

To: Jim Mehl, ERU Supervisor  
From: Zack Clayton, Rad Coordinator  
Subject: February Monthly Report  
Date: March 2, 2011

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## Beans

Training: 0  
Drills: 0  
Meetings: 1  
Technical Assistance: 2  
Public Assistance: 0

Web Page Views: There were 35 page views in February.

## Coming Attractions

3/7 Working Group  
3/13-14 REAC/TS training at ODH  
4/4 BVPS Systems Training at OEMA  
TBA Working Group  
4/9 URSB meeting at Perry EOF  
5/1 BVPS Dose assessment Table Top at OEMA  
5/3 FMT Training at OEMA  
5/22 BVPS Dry Run exercise ~3-11pm  
6/19 BVPS Evaluated Exercise ~3-11pm

## Facility updates

### **Davis-Besse Nuclear Power Station**

Davis-Besse operated at full power for February.

At 0542 on February 16, the Safety Parameter Display System (SPDS) in the control room went down. It was still out of service 8 hours later which initiated a report. Other systems which report similar information were still in service which would allow dose assessment to function in case of an accident. At 2100 on February 16 the SPDS was restored. The outage was caused by a hard drive failure. See event No 47670.

### **Perry Nuclear Power Plant**

Perry operated at full power for February.

Hitachi Corporation reported a flaw in control rod drive mechanisms that it has supplied to the plant. The plant has been notified by Hitachi. See Event No 47630.

## **Beaver Valley Power Station**

### **Beaver Valley Unit I**

Unit I operated at full power for February.

### **Beaver Valley Unit II**

Unit II operated at full power for February.

### **Fermi II**

Fermi II started February in a slight power reduction for rod pattern adjustment. They returned to full power until the weekend of the 12<sup>th</sup> when they reduced power to 77 percent. It is unclear why this reduction occurred.

Hitachi Corporation reported a flaw in control rod drive mechanisms that it has supplied to the plant. The plant has been notified by Hitachi. See Event No 47630.

## **Portsmouth Enrichment Plant**

There was an informal report of vandalism at the x-605 well field involving a transformer. This leaked oil that was subsequently dispersed by flooding in the field. Mention of this generated media interest in February and the environmental staff at the plant has been reacquainted with proper reporting procedures for incidents under OAC 3750.06.

### **Activity**

2//1 Working Group at OEMA. Agency updates and briefing on plant events by OEMA. Discussed the may 9-10 training at NASA. OGH will provide the sample screening point to test the revised procedures. OEMA wants to test the FTC set up and support structure based on lessons learned from the fall 2011 training. ODA and DNR are both interested in participating.

This could turn into the all hands field exercise we have been asking for the past 6 years.

## Office Issues

IZRRAG, and Field Team SOP review and revision continues.

## News, NRC Reports, and Statistics

### Operating Power Levels

February

Date	BV1	BV2	DB	Perry	Fermi2	
1	100	100	100	100	96	Fermi – Rod pattern adjustment
6	100	100	100	100	100	
12	100	100	100	100	77	Fermi - unknown
13	100	100	100	100	100	
27	100	100	100	100	100	
29	100	100	100	100	100	

### Information Notices

Unless otherwise noted, these are ADAMS Accession documents, are publicly available, and will be accessible via the public web site Electronic Reading Room in the Agency Document Access and Management System (ADAMS),

<http://www.nrc.gov/reading-rm/adams.html>

or to access generic communications files on the NRC Homepage:

<http://www.nrc.gov/reading-rm/doc-collections/gen-comm/reg-issues/2012/>.

To access these documents use the ADAMS Accession number listed with the title.

This is in the format of : ML #####

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FSME-12-012 - February 2012 Meetings and Opportunity to Comment on Draft State-Of-The-Art Reactor Consequences Analysis Research Study Report. The subject line letter, FSME-12-012, can be found at the FSME website: <http://nrc-stp.ornl.gov/>.

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SECY-12-0025, "Proposed Orders and Requests for Information in Response to Lessons Learned from Japan's March 11, 2011, Great Tohoku Earthquake and Tsunami,"

ADAMS Accession No ML12039A103

Also at: <http://pbadupws.nrc.gov/docs/ML1203/ML12039A111.pdf>

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Davis-Besse Nuclear Power Station Integrated Inspection Report 05000346/2011005 –  
ADAMS Accession No ML12032A119.

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DAVIS-BESSE 2011 301 LICENSE EXAM REPORT LETTER  
ADAMS ACCESSION No ML12032A095

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DAVIS-BEESE: Schedule Revisions for the Environmental Review of the Davis-Besse  
Nuclear Power Station, Unit No. 1, License Renewal Application (Tac No. ME4613)  
[corrected]

ADAMS Accession No. ML12032A131

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Beaver Valley Power Station - Beaver Valley Power Station - NRC Integrated Inspection  
Report 05000334/2011005 and 05000412/2011005

ADAMS Accession No. ML12032A286

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SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON  
JUNE 28, 2011, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND  
FIRSTENERGY NUCLEAR OPERATING COMPANY, CONCERNING REQUESTS  
FOR ADDITIONAL INFORMATION PERTAINING TO THE DAVIS-BESSE NUCLEAR  
POWER STATION LICENSE RENEWAL APPLICATION (TAC. NO. ME4640)

ADAMS Accession No. ML12018A022

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Fermi IR 2012-402 Cover Ltr Only  
ADAMS Accession No. ML12037A047

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Perry Nuclear Power Plant - NRC Integrated Inspection Report  
05000440/2011005(DRP) and 07200069/2010001(DNMS) –

ADAMS Accession No. ML12037A044

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SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON  
JUNE 30, 2011, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND  
FIRSTENERGY NUCLEAR OPERATING COMPANY, CONCERNING REQUESTS  
FOR ADDITIONAL INFORMATION PERTAINING TO THE DAVIS-BESSE NUCLEAR  
POWER STATION LICENSE RENEWAL APPLICATION (TAC.NO. ME4640)

ADAMS Accession No. ML12018A046

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Beaver Valley Power Station, Unit Nos. 1 and 2 – Relief Request VRR4 Regarding  
Pressurizer Safety Valve Test Frequency

