moratorium on new nuclear reactor construction in the United States," but only if energy conservation and wind and solar power can meet the country's energy needs. In addition, 73 percent said they opposed federal loan guarantees for new nuclear facilities.

"It's not at all surprising that support would have slipped, given the events of the past few weeks," said Steven Kerekes, a spokesman for the Nuclear Energy Institute, an industry lobbying group. "It's going to be a challenging time for our industry, no question."

Kerekes said the industry will continue to promote nuclear power as vital for American energy independence and for moving to a "low-carbon future."

## **Japan Nuclear Fears Ease As Power Is Restored (USAT)**

By Dan Vergano, Usa Today

USA Today, March 23, 2011

Japan's nuclear plant crisis steadied Tuesday, with power returning to control rooms at its imperiled reactors, while seawater in a discharge canal showed elevated radiation readings.

The most difficult news from the March 11 earthquake and tsunami continued to be the human toll. Japan's National Police Agency said Wednesday more than 9,300 are dead, with nearly 13,800 people missing.

A police spokesman from one of the of the hardest-hit prefectures, Miyagi, estimates that the deaths will top 15,000 in that region alone. Police in other devastated areas declined to estimate eventual tolls, but said the confirmed deaths in their areas already number nearly 3,700.

More than 200,000 people are displaced and living in shelters.

On top of that, the Japanese continue to live with aftershocks of the magnitude-9.0 quake. There were two magnitude-6.6 quakes on Tuesday in a country still nervously watching developments at the crippled Fukushima Dai-ichi Nuclear Power Station.

"I am cautiously optimistic we are out of danger from the reactors," said nuclear engineer Bill Martin of the University of Michigan.

Of the nuclear plant's six reactors, seawater pumped through backup generators has kept temperatures stable at three that were operational when the quake struck.

Pumping trucks, including construction vehicles capable of shooting 50 tons of water an hour to precise locations, have helped keep up water levels in several pools holding dangerously hot spent fuel rods. "Those pools are now the problem," Martin says.

Uncovered or overheated spent fuel rods in the pools, the sites of fires and smoke for the last week, likely have contributed to elevated radiation readings inside and outside the plant, according to the International Atomic Energy Agency.

Now, modeling by Austria's Central Institute for Meteorology and Geodynamics, first reported by Nature magazine, suggests that the Japanese nuclear accident has released 20% as much radioactive iodine and 50% as much radioactive cesium — most of it blown to sea — as was released in Russia's 1986 Chernobyl accident.

Because soil radiation greatly exceeds legal limits, the government early today added broccoli to the list of tainted vegetables and milk barred from distribution from the plant region. The government said that radiation levels in the region were still below those posing any immediate threat to human health.

Seawater pumped into the reactors boils off as it cools the partly melted fuel rods. Some of it was vented as steam that carried radioactive iodine — a concern because it can trigger thyroid cancer unless precautions are taken. Engineers released the steam to relieve pressure on the three steel vessels containing the reactor rods.

Runoff from seawater used to cool the spent fuel rod pools likely also contributed to contamination inside and outside the plant, Martin and others suggest. The Health Ministry ordered increased seawater and seafood monitoring in response to radioactive iodine and cesium found in ocean water near the complex.

"They are not really out of the woods yet," said nuclear engineer David Lochbaum of the Union of Concerned Scientists, an industry watchdog group.

As a next step, plant engineers hope to restart cooling pumps at the Unit 3 reactor thought to be damaged in a March 14 hydrogen gas explosion. Restarting cooling could also lower temperatures at the spent fuel pool there. Tokyo Electric Power warned that workers still need to check all equipment for damage first before switching on the cooling systems in reactor units.

## **Japan Ignored Warning Of Nuclear Vulnerability (WSJ)**

By Norihiko Shirouzu And Peter Landers

Wall Street Journal, March 23, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

## **Biden, Clinton Salute Japan Resilience (AFP)**

AFP, March 23, 2011

WASHINGTON (AFP) – US Vice President Joe Biden and Secretary of State Hillary Clinton on Tuesday voiced admiration for the response of ordinary Japanese to the major earthquake as they pledged continued US support.

Biden and Clinton paid separate visits to the Japanese embassy in Washington to sign a condolence book for the thousands of victims of the country's most powerful ever earthquake. President Barack Obama signed the book last week.

After spending several minutes writing his response, Biden said that the world has been impressed by the "resolve of the Japanese people, the orderly way in which they are dealing with" the crisis.

"I've traveled around the world and I promise you the whole world is looking at the courage, bravery and the resolve being demonstrated by ordinary people," Biden told reporters.

On her own visit, Clinton said it was "our honor to stand with Japan," pointing to Tokyo's past assistance to other nations in distress.

"This has been an unprecedented disaster, but it has provoked an unprecedented show of resilience by the Japanese people and a pledge of cooperation and friendship from the American people," Clinton said.

"We will be with Japan and the people of Japan as you recover and rebuild, and we will stand with you in the months and years ahead," she said.

The United States, which stations nearly 50,000 troops in Japan, mobilized around a dozen ships to bring in relief after the March 11 disaster.

More than 21,000 people are confirmed dead or listed as missing after the 9.0-magnitude quake, which unleashed a giant tsunami that swept away entire towns.

## **Informational Uncertainty In The Wake Of Japan's Nuclear Crisis (CounterPunch)**

### **Downplaying Disaster**

By Gregory Button

Counter Punch, March 23, 2011

"In a disaster of this magnitude timely and accurate information is of utmost importance." Jim Ricco, nuclear expert. [1]

In recent days the Japanese government and Tokyo Electric Power have come under increasing criticism for their handling of the nuclear crisis at the Fukushima Daiichi nuclear plant. Officials from both parties are under suspicion of withholding or manipulating vital information about the tragedy. After several days of incomplete and contradictory information, international nuclear experts, the international press, even the Japanese press along with some diplomatic officials have lashed out at both parties for their failure to provide sufficient information. [2] In turn, Japan's prime minister, no doubt in an attempt to point the finger in another direction, attacked the power company for not informing his government about explosions at the plant that occurred earlier last week. Yurika Ayukawa, a Chiba University professor of the environment explained, "there is no transparency about the information they are saying." [3] Uncertainty and cynical speculation about authorities' motives have become of central concern to many at home and abroad.

Recently, Gregory Jaczko, the chairman of the United States Nuclear Regulatory Commission, dispelled any doubts that there were grave inconsistencies in the way in which the Japanese government was representing the seriousness of the event when he gave a grimmer appraisal posed by the threat than that of the Japanese government. On the heels of this searing criticism came the news that levels of radiation exceeding government standards of safety had been detected in spinach and milk ninety miles from the Fukushima plant.

Eight days after the nuclear emergency began a senior official in the Japanese government stated that government officials should have admitted the severity of the crisis much earlier. [4] Whether this admission will change the government's ongoing response remains to be seen. Even if there is a serious sea change in the government's crisis communication policies such a

maneuver can hardly undo all the unnecessary harm that has been inflicted by the information distortion to date. If the historical record of the behavior of officials in previous disasters is any indicator, the odds are this mea culpa may not prove to be long-lived.

Governments and corporations often downplay a disaster and provide the public with overly optimistic accounts of the severity of an event. In order to avoid public scrutiny and to safeguard corporate interests (in this case the nuclear power industry) governments often withhold vital information not only from its citizens but also from outside experts and the international community.

In the days, weeks and even months that follows in the wake of a disaster people feel uncertain about real and perceived risks. Information about the nature and the extent of these risks is incomplete and typically conflicting. The parties involved in the disaster, as well as the media, public agencies, and non-profits release a cacophony of communications that the afflicted population and the general public often sees as conflicting and confusing.

This sense of confusion is accentuated when, as in the present nuclear crisis in Japan, knowledge is withheld and uncertainty is amplified. In such instances both disaster victims and outside experts have to struggle to obtain credible sources of information. A common phrase that is often heard in such circumstances and has been re-iterated in the current nuclear nightmare, is "It is hard to know who to believe." For those living in close proximity to the affected area, the availability of reliable information about potential threats is critical in order for people to make accurate appraisals of how to respond to environmental threats.

The kind of informational uncertainty that has abounded in Japan in recent days generates public discourse about not only who is to blame for perceived threats and actual harm, but also who is responsible for an effective and timely remediation. It also raises questions about the severity of the event and the potential long-term harm that may ensue particularly in the case of the current crisis. Moreover, the informational vacuum that exists in the wake of a disaster, let alone a major catastrophe, can produce harmful rumors and misinformation that can obstruct a timely response. One of the major negative effects of this uncertainty and confusion is that it can seriously impede an effective and timely response to a disaster. In short, critical hours and even days can be lost in the resulting misinformation and confusion.

Science and technology are often involved in disasters especially technological ones like the one unfolding at the Fukushima nuclear reactors in Japan. Citizens commonly turn instinctively to scientists for answers, as do politicians and corporations. While the media seeks immediate answers to meet daily deadlines and the public demands instant answers, science by virtue of its methodologically rigorous approach cannot readily respond to these demands. Science can be a slow and painstaking process that often cannot produce the sound bites the media craves or the reassurances and insights the public demands. The situation is worsened when information is withheld not only from the media and the public but from the larger scientific community as well. The present crisis in Japan is unfortunately a supreme example of this type of obfuscation.