ADAMS Accession No.: ML120330329

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Beaver Valley Power Station, Unit Nos. 1 and 2 – Relief Request VRR3 Regarding  
Solenoid Operated Valve Remote Position Verification Frequency (TAC Nos. ME5749  
and ME5750)

ADAMS Accession No.: ML120270298

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Information Notice 2012-01, Seismic Considerations – Principally Issues Involving  
Tanks, dated January 26, 2012,  
ADAMS Accession No. ML11292A175

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SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON JUNE  
16,2011, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND  
FIRSTENERGY NUCLEAR OPERATING COMPANY, CONCERNING REQUESTS  
FOR ADDITIONAL INFORMATION PERTAINING TO THE DAVIS-BESSE NUCLEAR  
POWER STATION LICENSE RENEWAL APPLICATION (TAC. NO. ME4640)

ADAMS Accession No. ML12018A146

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FERMI TI 2515 177 REQUEST FOR INFORMATION LETTER

ADAMS Accession No. ML12045A533

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FERMI TI 2515 177 REQUEST FOR INFORMATION LETTER

ADAMS Accession No. ML12045A533

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BEAVER VALLEY POWER STATION, UNIT NOS. 1 AND 2 - INFORMATION  
REQUEST PURSUANT TO 50.54(f) RELATED TO the estimated EFFECT on peak  
cladding temperature RESULTING FROM thermal cONDUCTIVITY degradation in the  
Westinghouse furnished realistic emergency core cooling system evaluation (TAC No.  
M99899)

ADAMS Accession No. ML120400672.

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FERMI NOTIFICATION OF INSPECTION AND REQUEST FOR INFORMATION  
LETTER

ADAMS Accession No. ML12048A525

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Fermi 2 - Evaluation of Applicable 10-Year Interval Inservice Inspection Relief Request -  
Use of Boiling Water Reactor Vessel and Internals Project (BWRVIP) Guidelines in Lieu  
of Specific ASME Code Requirements

ADAMS Accession Number: ML120370286

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Perry Nuclear Power Plant, Unit No. 1, Re: Safety evaluation by the office of nuclear  
reactor regulation related to request VR-1, Revision 1, for the third 10-year interval  
inservice testing program –

ADAMS Accession no. ML120370477

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SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON JANUARY  
24,2012, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND  
FIRSTENERGY NUCLEAR OPERATING COMPANY, CONCERNING REQUESTS  
FOR ADDITIONAL INFORMATION PERTAINING TO THE DAVIS-BESSE NUCLEAR  
POWER STATION, LICENSE RENEWAL APPLICATION (TAC. NO. ME4640)

ADAMS Accession No. ML12045A016

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Subject: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON OCTOBER 31, 2011, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND FIRSTENERGY NUCLEAR OPERATING COMPANY, CONCERNING REQUESTS FOR ADDITIONAL INFORMATION PERTAINING TO THE DAVIS-BESSE NUCLEAR POWER STATION, LICENSE RENEWAL APPLICATION (TAC. NO. ME4640)  
ADAMS Accession No.. ML12024A276

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SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON SEPTEMBER 7, 2011, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND FIRSTENERGY NUCLEAR OPERATING COMPANY, CONCERNING REQUESTS FOR ADDITIONAL INFORMATION PERTAINING TO THE DAVIS-BESSE NUCLEAR POWER STATION, LICENSE RENEWAL APPLICATION (TAC. NO. ME4640)

ADAMS Accession No.. ML12025A047

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SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON OCTOBER 5, 2011, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND FIRSTENERGY NUCLEAR OPERATING COMPANY, CONCERNING REQUESTS FOR ADDITIONAL INFORMATION PERTAINING TO THE DAVIS-BESSE NUCLEAR POWER STATION, LICENSE RENEWAL APPLICATION (TAC. NO. ME4640)

ADAMS Accession No.. ML12038A197

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SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON JULY 15, 2011, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND FIRSTENERGY NUCLEAR OPERATING COMPANY, CONCERNING REQUESTS FOR ADDITIONAL INFORMATION PERTAINING TO THE DAVIS-BESSE NUCLEAR POWER STATION, LICENSE RENEWAL APPLICATION (TAC. NO. ME4640)

ADAMS Accession No. ML12052A171

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SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON AUGUST 2, 2011, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND FIRSTENERGY NUCLEAR OPERATING COMPANY, CONCERNING REQUESTS FOR ADDITIONAL INFORMATION PERTAINING TO THE DAVIS-BESSE NUCLEAR POWER STATION, LICENSE RENEWAL APPLICATION (TAC. NO. ME4640)

ADAMS Accession No.. ML12033A060

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Perry Emergency Preparedness Exercise October 2012

ADAMS Accession No. ML12059A474

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Fermi 2 - Issuance of Amendment re: TSTF-50, Revision 1, "Relocate Stored Fuel Oil and Lube Oil Volume Values to Licensee Control"

ADAMS Accession Number: ML113500433

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SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON AUGUST 29, 2011, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND FIRSTENERGY NUCLEAR OPERATING COMPANY, CONCERNING REQUESTS

FOR ADDITIONAL INFORMATION PERTAINING TO THE DAVIS-BESSE NUCLEAR  
POWER STATION, LICENSE RENEWAL APPLICATION (TAC. NO. ME4640)  
ADAMS Accession No. ML12052A285

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SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON  
SEPTEMBER 16, 2011, BETWEEN THE U.S. NUCLEAR REGULATORY  
COMMISSION AND FIRSTENERGY NUCLEAR OPERATING COMPANY,  
CONCERNING REQUESTS FOR ADDITIONAL INFORMATION PERTAINING TO THE  
DAVIS-BESSE NUCLEAR POWER STATION, LICENSE RENEWAL APPLICATION  
(TAC. NO. ME4640)  
ADAMS Accession No.. ML12039A013

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## News

### **NRC says severe accidents pose little risk to public health**

Hannah Northey, E&E reporter

Published: Wednesday, February 1, 2012

Severe nuclear power plant accidents pose a "very small" risk to the American public's health because plant operators should have enough time to prevent damage and stop radioactive material from being released, federal regulators said today.

The Nuclear Regulatory Commission issued a draft report today that analyzed two plants in Pennsylvania and Virginia and said preliminary findings show U.S. reactor operators can prevent accidents.

If an accident does occur, NRC said, there is virtually no risk of immediate deaths and the public will see only a "very, very small increase" in the risk of long-term cancer deaths.