Usually such a vortex of conflicting information and lack of transparency generates a climate of controversy among scientists and the lay public. Lay people in particular are often confused by the ambiguous or contradictory statements made by some experts and puzzled about how to make sense of the ambiguities. In the present instance the media and outside experts are just as puzzled.

In this vortex of uncertainty and lack of knowledge people can become skeptical about the reliability of scientific evidence. Some suddenly see science as lacking in certainty and incapable of resolving ambiguity. In the process, science's systematic invincibility is called into question and its monopoly on truth is challenged. Unfortunately, when officials behave as they have in the wake of this disaster, their behavior undermines the public's faith in the virtues of science.

At times, science and engineering are seen as being the cause of the disasters such as in the case of the nuclear accident at Three Mile Island or the catastrophic meltdown in Chernobyl, or the chemical explosion in Bhopal. As a result, some individuals view science as too narrowly focused to undertake a holistic approach to solve their dilemmas or adequately address the ontological challenges that they face.

In the early days of the crisis the Japanese government reassured their nation that they were in no danger of experiencing a major nuclear disaster and downplayed any health or environmental risks. The Tokyo Electric Power issued opaque statements, which described the ongoing events in extremely sparse, technical language totally de-contextualized from the everyday lives of the citizens whose lives have been placed at risk.

These early statements by both the government and the power company failed to disclose the true nature of the situation. Their reports were conflicting and ambiguous to the Japanese public, the media, and international nuclear experts. In fact, according to at least one report, nuclear experts have doubted the accuracy of the official information that has been issued throughout the crisis. [4] The credibility of the government's statements has also been undermined by reports that they had previously downplayed and covered up previous, less serious, nuclear events.

The Guardian reported WikiLeaks released a diplomatic cable in which "a high profile" Japanese politician told US diplomats that the Japanese government's ministry responsible for nuclear power has been "covering up nuclear accidents and obscuring the true costs and problems associated with the nuclear industry." [6]

Examples of what have been termed "hidden episodes" include incidents reported in the New York Times. According to the Times, a fire and small amount of radiation leaked at a nuclear plant located in Kashiwazaki City. Reportedly, Tokyo Electric Power built the world's largest nuclear power plant, however unknowingly, on an active seismic fault according to an investigative report that came out in the wake of an accident. [7]

Paul Dorfman, a member of a now defunct UK advisory committee, expressed concern when he declared, "we are seeing a clear pattern of secrecy and denial" in commenting on the present crisis. According to Dorfman, "There is a profound uncertainty about the impact of the disaster." [8]

Aileen Mioko Smith, who once lived near Three Mile Island and is now a member of an environmental organization in Tokyo underscored these statements by saying, "People aren't getting the information they need." [9]

Similar concerns were echoed by Kenneth Bergeron, a physicist and former Sandia Scientist, that industry assurances stressing that the situation was under control flew in the face of the fact that, "we don't know what is going on." [10]

All of which suggests that the optimistic appraisals by the government were not based so much on fact as a public relations campaign (and no doubt a certain degree of confusion) to downplay uncertainty and reassure the public and the international community.

In a press conference sponsored by several groups, Robert Alverz, who served at one time as a Senior Policy Advisor to the US Department of Energy and a deputy Assistant Secretary for National Security and the Environment, galvanized Bergeron's claim by saying, "There is a lot we don't know." In other words what these men are saying is that there isn't sufficient scientific evidence to support the downplaying of potential harm. [11]

Representative of the uncertainty and confusion surrounding the crisis is one of the updates issued Tokyo Electric Power: "Unclear if radiation was released;" terse statements such as this fail to disclose much useful information. Moreover, when speaking of potential health threats little has been said about all important topics like ignoring the health risks to low level exposure, exposure rates and cumulative risk. In short, the nuances of public health risks are glossed over and given a fuzzy presentation that fails to fully inform those especially at risk.

Indeed, thus far there have been conflicting and contradictory reports issued by the government, the power company and others making it extremely difficult to accurately assess the exact threat of radiation releases let alone what ever else may have been happening at the Fukushima Daiichi plant. Questions have been raised about the water levels in the various cooling chambers as well as questions about whether there has been damage to the containment vessels or if so, how much. Questions have also been raised about the source of some radioactive releases, the amounts of the releases, and of late, whether one of the reactors sustained structural damage prior to the present crisis during the catastrophic earthquake. These and many other questions remain unsolved in the minds of both experts and citizens alike.

Lack of transparency and the downplaying of events and the ensuing uncertainty is not only a legacy of previous disasters (e.g. Love Canal, the TVA ash spill, the BP Gulf oil spill and countless others) but the world's two nuclear disasters. Industry authorities downplayed the partial meltdown at Three Mile Island (TMI/1979) much to the chagrin of many Pennsylvania residents and their governor. Governor Thornburgh and his staff were frustrated in their attempts to reliable information from Metropolitan Edison, which tended to smooth over inconsistencies over the facts surrounding the accident. Evaluations in the wake of the event found that despite an abundance of uncertainties, the utility company adopted a public relations strategy that tended to overlook the uncertainties and create more of an air of certainty.

The degree of uncertainty that existed is best characterized by a statement made by the NRC chairman, Joseph Henrie, "We are operating almost totally in the blind...its like a couple of blind men staggering around trying to make decisions. [12] Although, we must be careful to acknowledge the over-all specificities of each case are vastly different in some ways the ambiguity of the situation surrounding TMI bears an uncanny relation to the present situation in Japan and to a lesser degree to Chernobyl.

While there was also a withholding of information and a considerable uncertainty surrounding the terrible tragedy in Chernobyl there are some extreme differences.

Most notably, in direct contrast to both TMI and recent events in Japan, the Soviet Union did not acknowledge the world's worst nuclear accident until almost three days after a series of explosions destroyed one of the reactors in Chernobyl. Nor did they evacuate the nearby town residents until almost a full day after the accident. Their acknowledgement of the catastrophe only came as the result of a radioactive plume triggered alarms at a nuclear reactor in Sweden three days after the initial explosion.

While the US government was extremely critical of the Soviet Union's lack of transparency, the US government itself tried to obstruct the access of information about the world's worst nuclear disaster by attempting to withhold information that might be deemed harmful to the US nuclear industry. For example, both the US Department of Energy and the Nuclear Regulatory Commission imposed a gag order on their employees and contractors as well as scientists at national labs. In an attempt to limit public information and avoid any comparison between Soviet Nuclear power plants and US reactors, strict instructions were issued to the above personnel to avoid press inquiries about Chernobyl or to provide only simple background information. [13] To some observers this response came as no surprise given the US government's decades long downplaying of the radioactive legacies of the cold war (14).

In the wake of a disaster, governments and corporations can play a decisive role in framing the event and creating an "official" narrative. How such efforts interpret, shape and dispense knowledge and sometimes produce additional uncertainty is crucial. The ways in which knowledge is produced, or withheld, in an atmosphere of pervasive ambiguity is critical to how, and to what degree, a disaster ultimately affects both people and the environment. No matter what the nature of the institutional motive to downplay such threats the primary effect is the same: it not only denies those who are disproportionately affected by the disaster the ability to accurately appraise the threats and adopt the effective coping strategies it also seriously thwarts the ability to arrest the threats and successfully remedy the problem. In the case of the present day nuclear crisis in Japan the stakes couldn't be higher.

It is absolutely imperative that Japanese officials become more transparent in their crisis communication. It is equally imperative, as this present crisis makes clear, that officials around the world realize the severe harm that can be inflicted by the obfuscation and distortion of critical information in the wake of catastrophe.

Gregory Button is a faculty member at the University of Tennessee. He has studied numerous disasters during the last three decades including the nuclear accidents at Three Mile Island and Chernobyl. His recent book is titled, *Disaster Culture: Knowledge and Uncertainty in the Wake of Human and Environmental Catastrophe* (Left Coast Press). He will be speaking at Town Hall Seattle on April 1, 2011. See the Town Hall Seattle website for additional information. He can be reached at: [gregoryvbutton@mac.com](mailto:gregoryvbutton@mac.com)

1. <http://www.guardian.co.uk/world/2011/mar/16/japan-nuclear-crisis-escalates>

2. <http://www.nytimes.com/2011/03/17/world/asia/>

3. <http://www.democracynow.org/seo/2011/3/14/>

4. <http://www.dailymail.co.uk/news/article-1367684/>

5. <http://www.guardian.co.uk/world/2011/mar/14/>

6. <http://www.guardian.co.uk/world/2011/mar/14/>

7. <http://www.guardian.co.uk/world/us-embassy-cables-documents/175295>

8. <http://www.dailymail.co.uk/news/article-1367684/>

9. <http://www.nytimes.com/2007/07/24/world/>

10 & 11. <http://www.psr.org/>

12. Cora Bagley Marrett, *The Accident at Three Mile Island and the Problem of Uncertainty*, in *The Three Mile Island Nuclear Accident: Lessons and Implications*, 1988, 146-156. New York: Annals of the New York Academy of Sciences.