"The calculated cancer fatality risks from the selected, important scenarios analyzed in [the study] are ... millions of times lower than the general U.S. cancer fatality risk," the commission said.

The agency analyzed possible accidents at Dominion's Surry Power Station near Surry, Va., and Exelon Corp.'s Peach Bottom Atomic Power Station near Delta, Pa. Those plants typify the bulk of the United States' nuclear fleet -- namely, boiling water reactor and pressurized water reactor designs, NRC said.

The commission said it reached its findings by combining up-to-date information about the plants' layout and operations with local population data and emergency preparedness plans.

The [study](#), called the "State-of-the-Art Reactor Consequence Analyses" (SOARCA), found there is "essentially zero risk" that a severe accident would cause early deaths from radiation exposure.

In the most severe accidents, NRC staff found, core damage would begin within one to three hours and the reactor vessel would begin to fail in about eight hours. Notably, radioactive material would be released at Peach Bottom within eight hours and within 25 hours at the Surry plant if operators there could not restore cooling.

Overall, NRC said radioactive releases were found to be "delayed, smaller, and more dispersed relative" to earlier NRC studies.

The agency's analysis arrives almost one year after Japan's Fukushima Daiichi nuclear reactor complex was slammed by a magnitude-9 earthquake and tsunami, which caused three of the reactors to melt down and release radioactive material.

NRC said it was just wrapping up its report last year when the accident occurred, and that Fukushima had many similarities to scenarios that could unfold at the Peach Bottom plant.

Although the Japanese crisis prompted NRC to re-evaluate its safety regulations, commission staff said today that no plants in the United States were found to be dangerous and safety upgrades currently under way are simply "enhancements." NRC staff members said they plan to issue a final report to the full five-member commission this summer, and the panel could then decide to ask for further studies.

[Click here](#) to read the NRC report.

Source: <http://www.eenews.net/eenewspm/2012/02/01/4>

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## **11 U.S. reactors may have used flawed accident models -- NRC**

Hannah Northey, E&E reporter

Published: Tuesday, February 21, 2012

Eleven U.S. nuclear power plants may have used computerized accident models that underestimated how much heat older nuclear fuel retains during severe accidents, according to federal regulators.

The Nuclear Regulatory Commission on Friday asked plant operators in six states to evaluate the heat-release phenomenon known as thermal conductivity degradation that affects older fuel.

Although there is no threat to public safety, NRC is concerned that older fuel rods at the plants could exceed the federal safety threshold of 2,200 degrees Fahrenheit during an accident that wipes out power to the sites.

Such high temperatures could damage the fuel rods' outer layer and eventually the reactor, NRC said.

"There are margins of safety built into everything, but the 2,200 [degree] limit is the part where we start to get uncomfortable," said NRC spokesman David McIntyre. "Anything over that ... would make it more difficult to cool the fuel."

The review could result in some plants being "dialed back" until the reactors meet federal requirements, McIntyre said.

Of particular concern are models that Westinghouse Electric Co. used at 34 of its pressurized water reactors to gauge the performance of nuclear fuel during disasters that wipe out electricity.

The commission said the models may not account for thermal conductivity degradation, and 11 plants reported high temperatures that raised concerns.

Those plants are **Beaver Valley 1 and 2** in Pennsylvania, Braidwood 2 and Byron 2 in Illinois, Catawba 1 and 2 in South Carolina, the Donald C. Cook Units 1 and 2 in Michigan, Kewaunee in Wisconsin, and McGuire Units 1 and 2 in North Carolina. Operators of the units must respond to NRC's request for information by March 19. "We need information from a few nuclear power plant licensees to maintain assurance that they can continue to operate safely with sufficient margin," said Eric Leeds, director of the NRC's Office of Nuclear Reactor Regulation, in a statement. NRC initially alerted the industry to the issue in 2009 but did not require immediate action because earlier test data were inconclusive about the problem's significance. Westinghouse notified the agency in December 2011 that analysis at one plant indicated the phenomenon could cause temperatures to increase by more than 100 degrees during a severe accident at the company's pressurized water reactors. NRC notified 23 additional plants that used the Westinghouse accident models of the problem, and those plants are also expected to analyze the issue, McIntyre said. Scott Shaw, a spokesman for Westinghouse, said the company is working with clients at specific sites to analyze the fuel and generate information NRC needs. Shaw said the issue won't shut down any plants and does not affect public health and safety.

Source: <http://www.eenews.net/Greenwire/2012/02/21/10>

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### **NRC proposes first Fukushima-related safety orders**

Hannah Northey, E&E reporter

Published: Thursday, February 23, 2012

The Nuclear Regulatory Commission proposed three orders yesterday aimed at boosting the safety at U.S. reactors in light of last year's nuclear disaster in Japan. The first proposal would require nuclear plant operators to develop plans for protecting reactors from earthquakes, floods, tornadoes and other natural disasters considered to be "beyond design basis."

The second would require reactor operators to account for accidents at multiple units and install instruments to monitor water and temperature levels in pools holding spent nuclear fuel.

And the third pertains to nuclear plants with designs similar to that of Japan's Fukushima Daiichi nuclear plant, which was crippled last March by an earthquake and tsunami. Operators of boiling water reactors, the proposal says, would be required to ensure that vents that ease pressure and release steam from reactors are reliable.

"Each of the [orders](#) is focused on enhancing defense in depth at nuclear power plants through increased capabilities to minimize the potential for core damage following a beyond design basis external event," NRC staff wrote.

The proposals will be debated by the agency's five commissioners, and the orders are scheduled for implementation by 2016.

The Nuclear Energy Institute announced this week that the nuclear industry unanimously approved a "flexible mitigation capability" plan, which requires operators to install portable batteries, hoses and pumps in staging areas, bolster safety to address rare but severe accidents and develop regional centers to assist operators during emergencies ([Greenwire](#), Jan. 17).

NRC staff said they are "generally encouraged" by the industry initiative and some provisions may satisfy new commission orders. Anti-nuclear groups, on the other hand, say any changes under the industry plan must be inspected and approved by NRC. The staff also said new plants must address any commission-approved Fukushima actions before they are licensed or certified.

In recent weeks, NRC Chairman Gregory Jaczko has repeatedly argued that the commission should have some assurance that industry will make changes stemming from the Fukushima review and rulemakings.