13. Nelkin, Dorothy, 1995, *Selling Science: How the Press Covers Science and Technology*. New York: W.H. Freeman and Company.

14. Johnston, Barbara, ed., 2007, *Half-Lives & Half Truths: Confronting the Radioactive Legacies of the Cold War*. Santa Fe, NM: School for Advanced Research.

## **Australia Weighs Nuclear Push After Japan Crisis (REU)**

By Rob Taylor

Reuters, March 23, 2011

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

## **German Panels To Discuss Nuclear-Safety Issues (WSJ)**

By Jan Hromadko And Bernd Radowitz

Wall Street Journal, March 23, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

## **Italy To Defer Nuclear Energy's Return For A Year (WSJ)**

By Carlo Renda And Liam Moloney

Wall Street Journal, March 23, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

## **Italy Plans One-Year Pause On Nuclear Power (NYT/REU)**

Reuters, March 23, 2011

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

## **Canada Nuclear Plan Gets Environmental OK (REU)**

Reuters, March 23, 2011

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

## **China To Build Nuclear Plant Using Fourth-Generation Technology In April (BLOOM)**

By Dinakar Sethuraman And Rakteem Katakey

Bloomberg News, March 23, 2011

China will start building a nuclear power plant next month using fourth-generation technology that may be less susceptible to meltdown than Japan's damaged Fukushima Dai-Ichi plant.

The "world's first high-temperature, gas-cooled reactor" will be installed at Rongcheng in Shandong province, Cui Shaozhang, deputy general manager at Huaneng Nuclear Power Development Co., a unit of China Huaneng Group Corp., the nation's largest power group, said in an interview yesterday in Singapore.

"There are differences between the Japanese and Chinese reactors," Cui said. "Japan's Fukushima plant was using old technology while Chinese reactors are more advanced."

Japan is trying to prevent a meltdown at Fukushima, where the oldest reactor started operating in 1971, after cooling systems were knocked out by a 9.0-magnitude earthquake and tsunami on March 11.

The Rongcheng plant will use helium, an inert gas, in its cooling system, and reactor cores will be able to withstand temperatures exceeding 1,600 degrees Celsius (2,912 degrees Fahrenheit) for several hundred hours without melting down, China Business News said this week.

"The Chinese government has encouraged us with the pre-condition of safety and efficiency," Cui said, standing next to a model of the high-temperature reactor.

China, planning to build more nuclear reactors than any other country, said on March 16 it suspended approval of all new atomic projects until a safety review is carried out.

China Huaneng, China Nuclear Engineering Corp. and Tsinghua University are joint investors in the 200-megawatt Rongcheng demonstration project, according to Huaneng's brochure. China National Nuclear Corp., the country's biggest atomic plant builder, last July reported a successful test of an experimental reactor using fourth-generation technology.

China started operating its first commercial nuclear station in 1994. It currently has 14 reactors in operation, 26 under construction and 28 planned, according to data on the World Nuclear Association's website.

The nation's nuclear power capacity may reach 40 gigawatts by 2015 and exceed 70 gigawatts by 2020, Han Wenke, head of energy research at the NDRC, said last June. China had 10.82 gigawatts of nuclear power capacity at the end of 2010, the state-owned China Electricity Council said in February.

China Huaneng Group aims to produce about 35 percent of its electricity using cleaner technology by 2020 to cut pollution, President Cao Peixi said last March. The company plans to reduce coal consumption per kilowatt-hour of electricity by about 10 percent to 304 grams by 2020, he said.

To contact the reporter on this story: Dinakar Sethuraman in Singapore at [dinakar@bloomberg.net](mailto:dinakar@bloomberg.net); Rakteem Katakey in New Delhi at [rkatakey@bloomberg.net](mailto:rkatakey@bloomberg.net)

To contact the editor responsible for this story: Clyde Russell at [crussell7@bloomberg.net](mailto:crussell7@bloomberg.net)

## **Turkey Seizes Rifles On Grounded Iranian Plane (AFP)**

By Mahmut Bozarslan

AFP, March 23, 2011

DIYARBAKIR, Turkey (AFP) – The Turkish authorities have seized rifles on a Syria-bound Iranian plane, grounded since the weekend, and questioned its seven-man crew, police and judicial sources said Tuesday.

The cargo plane, a civilian Ilyushin, was ordered to land in Diyarbakir, in Turkey's mainly Kurdish southeast, on Saturday night on suspicion that it had military or illicit cargo on board.

The plane had declared a cargo of spare car parts, but the inspection resulted also in the discovery of a box containing automatic rifles, a police source told AFP, without providing further details on the guns.

The crew was taken to a police station for questioning and argued that the weapons were on board as part of routine security measures, declining to give additional information, the source said.

An "administrative" probe has been launched to see whether the presence of weapons on board complied with international rules, a judicial official said, adding that no criminal charges were to be pressed against the crew.

The authorities confiscated the weapons and were expected to allow the plane to take off en route to Syria.

A Turkish foreign ministry official described the search of the plane as a "routine" procedure under "an overflight permission with the condition of technical landing." He would not give other details.

The Iranian embassy in Ankara declined to comment.

The private Dogan news agency had reported earlier that the crew was detained following the discovery of weapons and ammunition on board.

Police officers unloaded the aircraft's entire cargo, an AFP reporter on the scene saw Monday night.

The Turkish authorities forced another Syrian-bound Iranian plane to land in Diyarbakir on March 16.

After a search lasting several hours, the plane was found to be carrying 150 tonnes of food but "no material contrary to international standards," security sources said.

The Turkish daily Aksam reported Tuesday that the planes were forced to land on a request from the United States on suspicion that they carried "nuclear material and weapons".

The UN International Atomic Energy Agency has been probing allegations since 2008 that Syria has been building an undeclared reactor at a remote desert site called Dair Alzour, which was bombed by Israeli planes in September 2007.

The UN Security Council has imposed sanctions, including an arms embargo, on Iran over its refusal to halt its uranium enrichment programme which the West suspects masks a drive to build nuclear weapons.

**From:** Murray, Heather  
**To:** Hayden, Elizabeth  
**Subject:** RE: BFS  
**Date:** Wednesday, March 23, 2011 8:09:52 AM

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Beth,

Given the other activities OPA is focusing on at this time, i.e. Japan, I wanted to offer you my services to enter OPA's information in BFS, should you require it. I could provide you a spreadsheet showing OPA's current data, It would contain pre-populated columns for FY 13 dollars and FTE. You could make changes this way, if you prefer.

Whichever your preference, please let me know.

Thanks,  
Heather

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**From:** Hayden, Elizabeth  
**Sent:** Monday, March 21, 2011 4:27 PM  
**To:** Murray, Heather  
**Subject:** RE: BFS

OK. Thanks. It won't likely be until later this week.

*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:** Murray, Heather  
**Sent:** Monday, March 21, 2011 4:25 PM  
**To:** Hayden, Elizabeth  
**Cc:** Sheldon, Jeffrey  
**Subject:** BFS

Beth,

I got your voicemail message regarding BFS. I would be happy to come over and show you the updated version. I realize that you are very busy so please let me know when you have time and I will do my best to make sure OPA is covered.

Regards,  
Heather L. Murray  
Sr. Program Analyst  
Budget Analysis Branch/DPB/OCFO

*BBB/145*

Tel: 301-415-0679

e-mail: [heather.murray@nrc.gov](mailto:heather.murray@nrc.gov)

*INSUR*  
**From:** [LIA07 Hoc](#)  
**Subject:** 0600 EDT (March 23, 2011) USNRC Earthquake/Tsunami Status Update  
**Date:** Wednesday, March 23, 2011 6:16:52 AM  
**Attachments:** [NRC Status Update 3.23.11--0600 EDT.pdf](#)

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*HOC* Please find attached a 0600 EDT (March 23, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Jim

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

*BOBB/ 146*

## Coyne, Kevin

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**From:** Coyne, Kevin  
**Sent:** Wednesday, March 23, 2011 10:54 AM  
**To:** Sheron, Brian  
**Cc:** Uhle, Jennifer; Coe, Doug; Hudson, Daniel; Salley, MarkHenry; Beasley, Benjamin; Stutzke, Martin  
**Subject:** Japan Response Impacts for DRA

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Brian –

The biggest impact to DRA in supporting the Japanese response is on the Level 3 SECY paper. Although we can meet the accelerated schedule proposed by the EDO's office, loss of much more of Marty Stutzke's time to addressing GI-199 issues will adversely impact our ability to meet the schedule (Marty has a key role in developing the paper). The information requests on GI-199 and fire have also impacted our fire research and generic issues program, but to a more limited extent. In fact, the fire research staff minimized the impact to core research by working over the weekend to develop Q&A's for the Monday Commission briefing. Obviously, new requests for information or new research needs as a result of the event will add to our work load and have additional impacts.

Let me know if you need any additional information or have questions-

Kevin

BBB/147

**From:** [WebContractor Resource](#)  
**To:** [Hayden, Elizabeth](#)  
**Subject:** FW: COM  
**Date:** Wednesday, March 23, 2011 8:25:17 AM  
**Attachments:** [CmGbj11-0002.docx](#)  
**Importance:** High

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Good Morning Beth,

Would we want this COMM-SECY paper listed on the Japan page?