Earlier this month, Jaczko was the lone opponent of Southern Co.'s bid for a license to construct the nation's first new nuclear plant in more than three decades. The chairman said he would have approved the license for the reactors to be built in Georgia if it had included language requiring Southern to make safety upgrades stemming from the Fukushima review ([E&ENews PM](#), Feb. 9).

The chairman addressed the issue again yesterday during a vote related to Entergy Corp.'s Pilgrim nuclear power station in Plymouth, Mass.

The majority of the five-member commission denied advocacy group Pilgrim Watch's most recent appeal to reopen a relicensing hearing to raise concerns related to the Japanese disaster.

Entergy's current license is scheduled to expire on June 8, but the company has asked NRC for a 20-year renewal to operate the plant through 2032.

Jaczko disagreed and said the hearing should have been granted, given the significance of the Fukushima disaster.

Mary Lampert, the director of Pilgrim Watch, said Fukushima lessons must be addressed within the relicensing process under the National Environmental Policy Act and that the Massachusetts plant is similar in design to the Fukushima reactors.

"The license is open; the process is proceeding," Lampert said. "Therefore, we have a duty to consider this when it is a reactor that's the exact same design as Fukushima."

Carol Wightman, a spokeswoman for Entergy, said the company was pleased with NRC's ruling yesterday and that the company has gone through "an exhaustive, six-year safety and technical review as part of the NRC's license renewal process and we look forward to the commissioners' decision with regard to license renewal for Pilgrim Station."

[Click here](#) to read NRC's proposed rules.

Source: <http://www.eenews.net/Greenwire/2012/02/23/9>

(Note: One or more of the natural disasters listed in the first paragraph affect all plants near Ohio. The Fermi II plant is a similar design to the Fukushima Daiichi plants.)

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### **FirstEnergy blames cracked building on blizzard, lack of weatherproofing**

Hannah Northey, E&E reporter

Published: Tuesday, February 28, 2012

Extreme weather and the absence of exterior sealant allowed cracks to develop in a shield building at the Davis-Besse nuclear plant in Ohio, according to an analysis FirstEnergy Corp. released today.

The Akron-based utility issued an investigative report that explores how the cracks developed in parts of the plant's shield building. The 900-megawatt plant is located in Oak Harbor, about 20 miles southeast of Toledo.

The [analysis](#) found that the portion of the building facing the southwest was exposed to wild temperature swings and driving rain following a blizzard in 1978. The lack of a weatherproof coating on the structure allowed moisture to migrate into the concrete, where it froze and expanded and caused cracks to develop.

FirstEnergy sent the report to the Nuclear Regulatory Commission along with correction action measures, and the agency said it is planning a public hearing on the matter. The investigation was launched last year after plant workers discovered the cracks while replacing a corroding lid or "head" on the reactor. The plant was shut down at the time.

When workers cut a hole through the plant's 2-foot-thick concrete shield building to begin replacing the lid, they found a 30-foot crack in the shield building. The concrete structure is surrounded by a steel containment vessel that protects the reactor from natural disasters and terrorist attacks and serves as a secondary containment system. Different types of cracks in the structure were discovered through later investigations ([Greenwire](#), Dec. 5, 2011).

In December, NRC allowed the plant to start operating again despite lingering concerns over the cracks and said the company had provided "reasonable assurance" that the facility was safe.

FirstEnergy said a team of structural engineers and other experts assisted plant personnel in examining the root cause of the cracks. Investigators found the 1978 blizzard was the only event capable of degrading the concrete and that the structure is "sound and in good condition."

FirstEnergy has agreed to apply an exterior protective sealant to the shield building, conduct additional inspections to ensure the cracks have not spread and develop a long-term monitoring plan.

The Davis-Besse plant has been shut down in past years for other repairs, including between 2002 and 2004 for an acid leak that later cost the company \$5.45 million in fines and \$28 million in civil penalties ([Greenwire](#), Dec. 8, 2011).

Source: <http://www.eenews.net/eenewspm/2012/02/28/12>

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## **Nuclear plant's cracks blamed on weather**

**By The Blade via AP**

Wednesday February 29, 2012 6:19 AM

TOLEDO — The owner of a nuclear plant along Lake Erie said a lack of exterior weatherproofing coating caused concrete to crack in the outer shell protecting the plant. Akron-based FirstEnergy Corp. told the Nuclear Regulatory Commission that the exterior cracking at the Davis-Besse plant east of Toledo traces back to a 1978 blizzard when wind, rain and a drastic temperature drop caused moisture to penetrate the concrete. The utility said the moisture caused the concrete to freeze and expand, prompting the cracks that were found in October.

FirstEnergy is seeking approval to apply a weatherproofing coating and make sure the cracks haven't spread. It also proposes a long-term monitoring plan.

The NRC allowed the plant to begin producing electricity again in December after cracks were found.

From the Columbus Dispatch

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## Plant Reports

Part 21	Event Number: 47630
Rep Org: GE HITACHI NUCLEAR ENERGY Licensee: GE HITACHI NUCLEAR ENERGY Region: 1 City: WILMINGTON State: NC County: License #: Agreement: Y Docket: NRC Notified By: DALE PORTER HQ OPS Officer: JOHN KNOKE	Notification Date: 02/01/2012 Notification Time: 15:33 [ET] Event Date: 02/01/2012 Event Time: [EST] Last Update Date: 02/01/2012
Emergency Class: NON EMERGENCY 10 CFR Section: 21.21 - UNSPECIFIED PARAGRAPH	Person (Organization): WILLIAM COOK (R1DO) JONATHAN BARTLEY (R2DO) JAMNES CAMERON (R3DO) JEFF CLARK (R4DO) PART21 GROUP ()

### Event Text

PART 21 REPORT - FAILURE OF CRD COLLET RETAINER TUBE/OUTER TUBE WELD

The following information was received via facsimile:

"During a recent refurbishment of a Control Rod Drive (CRD) performed by GE Hitachi Nuclear Energy (GEH) for a domestic customer a 360 degree failure of the collet retainer tube fillet weld was identified. This weld is part of the CRD 919D258G003 Cylinder, Tube and Flange (CTF) assembly. The collet retainer tube fillet weld was performed in 1983 and subsequently assembled into a Group 003 part number 919D258G003 CTF. This G003 CTF assembly was assembled into a CRD in 1995 and placed into service in 1996. GEH continues to investigate the cause(s) of the failed fillet weld. Once the cause of the fillet weld failure is determined, GEH will review the extent of condition of this failure as well as the consequences to determine if a reportable condition exists.

"There were no adverse effects on the CRD's operation observed due to this failure.

"This 60-day interim notification, in accordance with 10CFR Part 21.21(a)(2), will be sent to all BWR/2-6 plants that utilize CRDs equipped with either 919D258G002 or 919D258G003 CTF assemblies."

The affected plants are: Nine Mile Point 1-2, **Fermi 2**, Columbia, Grand Gulf, River Bend, Fitzpatrick, Pilgrim, Vermont Yankee, Clinton, Dresden 2-3, LaSalle 1-2, Limerick 1-2, Oyster Creek, Peach Bottom 2-3, Quad Cities 1-2, **Perry 1**, Duane Arnold, Cooper, Susquehanna 1-2, Brunswick 1-2, Hope Creek, Hatch 1 - 2, Browns Ferry 1-3, Monticello, and Millstone.

\* \* \* UPDATE FROM DALE PORTER TO ERIC SIMPSON AT 1556 ON 09/27/2010 \*  
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The following update was received via fax:

"This letter provides a revision to the information transmitted on September 2, 2010 in MFN 10-245 concerning an evaluation being performed by GE Hitachi Nuclear Energy (GEH) regarding the failure to include seismic input in channel-control blade interference customer guidance. Two changes have been made in Revision 1:

"1) A statement was added regarding the applicability of this issue to the ABWR and ESBWR design certification documentation.

"2) The original MFN 10-245 referenced the Safety Communication SC 08-05 R1 that was transmitted to the US NRC via MFN 08-420. The references to SC 08-05 were changed to MFN 08-420 to prevent possible confusion.

"As stated herein, GEH has not concluded that this is a reportable condition in accordance with the requirements of 10CFR 21.21(d) and continued evaluation is required to determine the impact of a seismic event on the guidance contained in MFN 08-420."

Notified the R1DO (Gray), R2DO (Hopper), R3DO (Orth), R4DO (Farnholtz), NRR EO (Lee) and Part 21 Group (via email).

\* \* \* UPDATE FROM DALE PORTER TO MARK ABRAMOVITZ AT 1723 ON  
12/15/2010 \* \* \*

The following update was received via fax:

"This letter provides information concerning an on-going evaluation being performed by GE Hitachi Nuclear Energy (GEH) regarding the failure to include seismic loads in the guidance provided in MFN 08-420. As stated herein, GEH has not concluded that this is a reportable condition in accordance with the requirements of 10CFR21.21(d)

and continued evaluation is required to determine the impact of a seismic event on the guidance contained in MFN 08-420.

"GEH has not completed the evaluation of the impact of the seismic loads between the fuel channel and the control blade associated with an Operating Basis Earthquake (OBE), and a Safe Shutdown Earthquake (SSE) on BWR/2-5 plants."

GEH expects the task to be completed by August 15, 2011.

Notified the R1DO (Holody), R2DO (Henson), R3DO (Kozak), R4DO (Werner), NRR EO (Evans) and Part 21 Group (via email).

\* \* \* UPDATE AT 1808 EDT ON 08/11/11 FROM DALE PORTER TO JOE O'HARA \* \*

The following was received via fax:

"GE Hitachi Nuclear Energy (GEH) identified, in July 2010, that engineering evaluations did not address the potential impact of a seismic event on the ability to scram as it relates to the channel-control blade interference issue. GEH provided status of the on-going evaluation in [December 2010]. GEH has not completed the evaluation of the impact of the seismic loads between the fuel channel and the control blade associated with a bounding Safe Shutdown Earthquake (SSE) on BWR/2-5 plants. The scram capability is expected to be affected due to the added seismic loads at low reactor pressures [less than 1000 psig] in the BWR/2-5 plants. Additional evaluations are required to determine to what extent the maximum allowable friction limits specified for the BWR/2-5 plants are affected by the addition of SSE seismic loads at low reactor pressures.

"GEH issues this 60-Day Interim Report in accordance with the requirements set forth in 10CFR 21.21 (a)(2) to allow additional time for this evaluation to be completed."

The following sites are noted as having channel-control blade concerns:

Region 1: Nine Mile Point, Fitzpatrick, Pilgrim, Vermont Yankee, Oyster Creek, Limerick, Peach Bottom, Susquehanna, and Hope Creek

Region 2: Browns Ferry, Brunswick, Hatch,

Region 3: Fermi, Clinton, Dresden, LaSalle, Quad Cities, Perry, Duane Arnold, Monticello

Region 4: Columbia, Grand Gulf, River Bend, Cooper.

Notified R1DO (Powell), R2DO (Hopper), R3DO (Dickson), R4DO (Farnholtz) and NRR Part 21 Grp via email.

\* \* \* UPDATE AT 0037 EDT ON 9/27/11 FROM PORTER TO HUFFMAN VIA E-MAIL \* \* \*

The following is a summary of information received from GE Hitachi Nuclear Energy via e-mail of a letter, Reference MFN 10-245 R4, addressed to the NRC and dated September 26, 2011:

"GE Hitachi (GEH) has determined that the scram capability of the control rod drive mechanism in BWR/2-5 plants may not be sufficient to ensure the control rod will fully insert in a cell with channel-control rod friction at or below the friction limits specified in MFN 08-420 with a concurrent Safe Shutdown Earthquake (SSE). The plant condition for which incomplete control rod insertion might occur is when the reactor is below normal operating pressure (<900 psig) and a scram occurs concurrent with the SSE, for Mark I containment plants, and for the SSE with concurrent Loss-of-Coolant Accident (LOCA) and Safety Relief Valve (SRV) events for Mark II containment plants. In this scenario a Substantial Safety Hazard results because the affected control rods might not fully insert to perform the required safety function.

"GEH has determined that when channel-control blade interference is present at reduced reactor pressure and at friction levels considered acceptable in MFN 08-420, a simultaneously occurring Safe Shutdown Earthquake (SSE) may result in control rod friction that inhibits the full insertion of the affected control rods during a reactor scram from these conditions. This scenario was not explicitly considered in MFN 08-420.