<http://webwork.nrc.gov:300/reading-rm/doc-collections/commission/comm-secy/2011/>

Thank You,

*David*

Web Team

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**From:** Joosten, Sandy  
**Sent:** Tuesday, March 22, 2011 5:47 PM  
**To:** WebWork Resource  
**Cc:** WebContractor Resource  
**Subject:** COM  
**Importance:** High

Attached for posting is COMGBJ-11-0002.

Release date: 3/23/11

Please post as soon as possible Wednesday morning 3/23/11.

Thanks,  
Sandy

*60613/148*

March 21, 2011

MEMORANDUM TO: Commissioner Svinicki  
Commissioner Apostolakis  
Commissioner Magwood  
Commissioner Ostendorff

FROM: Chairman Jaczko /RA/

SUBJECT: NRC ACTIONS FOLLOWING THE EVENTS IN JAPAN

The tragic events in Japan have reinforced the importance of this agency's mission and efforts. The NRC's existing licensing and oversight process have provided us with a robust framework for assuring safety at our existing facilities. I also believe that one of our greatest assets as an agency is our ability to analyze and learn from new information. This tragedy requires us to do just that. Therefore, I ask my colleagues to join me in directing the Executive Director for Operations to establish a senior level agency task force to conduct a methodical and systematic review of our processes and regulations to determine whether the agency should make additional improvements to our regulatory system and make recommendations to the Commission for its policy direction. I believe the review must necessarily unfold with near term and then longer term objectives.

Near Term Review

- This task force should evaluate currently available technical and operational information from the events in Japan to identify near term/immediate operational or regulatory issues affecting domestic operating reactors of all designs in areas such as protection against earthquake, tsunami, flooding, hurricanes; station blackout and a degraded ability to restore power; severe accident mitigation; emergency preparedness; and combustible gas control.
- The task force should develop recommendations, as appropriate, for changes to inspection procedures and licensing review guidance, and recommend whether generic communications, orders, or other regulatory requirements are needed.
- The task force efforts should be informed by some stakeholder input but should be independent of industry efforts.
- The report would be released to the public per normal Commission processes.

To ensure the Commission is both kept informed of these efforts and called upon to resolve any policy recommendations that surface, I believe the task force should, at a minimum, be prepared to brief the Commission on a 30 day quick look report; on the status of the ongoing near term review at approximately a 60 day interval; and then on the 90 day culmination of the near term efforts. Additional specific subject matter briefings and additional voting items that request Commission policy direction may also be added during the Commission's agenda planning meetings and thus, the staff should be prepared in advance to adapt to the Commission's requests following those agenda planning sessions in this dynamic environment.

## Longer Term Review

- The task force's longer term review should begin as soon as NRC has sufficient technical information from the events in Japan with the goal of no later than the completion of the 90 day near term report, and the task force should provide updates on the beginning of the longer term review at the 30 and 60 day status updates.
- This effort would include specific information on the sequence of events and the status of equipment during the duration of the event.
- The task force should evaluate all technical and policy issues related to the event to identify additional research, generic issues, changes to the reactor oversight process, rulemakings, and adjustments to the regulatory framework that should be conducted by NRC.
- The task force should evaluate interagency issues such as emergency preparedness.
- Applicability of the lessons learned to non-operating reactor and non-reactor facilities should also be explored.
- During the review, the task force should receive input from and interact with all key stakeholders.
- The task force should provide a report with recommendations, as appropriate, to the Commission within six months from the start of the evaluation for Commission policy direction.
- The report would be released to the public per normal Commission processes.

The proposal described above is intended to provide high-level guidance to a new agency task force. I look forward to reaching Commission consensus on an appropriate approach on this important issue as soon as possible.

SECY, please track.

cc: CFO  
EDO  
OGC  
SECY

**From:** [LIA07 Hoc](#)  
**To:** [Borchardt, Bill](#); [Bradford, Anna](#); [Cohen, Shari](#); [Cooper, LaToya](#); [Dyer, Jim](#); [Flory, Shirley](#); [Gibbs, Catina](#); [Haney, Catherine](#); [Hudson, Sharon](#); [Johnson, Michael](#); [Leeds, Eric](#); [Loyd, Susan](#); [Pace, Patti](#); [Schwarz, Sherry](#); [Sheron, Brian](#); [Speiser, Herald](#); [Taylor, Renee](#); [Virgilio, Martin](#); [Walls, Lorena](#); [Weber, Michael](#)  
**Subject:** Update for Go Books - 1800 EDT, March 23, 2011  
**Date:** Wednesday, March 23, 2011 6:04:15 PM  
**Attachments:** [TEPCO Press Release 127.pdf](#)  
[TEPCO Press Release 128.pdf](#)  
[TEPCO Press Release 129.pdf](#)  
[TEPCO Press Release 130.pdf](#)  
[TEPCO Press Release 131.pdf](#)  
[TEPCO Press Release 124.pdf](#)  
[TEPCO Press Release 125.pdf](#)  
[TEPCO Press Release 126.pdf](#)  
[Talking Points 12.pdf](#)  
[ET Chronology 3-23-11 530pm.pdf](#)  
[USNRC Earthquake-Tsunami Update.032311.1800EDT.pdf](#)

Please find attached updated information for the "Go Books".

The updates include:

- The 1800 EDT, 03/23/11 Status Update
- The latest ET Chronology
- The latest TEPCO Press Releases (Numbers 125-131)
- NRC Talking Points

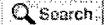
Please let me know if you have any questions or concerns.

-Sara

Sara Mroz  
Communications and Outreach  
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WITH  
Hoc



## Press Releases

### Press Release (Mar 23, 2011) Status of TEPCO's Facilities and its services after Tohoku-Taiheiyou-Oki Earthquake(as of 5:00PM)

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

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

#### [Nuclear Power Station]

##### **Fukushima Daiichi Nuclear Power Station:**

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

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

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

#### \* Unit 1

The explosive sound and white smoke was confirmed near Unit 1 when the big quake occurred at 3:36pm, March 12th. We have started injection of sea water at 8:20 pm, March 12th, and then boric acid which absorbs neutron into the reactor afterwards. At around 2:30 am, March 23rd, we have started the injection of sea water into the reactor from feed water system.

#### \*Unit 2

At 1:25 pm, March 14th, since the Reactor Core Isolation Cooling System has failed, it was determined that a specific incident stipulated in Clause 1, Article 15 of Act on Special Measures Concerning Nuclear Emergency Preparedness occurred (failure of reactor cooling function).

At 5:17 pm, March 14th, while the water level in the reactor reached the top of the fuel rod, we have restarted the water injection with the valve operation.

At approximately 6:14 am, March 15th, the abnormal sound was confirmed near the suppression chamber and the pressure inside the chamber decreased afterwards. It was determined that there is a possibility that something happened in the suppression chamber. While sea water injection to the reactor continued, TEPCO employees and workers from other companies not in charge of injection work started tentative evacuation to a safe location.

Sea water injection to the reactor is still under operation.

On March 18th, power was delivered up to substation for backup power through offsite transmission line. We completed laying cable further to unit receiving facility in the building, and at 3:46 pm, March 20th the load-side power panel of the receiving facility started to be energized. From 3: 05 pm to 5: 20 pm on March 20th, 40 tons of seawater was injected into Unit 2 by TEPCO employees.

At 6:20 on March 21st, white smoke was confirmed arising from the top of the reactor building. As of 7:11 am on March 22nd, smoke decreased to the level where we can hardly confirm. From around 4 pm to 5 pm, approximately 18 tons of sea water was injected into the spent fuel pool by TEPCO employees.

#### \*Unit 3

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

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

As the temperature of water in the spent fuel pool rose, spraying water by helicopters with the support of the Self Defense Force was considered, however the operation on March 16th was cancelled.

At 6:15 am, March 17th, the pressure of the Suppression Chamber temporarily increased, but currently it is stable in a certain range. On

March 20th, we were preparing to implement a measurement to reduce the pressure of the reactor containment vessel (partial discharge of air containing radioactive material to outside) in order to fully secure safety. However, at present, it is not a situation to take a measure immediately to discharge air containing radioactive material to outside. We will continue to monitor the status of the pressure of the reactor containment vessel. Monitoring will be continued.

In order to cool spent fuel pool, water was sprayed by helicopters on March 17th with the cooperation of Self-Defense Forces.  
At approximately past 7:00 pm, March 17th, Self-Defense Forces and the police had started spraying water by water cannon trucks upon our request for the cooperation. At 8:09 pm, March 17th, they had finished the operation.

At 2:00 pm, March 18th, spraying water by fire engines was started with the cooperation of Self-Defense Forces and the United States Armed Forces. At 2:45 pm, March 18th, they had finished the operation.