"GEH has also quantified maximum allowable control rod friction for channel-control blade interference during the SSE with reactor system pressure greater than or equal to 900 psig. The previous conclusion regarding the scram capability for the BWR/2-5 plants, last communicated in MFN 10-245 R2, was based upon a reactor system pressure of 1000 psig. The updated evaluation at 900 psig has resulted in modifications to the guidance specified in MFN 08-420.

"The GE Hitachi Letter recommends testing with new allowable friction limits that will ensure control rods fully insert at low reactor pressure concurrent with an SSE (for Mark I containment plants) and SSE with concurrent LOCA (for Mark II containment plants). The enclosure in the GEH letter provides a description of the evaluation, with surveillance recommendations for BWR/2-5 plants. The recommended surveillance is intended to augment the surveillance requirements in the plant Technical Specifications and define populations of control rods to be tested, and the method for testing, until other actions that mitigate or limit the potential for channel control blade interference can be identified and implemented.

"Based upon the evaluation, GEH has concluded that a Reportable Condition under 10CFR Part 21 exists for BWR/2-5 plants. This determination does not apply to BWR/6 or ABWR plants or the ABWR/ESBWR Design Control Document's (DCD). The information contained in this document informs the NRC of the conclusions and recommendations derived from GEH's evaluation of this issue."

The list of potentially affected plants has previously been noted in this Part 21 notification and have been previously notified by GE Hitachi of the concern.

Notified R1DO (Doerflein), R2DO (Lesser), R3DO (Passehl), R4DO (Werner) and NRR Part 21 Grp via email.

\* \* \* UPDATE AT 1205 EDT ON 2/7/12 FROM LISA SCHICHLEIN TO CHARLES TEAL VIA E-MAIL \* \* \*

GE Hitachi Nuclear Energy (GEH) provided an update to its guidance and supporting evaluations that were reported in MFN 10-245 R4 on September 26, 2011.

Notified R1DO (Burritt), R2DO (Calle), R3DO (Giessner), R4DO (Campbell) and Part 21 Group via email.

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!!!! THIS EVENT HAS BEEN RETRACTED. THIS EVENT HAS BEEN RETRACTED  
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Power Reactor	Event Number: 47515
Facility: PERRY Region: 3 State: OH Unit: [1] [ ] [ ] RX Type: [1] GE-6 NRC Notified By: JAMES PRY HQ OPS Officer: JOHN KNOKE	Notification Date: 12/09/2011 Notification Time: 22:41 [ET] Event Date: 12/09/2011 Event Time: 18:35 [EST] Last Update Date: 02/06/2012
Emergency Class: NON EMERGENCY 10 CFR Section: 50.72(b)(3)(v)(B) - POT RHR INOP	Person (Organization): RICHARD SKOKOWSKI (R3DO)

Unit	SCRAM Code	RX CRIT	Initial PWR	Initial RX Mode	Current PWR	Current RX Mode
1	N	Y	100	Power Operation	100	Power Operation

**Event Text**

**PART 21 ISSUE WITH SEISMIC CLIPS ON RCIC SYSTEM CONTROLLERS RESULTS IN SYSTEM INOPERABILITY**

"On December 7, 2011, a 10 CFR 21 report (reference NRC EN No. 47498) was received from a vendor for a defect with NUS Controllers. The defect involves spring clips that form part of the seismic restraints for the controllers. The controllers referenced in the report are installed for the Reactor Core Isolation Cooling (RCIC) system in the control room and remote shutdown panel. Based on initial information provided by the vendor, it was determined that the RCIC system remained operable. On December 9, 2011, additional information provided by the vendor did not support the immediate operability determination and the RCIC system was declared inoperable for Technical Specification (TS) Limiting Condition for Operation (LCO)

3.5.3 Condition A at 1835 hours [EST]. At 1932 hours [EST], the High Pressure Core Spray system was verified operable per TS LCO 3.5.3 Required Action A.1. TS LCO 3.5.3 Required Action A2 requires restoration of the RCIC system to operable status within 14 days. Qualified spring clips have been obtained and will be installed on the controllers. This condition is being reported in accordance with 10 CFR 50.72(b)(3)(v)(B) as a condition that at the time of discovery could have prevented the fulfillment of the safety function of a system needed to remove residual heat.

"The NRC Resident Inspector has been notified."

\* \* \* UPDATE FROM CHARLES ELBERFELD TO JOHN KNOKE AT 1415 EST ON 12/10/11 \* \* \*

"As a follow-up to the condition reported above, we have replaced the affected seismic clips on the controllers and the Reactor Core Isolation Cooling system is now operable as of 0734 on December 10, 2011.

"The NRC Resident Inspector has been notified." R3DO (Skokowski) notified.

\* \* \* RETRACTION FROM LLOYD ZERR TO CHARLES TEAL ON 2/6/12 AT 1504 EST \* \* \*

"The vendor provided a seismic report to the station. This report showed that the seismic clips holding the Reactor Core Isolation Cooling (RCIC) controller meet the Operating Basis Earthquake (OBE) test requirements and design requirements for a Safe Shutdown Earthquake (SSE) for Perry. Based on this review, it was determined that the spring clips would function properly during and OBE and SSE. Because the condition reported in Event Number 47515 would not have prevented the fulfillment of the safety function of a system needed to remove residual heat, the condition is not reportable, and this notification is being retracted. The evaluation for this condition is documented in condition report 2011-06531. The NRC Resident Inspector has been informed."

Notified R3DO (Giessner) and Part 21 Group via email.

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!!!! THIS EVENT HAS BEEN RETRACTED. THIS EVENT HAS BEEN RETRACTED !!!!!!