At approximately 0:30 am, March 19th, spraying water was started with the cooperation of Fire Rescue Task Forces of Tokyo Fire Department started spraying water. At approximately 1:10 am, March 19th, they finished the operation. They resumed spraying water at 2:10 pm. At approximately 3:40 am, March 20th, they finished the operation.  
At approximately 9:30 pm, March 20th, spraying water was started with the cooperation of Fire Rescue Task Forces of Tokyo Fire Department. At approximately 3:58 am, March 21th, they finished the operation.

At approximately 3:55 pm, March 21st, light gray smoke was confirmed arising from the southeast side of the 5th floor roof of the Unit 3 building, and the situation was reported to the fire department at approximately 4:21 pm. The parameters of reactor pressure vessel, reactor containment vessel, and monitored environmental data remained at the same level. However, employees working around Unit 3 evacuated to a safe location. It is observed the smoke has been decreasing. On March 22nd, the color of smoke changed to somewhat white and it is slowly dissipating.

At approximately 3:10 pm on March 22nd, water discharge into Unit 3 by Tokyo Fire Department's Hyper Rescue and Osaka City Fire Department was conducted and completed at approximately 4:00 PM on the same day.

At approximately 10:45 pm on March 22nd, lights in the main operation room were restored.

At 11:00 am on March 23rd, the injection of sea water to spent fuel pool was conducted, and finished approximately at 1:20 pm on the same day.

At 4:20 pm on March 23rd, light gray smoke was observed belching from Unit 3 building. The situation was reported to the fire department at 4:25 pm on March 23rd. The parameters of the reactor, the reactor containment vessel of Unit 3, and monitored figures around the site's immediate surroundings remained stable without significant change. To be safe, workers in the main control room of Unit 3 and around Unit 3 evacuated to a safe location.

\* Unit 4

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

At approximately 5:45 am, a TEPCO employee discovered a fire at the northwest corner of the Nuclear Reactor Building. TEPCO immediately reported this incident to the fire department and the local government and proceeded with the extinction of fire.

At approximately 6:15 am, TEPCO staff confirmed at the site that there are no signs of fire.

At approximately 8:21 am, March 20th, spraying water by fire engines was started with the cooperation of Self-Defense Forces and they finished the operation at approximately 9:40 am. At approximately 6:45 pm spraying water was started by Self-Defenses' water cannon trucks and finished at approximately 7:45 pm.

At approximately 6:30 am, March 21st, spraying water by fire engines was started with the cooperation of Self-Defense Forces and the United States Armed Forces. At approximately 8:40 am, March 21, they had finished the operation.

As of March 21st, cabling has been completed from temporary substation to the main power center.

From approximately 5:20 pm on March 22nd, water discharge from the concrete pumping vehicle was conducted and ended at approximately 8:30 pm on the same day.

From approximately 10:00 am on March 23rd, water discharge from the concrete pumping vehicle was conducted and ended at approximately 1:00 pm on the same day.

\*Unit 5 and 6

\* At 5 am, Mar 19th, we started the Residual Heat Removal System Pump (C) of Unit 5 in order to cool the spent fuel pool. At 10:14 pm, we started the Residual Heat Removal System Pump (B) of Unit 6 in order to cool the spent fuel pool.

\* Unit 5 has been in reactor cold shutdown since 2:30 pm on March 20th. Unit 6 has been in reactor cold shutdown since 7:27 pm on March 20th.

\* At Units 5 and 6, in order to prevent hydrogen gas from accumulating within the buildings, we have made three holes on the roof of the reactor building for each unit

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

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

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

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

\* In total 12 fire engines are lent for spraying water to the spent fuel pools and water injection to the nuclear reactors by various regional fire departments\* as well as Tokyo Fire Department.

\* On March 21st and 22nd, we detected cobalt, iodine and cesium from the seawater around discharge canal of Unit 1, 2, 3 and 4.

\* We detected iodine and cesium in the air collected at the site of Fukushima Daiichi Nuclear Power Station on March 20th and 21st.

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

#### **Fukushima Daiichi Nuclear Power Station:**

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

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

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

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

##### **\* (Unit 1)**

As it is confirmed that the temperature of the Emergency Equipment Cooling Water System \*1 has increased, at 3:20 pm, March 15th, we stopped the Residual Heat Removal System (B) for the inspection. Subsequently, failure was detected in the power supply facility associated with the pumps of the Emergency Equipment Cooling Water System. At 4:25 pm, March 15th, after replacing the power facility, the pumps and the Residual Heat Removal System (B) have been reactivated.

##### **\* (Unit 4)**

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

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

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

**Units 1, 5, 6, 7: normal operation**  
(Units 2 to 4: outage due to regular inspection)

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

Hirono Thermal Power Station Units 2 and 4: shutdown due to earthquake  
Hitachinaka Thermal Power Station Unit 1: shutdown due to earthquake  
Kashima Thermal Power Station Units 2, 3, 5, 6: shutdown due to earthquake  
Higashi-Ohgishima Thermal Power Station Unit 1: shutdown due to earthquake

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

\* All the stations have been restored.  
(Facilities damaged by the earthquake are now properly under consideration)

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

All substation failed due to the earthquake have been restored.

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

All the blackouts are resolved.

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

Backup supply from Shinshinano Conversion Station: 600MW  
Backup supply from Sakuma Conversion Station: 300MW  
Backup supply from Higashi Shimizu Conversion Station: 100MW  
Backup supply from Hokkaido-Honshu Interconnection Facilities: 600MW

Considering the critical balance of our power supply capacity and expected power demand forward, in order to avoid unexpected blackout, TEPCO has been implementing rolling blackout (planned blackout alternates from one area to another) since Mar 14th. We will make our utmost to secure the stable power supply as early as possible.

For customers who will be subject to rolling blackout, please be prepared for the announced blackout periods. Also for customers who are not subject to blackouts, TEPCO appreciates your continuous cooperation in reducing electricity usage by avoiding using unnecessary lighting and electrical equipment.

**[Others]**

Please do NOT touch cut-off electric wires.  
In order to prevent fire, please make sure to switch off the electric appliances such as hair drier and to shut down the breaker of distribution board when you leave your house.  
For the customer who has in-house power generation, please secure fuel for generator.

☒ DocA10 Page 19/19



## Press Releases

### Press Release (Mar 23,2011) Plant Status of Fukushima Daiichi Nuclear Power Station (as of 9:00 PM Mar 23rd)

\*new items are underlined

All 6 units of Fukushima Daiichi Nuclear Power Station have been shut down.

#### Unit 1(Shut down)

- Reactor has been shut down. However, the explosive sound and white smoke were confirmed after the big quake occurred at 3:36 pm Mar 12th. It was assumed to be hydrogen explosion.
- At approximately 2:30 am on March 23rd, seawater was started to be injected to the nuclear reactor through the feed water system.
- We have been injecting sea water into the reactor pressure vessel.

#### Unit 2(Shut down)

- Reactor has been shut down and the level of reactor coolant had dropped and the reactor pressure had increased because the Reactor Core Isolation Cooling System stopped. Measures were taken to lower the pressure within the Reactor Containment Vessel and to inject sea water into the Reactor while carefully confirming safety. The level of reactor coolant and the pressure of the Reactor resumed.
- At approximately 6:00 am on March 15th, an abnormal noise began emanating from nearby Pressure Suppression Chamber and the pressure within this chamber decreased.
- At 6:20 pm on March 21st, white smoke was confirmed arising from the top of the reactor building. As of 7:11 am on March 22nd, smoke decreased to the level where we can hardly confirm
- We have been injecting sea water into the reactor pressure vessel.

#### Unit 3(Shut down)

- Reactor has been shut down. However, the explosive sound and white smoke were confirmed at 11:01am Mar 14th. It was assumed to be hydrogen explosion.
- At 8:30am on March 16th, fog like steam was confirmed arising from the reactor building.
- At approximately 6:15 am on March 17th the pressure of the Suppression Chamber has temporarily increased. We were preparing to implement a measurement to reduce the pressure of the reactor containment vessel (partial discharge of air containing radioactive material to outside) in order to fully secure safety. However, at present, it is not a situation to take a measure immediately to discharge air containing radioactive material to outside now. We will continue to monitor the status of the pressure of the reactor containment vessel.
- At approximately 4:00 pm, March 21st, light gray smoke was confirmed arising from the floor roof of the Unit 3 building. On March 22nd, the color of smoke changed to somewhat white and it is slowly dissipating.
- At approximately 10:45 pm on March 22nd, the light in the main control room was turned on.
- At around 4:20 pm on March 23rd, our staff confirmed light black smoke belching from the Unit 3 building.
- We have been injecting sea water into the reactor pressure vessel.

#### Unit 4 (outage due to regular inspection)

- Reactor has been shut down. However, at approximately 6 am on March 15th. We have confirmed the explosive sound and the sustained damage around the 5th floor rooftop area of the Nuclear Reactor Building.
- On March 15th and 16th, we respectively confirmed the outbreak of fire at the 4th floor of the northwestern part of the Nuclear Reactor Building. We immediately reported this matter to the fire department and the related authorities. TEPCO employees confirmed that each fire had already died down by itself.
- At this moment, we do not consider any reactor coolant leakage inside the reactor containment vessel happened.

#### Unit 5 (outage due to regular inspection)

- Reactor has been shut down and the sufficient level of reactor coolant to ensure safety is maintained.
- At 5 am, March 19th, we started the Residual Heat Removal System Pump (C) in order to cool the spent fuel pool.
- At this moment, we do not consider any reactor coolant leakage inside the reactor containment vessel happened.
- At 2:30 pm, March 20th, the reactor achieved reactor cold shutdown. At around 5:24 pm on March 23rd, when we switched the temporary Residual Heat Removal System Seawater Pump, it automatically stopped. We will repair the pump and maintain the reactor water level and the temperature in the reactor properly.

#### Unit 6 (outage due to regular inspection)

- Reactor has been shut down and the sufficient level of reactor coolant to

ensure safety is maintained.

- We are working on receiving external power supply to Units 5 and 6. We completed the repair work on the emergency diesel generator (A).
- At 10:14 pm, March 19th, we started the Residual Heat Removal System Pump (B) of Unit 6 in order to cool the spent fuel pool.
- At this moment, we do not consider any reactor coolant leakage inside the reactor containment vessel happened.
- At 7:27 pm, March 20th, the reactor achieved reactor cold shutdown.

#### **Today's work for cooling the spent fuel pools**

- At approximately 10:00 am on March 23rd, we started spraying water to Unit 4 using the concrete pumping vehicle and completed at around 1:00 pm. And at around 11:00 am, sea water injection to fuel spent pool of unit 3 was started by using Fuel Pool Cooling and Filtering(clean up) system (FPC) and finished at around 1:20 pm.
- We are considering further spraying at other units and others subject to the conditions of spent fuel pools.

#### **Casualty**

- 2 workers of cooperative firm were injured at the occurrence of the earthquake, and were transported to the hospital on March 11th.
- 4 workers were injured and transported to the hospital after explosive sound and white smoke were confirmed around the Unit 1 on March 11th.
- Presence of 2 TEPCO employees at the site is not confirmed on March 11th.
- 1 TEPCO employee who was not able to stand by his own holding left chest with his hand, was transported to the hospital by an ambulance on March 12th.
- 1 subcontract worker at the key earthquake-proof building was unconscious and transported to the hospital by an ambulance on March 12th.
- The radiation exposure of 1 TEPCO employee, who was working inside the reactor building, exceeded 100mSv and he was transported to the hospital on March 12th.
- 2 TEPCO employees felt bad during their operation in the central control rooms of Unit 1 and 2 while wearing full masks, and were transferred to Fukushima Daiichi Nuclear Power Station for consultation with a medical advisor on March 13th.
- 11 workers were injured and transported to Fukushima Daiichi Nuclear Power Station etc. after explosive sound and white smoke were confirmed around the Unit 3. One of the workers was transported to the FUKUSHIMA Medical University Hospital on March 14th.
- At approximately 10 pm on March 22nd, 1 worker who had been working on setting up a temporary power panel in the common pool was injured and transported to Fukushima Daiichi Nuclear Power Station where the industrial doctor is.
- At approximately 1 am on March 23rd, 1 worker who had been working on transporting a temporary power panel in the common pool was injured and transported to Fukushima Daiichi Nuclear Power Station where the industrial doctor is.

#### **Others**

-We measured radioactive materials (iodine etc.) inside of the nuclear power station area (outdoor) by monitoring car and confirmed that radioactive materials level is getting higher than ordinary level. As listed below, we have determined that specific incidents stipulated in article 15, clause 1 of Act on Special Measures Concerning Nuclear Emergency Preparedness (Abnormal increase in radiation dose measured at site boundary) have occurred.

- Determined at 4:17 pm Mar 12th (Around Monitoring Post 4 )
- Determined at 8:56 am Mar 13th (Around Monitoring Post 4 )
- Determined at 2:15 pm Mar 13th (Around Monitoring Post 4 )
- Determined at 3:50 am Mar 14th (Around Monitoring Post 6 )
- Determined at 4:15 am Mar 14th (Around Monitoring Post 2 )
- Determined at 9:27 am Mar 14th (Around Monitoring Post 3 )
- Determined at 9:37 pm Mar 14th (Around main entrance )
- Determined at 6:51 am Mar 15th (Around main entrance )
- Determined at 8:11 am Mar 15th (Around main entrance )
- Determined at 4:17 pm Mar 15th (Around main entrance )
- Determined at 11:05 pm Mar 15th (Around main entrance )
- Determined at 8:58 am Mar 19th (Around MP5)

From now on, if the measured figure fluctuates and goes above and below 500 micro Sv/h, we deem that as the continuous same event and will not regard that as a new specific incidents stipulated in article 15, clause 1 of the Act on Special Measures Concerning Nuclear Emergency Preparedness (Abnormal increase in radiation dose measured at site boundary) has occurred. In the interim, if we measure a manifestly abnormal figure and it is evident that the event is not the continuous same event, we will determine and notify.

- The national government has instructed evacuation for those local residents within 20km radius of the periphery and evacuation to inside for those residents from 20km to 30km radius of the periphery, because it's possible that radioactive materials are discharged.
- At approximately 10am on March 15th, we observed 400mSv/h at the inland side of the Unit 3 reactor building and 100mSv/h at the inland side of the Unit 4 reactor building.
- We checked the status of spent fuel in the common pool, and confirmed that the water level secured. We are planning to conduct a detailed inspection.
- We found no signs of abnormal situation for the casks by visual observation during the patrol activity. A detailed inspection is under preparation.
- At Units 5 and 6, in order to prevent hydrogen gas from accumulating within the buildings, we have made three holes on the roof of the reactor building for each unit.
- In total 12 fire engines are lent for the water spraying to the spent fuel pools and water injection to the nuclear reactors by various regional fire departments\* as well as Tokyo Fire Department.
- \*: Koriyama Fire Department, Iwaki Fire Brigade Headquarters, Fire Headquarters of Sukagawa District Wide Area Fire-fighting Association, Yonezawa City Fire Headquarters, Utsunomiya City Fire Headquarters, Fire Headquarters of Aizu-Wakamatsu wide area municipal association, Saitama City Fire Bureau, and Niigata City Fire Bureau.
- On March 21st and 22nd, we detected cobalt, iodine and cesium from the seawater around discharge canal of Units 1, 2, 3 and 4.

-We detected iodine, cesium and tellurium in the air collected at the site of Fukushima Daiichi Nuclear Power Station on March 20th, 21st and 22nd.  
-Until March 22nd, Units 1 through 6 were started to be energized from the external power source.  
-We will continue to take all measures to ensure the safety and to continue monitoring the surrounding environment around the Power Station.

[☛ back to page top](#)

Search

## Press Releases

### Press Release (Mar 23, 2011) Plant Status of Fukushima Daini Nuclear Power Station (as of 9:00 pm March 23rd)

[No New Developments since 3:00 pm, 23rd March]

#### Unit Status

- 1 · Reactor cold shutdown, stable water level, offsite power is available.
  - No cooling water is leaked to the reactor containment vessel.
  - Maintain average water temperature at 100°C in the pressure restraint.
- 2 · Reactor cold shutdown, stable water level, offsite power is available.
  - No cooling water is leaked to the reactor containment vessel.
  - Maintain average water temperature at 100°C in the pressure restraint.
- 3 · Reactor cold shutdown, stable water level, offsite power is available.
  - No cooling water is leaked to the reactor containment vessel.
  - Maintain average water temperature at 100°C in the pressure restraint.
- 4 · Reactor cold shutdown, stable water level, offsite power is available.
  - No cooling water is leaked to the reactor containment vessel.
  - Maintain average water temperature at 100°C in the pressure restraint.

Other N.A.

[Back to Page Top](#)

## Press Releases

### Press Release (Mar 23,2011)

#### The results of nuclide analyses of radioactive materials in the air at the site of Fukushima Daiichi Nuclear Power Station (2nd release)

On March 22nd 2011, as part of monitoring activity of the surrounding environment, we conducted nuclide analysis of radioactive materials contained in the air which were collected on March 20th and 21st 2011 at the site of Fukushima Daiichi Nuclear Power Station, which was damaged by Tohoku-Chihou-Taiheiyo-Oki Earthquake. As a result, radioactive materials were detected as shown in the attachment. Therefore, we summarized the results and reported them to Nuclear and Industry Safety Agency as well as to the government of Fukushima Prefecture today. (previously announced)

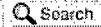
On March 22nd 2011, we conducted nuclide analysis of radioactive materials contained in the air which were collected on March 22nd 2011 at the site of Fukushima Daiichi Nuclear Power Station. As a result, radioactive materials were detected as shown in the attachment. Therefore, we summarized the results and reported them to Nuclear and Industry Safety Agency as well as to the government of Fukushima Prefecture today.

We will continue the sampling survey same as this one.

attachment1:The result of the nuclide analysis of radioactive materials in the air at the site of Fukushima Daiichi Nuclear Power Station (PDF 12.4KB)

attachment2:ReferenceThe result of the nuclide analysis of radioactive materials in the air at the site of Fukushima Daiichi Nuclear Power Station(PDF 13.2KB)

 [Back to page top](#)



## Press Releases

Press Release (Mar 23,2011)

Detection of radioactive materials from the seawater around the discharge canal of Fukushima Daiichi Nuclear Power Station (3rd release)

On March 21st 2011, radioactive materials were detected from the seawater around the discharge canal (south) of Fukushima Daiichi Nuclear Power Station which was damaged by the 2011 Tohoku-Taiheiyou-Oki Ocean Earthquake.