Power Reactor	Event Number: 47545
Facility: PERRY Region: 3 State: OH Unit: [1] [ ] [ ] RX Type: [1] GE-6 NRC Notified By: JAMES PRY HQ OPS Officer: JOHN KNOKE	Notification Date: 12/21/2011 Notification Time: 21:37 [ET] Event Date: 12/21/2011 Event Time: 13:59 [EST] Last Update Date: 02/15/2012

Emergency Class: NON EMERGENCY 10 CFR Section: 50.72(b)(3)(ii)(B) - UNANALYZED CONDITION	Person (Organization): PATTY PELKE (R3DO)
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Unit	SCRAM Code	RX CRIT	Initial PWR	Initial RX Mode	Current PWR	Current RX Mode
1	N	Y	100	Power Operation	100	Power Operation

### Event Text

#### GROUNDWATER LEVEL MAY EXCEED DESIGN ASSUMPTIONS

"On December 21, 2011, at 1359 hours EST, it was determined that the test instruction for the weekly groundwater level readings contained non-conservative acceptance criteria. The test instruction acceptance criteria for groundwater level exceeds the initial assumptions used in the Updated Safety Analysis Report (USAR) Chapter 15 accident analysis for 'Postulated Radioactive Releases due to Liquid Containing Tank Failures.' The issue was identified during the conduct of a prompt functionality assessment evaluating the plant underdrain system performance and to ensure all USAR described functions were being met.

"The test instruction acceptance criteria is less than 575 feet. The calculation supporting the Chapter 15 accident analysis assumes an initial groundwater elevation of 568 feet in order to accumulate a sufficient volume of groundwater to dilute the tank inventory prior to exiting the underdrain system. The accumulation volume results in hold up time allowing for mixing and radioactive decay. With the degraded performance of the underdrain system pumps and high precipitation, the groundwater level had risen above 568 feet but was still less than 575 feet. A preliminary engineering evaluation has determined that significant margin exists in the calculation. A calculation revision is being pursued in parallel with this notification.

"Compensatory actions involving the repair of 1 permanent non-safety pump and installation of temporary pumps were previously initiated and the groundwater levels are decreasing. Restoration of the remaining permanent plant pumps continues.

"The NRC Resident Inspector has been notified."

\* \* \* RETRACTION ON 2/15/12 AT 1315 EST FROM LLOYD ZERR TO ERIC SIMPSON \* \* \*

"The calculation supporting the USAR Chapter 15 accident analysis was reviewed and subsequently revised. The revised calculation verifies and initial groundwater elevation of 575 feet is consistent with the preliminary assessment that substantial margin existed in the calculation for the underdrain system. Because the condition reported in Event Number 47545 was not an event or condition that results in the nuclear power plant being in an unanalyzed condition that degrades safety, the

condition is not reportable, and this notification is retracted. The evaluation for this condition is documented in condition report 2011-07169."

The NRC Resident Inspector and R3DO (Passehl) were notified.

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Power Reactor	Event Number: 47670
Facility: DAVIS BESSE Region: 3 State: OH Unit: [1] [ ] [ ] RX Type: [1] B&W-R-LP NRC Notified By: TOM PHILLIPS HQ OPS Officer: STEVE SANDIN	Notification Date: 02/16/2012 Notification Time: 15:03 [ET] Event Date: 02/16/2012 Event Time: 13:42 [EST] Last Update Date: 02/16/2012
Emergency Class: NON EMERGENCY 10 CFR Section: 50.72(b)(3)(xiii) - LOSS COMM/ASMT/RESPONSE	Person (Organization): DAVE PASSEHL (R3DO)

Unit	SCRAM Code	RX CRIT	Initial PWR	Initial RX Mode	Current PWR	Current RX Mode
1	N	Y	100	Power Operation	100	Power Operation

**Event Text**

**LOSS OF SPDS GREATER THAN EIGHT (8) HOURS DUE TO HARD DRIVE FAILURE**

"At approximately 0542 hours [EST], the Safety Parameter Display System (SPDS) became non-functional, and therefore was not available in the Control Room or in the emergency response facilities. Efforts are underway to restore the system, but as of 1342 hours [EST] these efforts have not been successful. The loss of SPDS for more than 8 hours is being reported in accordance with 10 CFR 50.72(b)(3)(xiii).

Troubleshooting efforts continue to restore the SPDS. The Emergency Response Data System (ERDS) remains functional, and the station remains capable of performing dose assessment using manual inputs per site procedures. The Control Room also continues to have the capability to retrieve plant data inputs to assess plant conditions and perform core damage assessments."

"The NRC Senior Resident Inspector has been notified, and the State of Ohio Emergency Management Agency will be notified."

\* \* \* UPDATE AT 2315 EST ON 02/16/12 FROM TOM COBBLEDICK TO S. SANDIN \* \* \*

As of 2100 EST on 02/16/12 the SPDS has been restored to service and is functioning properly.

The licensee will inform the NRC Resident Inspector. Notified R3DO (Passehl).

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## **Fukushima Daiichi Update**

### **Japan's Fukushima reactor may be reheating: operator**

*AFP – 14 hrs ago (2/13/2012)*

The crippled Fukushima Dai-ichi nuclear power station is seen through a bus window ... Temperature readings at one of the crippled Fukushima nuclear reactors have risen above Japan's stringent new safety standard but there was no immediate danger, its operator said Sunday.

Tokyo Electric Power said one of three thermometers on the number-two reactor at the Fukushima Daiichi nuclear plant indicated gradual heating this month and reached 82 degrees Celsius (179.6 degrees Fahrenheit) Sunday.

The temperature was above the 80-degree safety standard newly employed by Japan's nuclear safety authority, prompting the utility to publicise the reading and notify public agencies.

But it remains below the 100 degree level that the government says is needed to maintain the safe state of "cold shutdown".

The utility said it will check the accuracy of the thermometer in question, as two others on the same reactor have been measuring its temperature at around 35 degrees.

Gas samples from the reactor did not indicate any new critical reaction, and other monitors and data do not suggest heating and increased steam, TEPCO said.

"We believe the state of cold shutdown is being maintained," TEPCO spokesman Junichi Matsumoto told a press conference.

"Rather than the actual temperature rising, we believe there is high possibility that the thermometer concerned is experiencing display error," he said.

As a precaution, TEPCO has increased the volume of water and boric acid solution being poured on the reactor to cool it down.

The Fukushima power plant became the site of the worst nuclear accident since Chernobyl after it lost its cooling systems in the March earthquake and tsunami and went through meltdown and explosions.

Severe radiation contamination has rendered surrounding communities uninhabitable and triggered food and water scares in Japan.

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### **Cleanup of Fukushima region hits speed bumps**

Published: Monday, February 13, 2012

As Japan continues its efforts to clean up radiation in the aftermath of the Fukushima Daiichi nuclear disaster, its methods have often seemed unproven or tinged with potential cronyism.

The goal is to restore the more-than-8,000-square-mile region exposed to radiation and to allow its displaced residents, some 80,000 people, to return to their homes.

The government initially handed out \$3 billion in contracts to rehabilitate the area. The first three contracts went to the giant construction companies that helped build most of Japan's nuclear power plants.

These firms do not have more expertise in cleaning up radiation than anyone else, but they do have close ties to the government, critics say. Much of the actual work is doled out to subcontractors, sub-subcontractors and the untrained laborers they employ.

"It's a scam," said Kiyoshi Sakurai, a critic of the nuclear industry and a former energy researcher. "Decontamination is becoming a big business. ... The Japanese nuclear industry is run so that the more you fail, the more money you receive."

On top of that, radioactive particles, carried by wind and rain, could easily recontaminate towns and cities after cleanup crews finish their work, experts say.

"No experts yet exist in decontamination, and there is no reason why the state should pay big money to big construction companies," said Yoichi Tao, a visiting professor in physics at Kogakuin University (Hiroko Tabuchi, [New York Times](#), Feb. 10). -- JE

Source: <http://www.eenews.net/Greenwire/2012/02/13/30>

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### **Plant chief: Fukushima nuke plant still vulnerable**



By MARI YAMAGUCHI | Associated Press –

OKUMA, Japan (AP) — Japan's tsunami-hit Fukushima power plant remains fragile nearly a year after it suffered multiple meltdowns, its chief said Tuesday, with makeshift equipment — some mended with tape — keeping crucial systems running.

An independent report, meanwhile, revealed that the government downplayed the full danger in the days after the March 11 disaster and secretly considered evacuating Tokyo.

Journalists given a tour of the Fukushima Dai-ichi plant on Tuesday, including a reporter from The Associated Press, saw crumpled trucks and equipment still lying on the ground. A power pylon that collapsed in the tsunami, cutting electricity to the plant's vital cooling system and setting off the crisis, remained a mangled mess.

Officials said the worst is over but the plant remains vulnerable.

"I have to admit that it's still rather fragile," said plant chief Takeshi Takahashi, who took the job in December after his predecessor resigned due to health reasons. "Even though the plant has achieved what we call 'cold shutdown conditions,' it still causes problems that must be improved."

The government announced in December that three melted reactors at the plant had basically stabilized and that radiation releases had dropped. It still will take decades to fully decommission the plant, and it must be kept stable until then.

The operators have installed multiple backup power supplies, a cooling system and equipment to process massive amounts of contaminated water that leaked from the damaged reactors.

But the equipment that serves as the lifeline of the cooling system is shockingly feeble-looking. Plastic hoses cracked by freezing temperatures have been mended with tape. A set of three pumps sits on the back of a pickup truck.

Along with the pumps, the plant now has 1,000 tanks to store more than 160,000 tons of contaminated water.

Radiation levels in the Unit 1 reactor have fallen, allowing workers to repair some damage to the reactor building. But the Unit 3 reactor, whose roof was blown off by a hydrogen explosion, resembles an ashtray filled with a heap of cigarette butts.

A dosimeter recorded the highest radiation reading outside Unit 3 during Tuesday's tour — 1.5 millisieverts per hour. That is a major improvement from last year, when up to 10 sieverts per hour were registered near Units 1 and 2.

Exposure to more than 1,000 millisieverts, or 1 sievert, can cause radiation sickness including nausea and an elevated risk of cancer.

Officials say radiation hot spots remain inside the plant and minimizing exposure to them is a challenge. Employees usually work for two to three hours at a time, but in some areas, including highly contaminated Unit 3, they can stay only a few minutes. Since the March 11 crisis, no one has died from radiation exposure.

Tuesday's tour, organized by plant operator Tokyo Electric Power Co., or TEPCO, came as an independent group released a report saying the government withheld information about the full danger of the disaster from its own people and from the United States.

The report by the private Rebuild Japan Initiative Foundation delivers a scathing view of how leaders played down the risks of the reactor meltdowns while holding secret discussions of a worst-case scenario in which massive radiation releases would require the evacuation of a much wider region, including Tokyo. The discussions were reported last month by the AP.

The report, compiled from interviews with more than 300 people, paints a picture of confusion during the days immediately after the accident. It says U.S.-Japan relations were put at risk because of U.S. frustration and skepticism over the scattered information provided by Japan.

The misunderstandings were gradually cleared up after a bilateral committee was set up on March 22 and began regular meetings, according to the report.

It credits then-Prime Minister Naoto Kan for ordering TEPCO not to withdraw its staff from the plant and to keep fighting to bring it under control.

TEPCO's president at the time, Masataka Shimizu, called Kan on March 15 and said he wanted to abandon the plant and have all 600 TEPCO staff flee, the report said. That would have allowed the situation to spiral out of control, resulting in a much larger release of radiation.

A group of about 50 workers was eventually able to bring the plant under control.

TEPCO, which declined to take part in the investigation, has denied it planned to abandon Fukushima Dai-ichi. The report notes the denial, but says Kan and other officials had the clear understanding that TEPCO had asked to leave.

But the report criticizes Kan for attempting to micromanage the disaster and for not releasing critical information on radiation leaks, thereby creating widespread distrust of the government.

Kan said he was grateful the report gave a favorable assessment of his decision to prevent TEPCO workers from abandoning the plant.

"I give my heartfelt respects to the efforts of the commission," he said in a statement. "I want to do my utmost to prevent a recurrence."

Kan has acknowledged in a recent interview with AP that the release of information was sometimes slow and at times wrong. He blamed a lack of reliable data at the time and denied the government hid such information from the public.

The report also concludes that government oversight of nuclear plant safety had been inadequate, ignoring the risk of tsunami and the need for plant design renovations, and instead clinging to a "myth of safety."

"The idea of upgrading a plant was taboo," said Koichi Kitazawa, a scholar who heads the commission that prepared the report. "We were just lucky that Japan was able to avoid the worst-case scenario. But there is no guarantee this kind of luck will prevail next time."

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Associated Press writer Yuri Kageyama contributed to this report from Tokyo. Follow Yamaguchi at <http://twitter.com/mariyamaguchi> and Kageyama at <http://twitter.com/yurikageyama>

Source: <http://news.yahoo.com/plant-chief-fukushima-nuke-plant-still-vulnerable-150210154.html>

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