This is the result of the sampling survey of radioactive materials in the seawater which was implemented as a part of monitoring of surrounding environment.

TEPCO had informed the result to Nuclear and Industrial Safety Agency (NISA) and Fukushima prefecture. (previously announced)

On March 23rd 2011, we had conducted re-sampling survey in the wide range of area to examine the effect of radioactive materials in the seawater. TEPCO had informed the result to Nuclear and Industrial Safety Agency (NISA) and Fukushima prefecture as radioactive material were detected. Details are as follows;

We will continue to conduct same kind of sampling survey.

attachment1:The result of seawater nuclide analysis (Northern discharge canal of 2F ) (PDF 7.64KB)

attachment2:The result of seawater nuclide analysis(2F Iwasawa Coast) (PDF 7.74KB)

attachment3:Seawater concentration of radioactive materials(PDF 15.2KB)

[back to page top](#)

Search

## Press Releases

### Press Release (Mar 23,2011) Plant Status of Fukushima Daiichi Nuclear Power Station (as of 9:00 am March 23rd)

No New Developments since 9:00 pm, 22nd March

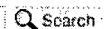
#### Unit Status

- 1 · Reactor cold shutdown, stable water level, offsite power is available.  
· No cooling water is leaked to the reactor containment vessel.  
· Maintain average water temperature at 100°C in the pressure restraint.
- 2 · Reactor cold shutdown, stable water level, offsite power is available.  
· No cooling water is leaked to the reactor containment vessel.  
· Maintain average water temperature at 100°C in the pressure restraint.
- 3 · Reactor cold shutdown, stable water level, offsite power is available.  
· No cooling water is leaked to the reactor containment vessel.  
· Maintain average water temperature at 100°C in the pressure restraint.
- 4 · Reactor cold shutdown, stable water level, offsite power is available.  
· No cooling water is leaked to the reactor containment vessel.  
· Maintain average water temperature at 100°C in the pressure restraint.

Other N.A.

The next information in regard to the plant is planned to be released at noon, 23rd March.

[Back to page top](#)



## Press Releases

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### Press Release (Mar 23,2011) Plant Status of Fukushima Daini Nuclear Power Station (as of noon March 23rd)

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No New Developments since 9:00 am, 23rd March

#### Unit Status

- 1
  - Reactor cold shutdown, stable water level, offsite power is available.
  - No cooling water is leaked to the reactor containment vessel.
  - Maintain average water temperature at 100°C in the pressure restraint.
- 2
  - Reactor cold shutdown, stable water level, offsite power is available.
  - No cooling water is leaked to the reactor containment vessel.
  - Maintain average water temperature at 100°C in the pressure restraint.
- 3
  - Reactor cold shutdown, stable water level, offsite power is available.
  - No cooling water is leaked to the reactor containment vessel.
  - Maintain average water temperature at 100°C in the pressure restraint.
- 4
  - Reactor cold shutdown, stable water level, offsite power is available.
  - No cooling water is leaked to the reactor containment vessel.
  - Maintain average water temperature at 100°C in the pressure restraint.

Other N.A.

[Back to page top](#)



## Press Releases

### Press Release (Mar 23,2011) Implementation Plan of Rolling Blackouts on and after March 24, 2011

Due to the power supply-demand balance, TEPCO has been implementing rolling blackout since Monday, March 14. We sincerely regret causing anxiety and inconvenience to our customers and the society. We appreciate your cooperation in conserving electricity consumption.

For customers who will be subject to rolling blackouts, please be prepared for the announced blackout periods. Also, for the customers who are not subject to blackouts, we would appreciate your continuous cooperation in reducing electricity usage by turning off unnecessary lightings and electrical appliances.

We would like to inform the implementation plan of rolling blackouts on and after March 24, 2011 as follows.

#### o Implementation plan of rolling blackout on March 24 (Wed.)

Considering today's electricity supply-demand and tomorrow's weather, regional group and time periods for the planned blackout are as follows.

Rolling blackout will not be implemented.

Group 2 6:20-10:00  
Group 3 9:20-13:00  
Group 4 12:20-16:00  
Group 2 13:50-17:30  
Group 3 16:50-20:30

The necessity of the rolling blackouts will be judged depending on the supply-demand balance, and will be informed by 2 hours before the start of blackouts.

Group 5 15:20-19:00  
Group 1 18:20-22:00

- The actual blackout period for each group is planned to be maximum of 3 hours during the relevant scheduled time period.
- Starting and ending time of blackout periods may slightly differ.
- Depending on the supply-demand balance of the day, planned blackouts may not be carried out. In case the electricity supply-demand balance becomes tighter than expected, we will reconsider the rolling blackout plan and inform you accordingly before we implement the revised plan.
- A blackout may occur in the adjacent areas where the planned blackouts are carried out.

#### o Implementation plan of rolling blackouts from Friday, March 25 to Wednesday, March 30

Please refer to the "exhibit" for detailed plan.

- The actual blackout period for each group is planned to be maximum of about 3 hours during the relevant scheduled time period.
- Starting and ending time of blackout periods will slightly differ day by day.
- Depending on the supply-demand balance hereafter, planned blackouts may not be carried out. Moreover, in case the electricity supply-demand balance becomes tighter than expected, we will reconsider the rolling blackout plan and inform you accordingly before we implement the revised plan.
- A blackout may occur in the adjacent areas where the planned blackouts are carried out.

#### [Others]

- In order to prevent fires, please make sure to switch off electric appliances such as hair driers when you leaving home.
- Please carefully pay attention to the traffic at the crossings in case the traffic lights are suddenly turned off.
- As for the building and apartment, please be aware that equipment and facility such as elevator, automatic door, automatic lock, and multilevel parking lot will not function. In particular, please avoid using elevators during the blackout.

#### <Reference>

o Prediction of demand and supply on March 23  
Estimated Demand 38,000 MW (18:00-19:00)  
Supply Capacity 37,500 MW

o Prediction of demand and supply on March 24  
Estimated Demand 37,000 MW (18:00-19:00)  
Supply Capacity 38,500 MW

#### \*Prediction of demand

According to the weather forecast, the weather will become worse from tomorrow afternoon and temperature will be lower than that of average year. However, estimated temperature at peak demand time tomorrow will be higher than that of today, so we assume estimated peak demand on

March 24 will be 37,000MW, which is lower than that of today.  
\*Estimated demand and supply capacity may change depending on the situation of the day.

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attachment:Weekly Rolling Blackout Plan(PDF 19.9KB)

[Back to page top](#)

# OPA

## TALKING POINTS

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### JAPAN NUCLEAR SITUATION

As of 3/23/2011 2:30 PM

Updates in Red

#### CONTENTS

1. **The Safety of U.S. Nuclear Power Plants**
2. **Monitoring Radiation in the United States**
3. **The Situation in Japan**

## **PART 1: THE SAFETY OF U.S. NUCLEAR POWER PLANTS**

- The NRC is always looking to learn information that can be applied to U.S. reactors and we will analyze the information that comes from this incident. President Obama has asked the agency to conduct a comprehensive review of the safety of U.S. nuclear plants; the agency will do so.
- The NRC issued an Information Notice on March 18 to all of its operating nuclear power plants describing the effects of the March 11 earthquake and tsunami on Japanese nuclear power plants. The purpose of the Information Notice is to inform the plants of the most recent information available to the NRC. The NRC expects U.S. nuclear power plants will review the entire notice to determine how it applies to their facilities and consider actions, as appropriate.
- U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster.
- The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area. The NRC then adds a margin for error to account for the limitations on historical data. In other words, U.S. nuclear power plants are designed to be safe based on historical data to predict the area's maximum credible earthquake.
- In response to MSNBC.com report ranking US NPPs according to vulnerability to earthquakes: The NRC does not rank nuclear power plants according to their vulnerability to earthquakes. This "ranking" was developed by an MSNBC reporter using partial information and an even more partial understanding of how we evaluate plants for seismic risk. Each plant is evaluated individually according to the geology

of its site, not by a "one-size-fits-all" model - therefore such rankings or comparisons are highly misleading.

- In the 1980s and 1990s, the NRC required several changes to the BWR Mark I containments at U.S. plants to ensure they could continue to deal with severe events. The first issue involved the design's large circular tube, or "torus," which holds enough water to safely condense the large volumes of steam that could be released during a severe event. The NRC became aware in the mid-late 1970s that designers might have underestimated the forces the torus would have to withstand during an event. The NRC laid out an appropriate generic approach to resolving the issue in August 1982, and individual reactors carried out their plant-specific torus reinforcement efforts.
- The second issue involved the potential for containment failure following an extended loss of decay heat removal capability. Under the Mark I Containment Performance Improvement program that ran from the late 1980s into the early 1990s, all Mark I BWRs operating at that time installed hardened vent systems to provide an additional decay heat removal capability to protect against containment overpressure failure. The containment vent system could also be used to control hydrogen concentrations in containment. Two units, Browns Ferry 1 and 3, were in extended shutdown at that time, and hardened vents were installed before those reactors restarted. In addition most plants provided an alternate water injection capability that is independent of normal and emergency power supplies and enhanced the reliability of the automatic depressurization system to reduce the likelihood of a challenge to containment. Furthermore, in 2003, the Commission issued the "Hydrogen Rule" (10CFR50.44) that required all BWR Mark I plants to operate in an inert atmosphere to preclude the possibility of a hydrogen explosions in containment.
- The NRC recommendation related to a 50-mile evacuation zone for Americans near the affected nuclear power plants in Japan is consistent with the same kind of approach that

would be used in the United States should a comparable, although extremely unlikely, event take place here.

- In November 1976, a federal task force was formed to look at salient emergency planning issues for U.S. nuclear power plants. Out of that comprehensive evaluation came a recommendation that a 10-mile-radius EPZ would assure that “prompt and effective actions can be taken to protect the public in the event of an accident” at a plant. This was based on research showing the most significant impacts of an accident would be expected in the immediate vicinity of a plant and therefore any initial protective actions, such as evacuations or sheltering in place, should be focused there. That does not mean the protective actions could not expand beyond the 10-mile radius. Rather, emergency planners have always known such actions could be necessary if the situation warranted it. (See NUREG 0654/FEMA-REP-1.)
- Following the events of Sept. 11, 2001, NRC required all nuclear plant licensees to take additional steps to protect public health and safety in the event of a large fire or explosion. In accordance with NRC regulations, all nuclear power plants are required to maintain or restore cooling for the reactor core, containment building, and spent fuel pool under the circumstances associated with a large fire or explosion. These requirements include using existing or readily available equipment and personnel, having strategies for firefighting, operations to minimize fuel damage, and actions to minimize radiological release to the environment. In general, mitigative strategies are plans, procedures, and pre-staged equipment whose intent is to minimize the effects of adverse events. If needed, these mitigative strategies could also be used during natural phenomena such as earthquakes, tornadoes, floods, and tsunamis.

## **PART 2: MONITORING RADIATION IN THE UNITED STATES**

- The NRC is working closely with our federal partners to monitor radiation releases from the Japanese nuclear power plants. Given the results of the monitoring and distance between Japan and Hawaii, Alaska, U.S. Pacific Territories and the U.S. West Coast, the NRC expects the U.S. to avoid any harmful levels of radioactivity. Reports of radiation being detected in the United States are all far below levels that would present a health risk. Additional questions regarding monitoring of the radioactive release should be referred to DOE at 202 586 4940.
- The Department of Energy has been designated the lead agency for communicating information to the states regarding monitoring of radiation heading toward or over the United States. The DOE's Lawrence Livermore National Laboratory (National Atmospheric Release Assessment Center) is monitoring weather patterns over the Pacific Ocean. The Environmental Protection Agency maintains air monitoring stations throughout the country and has reinforced its monitoring effort. DOE will provide aerial monitoring. Questions about this effort should be directed to DOE at 202 586 4940.
- The Environmental Protection Agency has increased its radiation monitoring in the western U.S. Data from the EPA's RadNet is available on the EPA's website.
- [Only if specifically asked] The NRC is aware that Diablo Canyon nuclear power plant in California, among others, have detected a very low level of radiation. The site believes that the source of the radiation is likely the Fukushima Daiichi nuclear power plant in Japan. The amounts detected are barely detectable on the instruments and pose no danger to public health and safety. The NRC continues to believe, based on all available information, that no harmful levels of radiation will reach U.S. territory. This information has been shared with the U.S. Department of Energy and the U.S. Environmental Protection Agency. Additional questions regarding monitoring of the radioactive release should be referred to DOE at 202 586 4940.

- In accordance with established protocols, U.S. Customs and Border Protection (CBP) employs several types of radiation detection equipment in its operations at both air and sea ports, and uses this equipment, along with specific operational protocols, to resolve any security or safety risks that are identified with inbound travelers and cargo. Out of an abundance of caution, CBP has issued field guidance reiterating its operational protocols and directing field personnel to specifically monitor maritime and air traffic from Japan. CBP will continue to evaluate the potential risks posed by radiation contamination on inbound travelers and cargo and will adjust its detection and response protocols, in coordination with its interagency partners, as developments warrant.

### **PART 3: THE SITUATION IN JAPAN**

- As of Sunday, March 20, 2011, the NRC continues to monitor the nuclear crisis in Japan stemming from the March 11 earthquake and tsunami. NRC's top priorities are the continued assessment of radiological conditions, dose predictions, and protective action recommendations. This effort focuses primarily on conditions in Japan around the vicinity of the Fukushima Daiichi nuclear power plant. The NRC is also working with DOE to model the flow of radiation across the Pacific Ocean toward the United States.
- A team of 10 NRC experts continues to assist Japanese efforts in Tokyo as part of a USAID-sponsored assistance effort. [If asked: One team member fell ill and returned to the US. Numbers in the team and names change; please check if asked.]
- The Commission was briefed by the NRC staff on the situation in Japan at a public meeting on Monday, March 21, 2011. A transcript for the public commission meeting held yesterday has been posted. The meeting included an overview of NRC actions related to the Japanese emergency and the possible short- and long-term activities for the NRC. The transcript can be found here: <http://www.nrc.gov/reading-rm/doc-collections/commission/recent/2011/>. And the slides from the meeting are located at: <http://www.nrc.gov/reading-rm/doc-collections/commission/slides/2011/20110321/staff-slides-03212011-meeting-rev1.pdf>.
- Chairman Jaczko gave opening remarks at the meeting. He said, in part, "We have a responsibility to the American people to undertake a systematic and methodical review of the safety of our own domestic nuclear facilities, in light of the natural disaster and the resulting nuclear emergency in Japan. Beginning to examine all available information is an essential part of our effort to analyze the event and understand its impact on Japan and implications for the United States. Our focus is always on keeping plants and radioactive materials in this country safe and secure."

A copy of his full opening remarks can be found here: <http://www.nrc.gov/reading-rm/doc-collections/news/2011/11-054.pdf>

- Based on calculations performed by NRC experts, we continue to believe that it is appropriate for U.S. residents within 50 miles of the Fukushima reactors to evacuate. Our recommendation is based on NRC guidelines for public safety that would be used in the United States under similar circumstances.
- The 10-mile EPZ reflects the area where projected doses from design basis accidents at nuclear power plants would not exceed the EPA's protective action guidelines, and we are confident that it would be adequate even for severe accidents. However, the 10-mile zone was always considered a base for emergency response that could be expanded if the situation warranted. The situation in Japan, with four reactors experiencing exceptional difficulties simultaneously, creates the need to expand the EPZ beyond the normal 10-mile radius, based on our limited data and conservative assumptions.
- The NRC is closely monitoring information about the spent fuel pools as well as radiation levels at the Japanese nuclear power plants. Given the totality of the situation, the NRC's recommendation for U.S. residents within 50 miles of the Fukushima reactors to evacuate remains unchanged. That recommendation was based on actual radiation levels in the nuclear complex.
- The Japanese government has formally asked for U.S. assistance in responding to nuclear power plant cooling issues triggered by an earthquake and tsunami on March 11.
- The NRC is coordinating its actions with other federal agencies as part of the U.S. government response. The NRC's headquarters Operations Center was activated at the beginning of the event and has been monitoring the situation on a 24-hour basis ever since.

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**From:** PMT03 Hoc  
**Sent:** Wednesday, March 23, 2011 10:17 AM  
**To:** Henderson, Pamela  
**Subject:** RE: Summary of Requests in Information Notice IN 86.doc

In progress

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**From:** Henderson, Pamela  
**Sent:** Wednesday, March 23, 2011 10:15 AM  
**To:** PMT03 Hoc  
**Subject:** RE: Summary of Requests in Information Notice IN 86.doc

Does the IN also include subsequent events or just Chernobyl? Even if it does include subsequent events, might be good to refresh licensee's memories on the guidance since the IN was issued in 86.

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**From:** PMT03 Hoc  
**Sent:** Wednesday, March 23, 2011 10:12 AM  
**To:** Henderson, Pamela  
**Subject:** FW: Summary of Requests in Information Notice IN 86.doc

See attached for additional guidance.

John

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**From:** PMT09 Hoc  
**Sent:** Wednesday, March 23, 2011 9:57 AM  
**To:** PMT03 Hoc  
**Subject:** Summary of Requests in Information Notice IN 86.doc

Can you please put this in the PMT file folder.

Duane Schmidt.

**Summary of Requests in Information Notice IN 86-32  
Regarding Radioactivity Measurements Attributed to Chernobyl Releases**

NRC licensees were asked to voluntarily report to the NRC any anomalous environmental radiation or radioactivity measurement that was reasonably attributed to releases from the Chernobyl accident. Licensees should provide results by telephone to the NRC Ops Center within 24 hours of determination.

Reporting format to provide for:

- Samples date and location
- Medium or pathway sampled
- Type of analysis
- Statistical data (range, mean, number of samples)