

To: Jim Mehl, ERU Supervisor  
From: Zack Clayton, Rad Coord  
Subject: May Monthly Report  
Date: June 4, 2009

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### Beans:

Training:	0
Drills	1
Meetings:	3
Technical Assistance:	2
Public Assistance:	2

Web Page Hits: There were 47 RAD hits in May.

### Coming Attractions:

Working Group	6/9
MMRS Group	6/18
RAT Training	7/1
Working Group	7/2
URSB	7/7

### Facility Updates:

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

Davis Besse operated for May at full power.

#### **Perry Nuclear Power Plant**

Perry plant started May in a refueling outage. They exited shutdown on May 12 at 1% power.

At 22:52 on May 14, 2009, the Perry plant was attempting fast speed on 'A' Recirculating Pump when the pump tripped off. The 'B' Recirculating Pump worked. Personnel believe a faulty relay caused the 'A' Recirculating Pump to trip to off. The plant is holding at 32% power and is preparing a new relay to replace the faulty one. The NRC Resident has been informed. This will not be published in

the Event Notification section on the NRC website.

### **Beaver Valley Power Station**

The Beaver Valley Power Station reported a HAZMAT spill on site May 27 that occurred in a warehouse. A pallet of batteries was dropped causing a spill of battery acid. An offsite contractor was called in to clean up the spill. This spill did not occur near plant equipment and in no way affects plant operation.

#### **Beaver Valley Unit I**

Beaver Valley Unit I entered a refueling shutdown April 20 which continued until May 22. This is the 19<sup>th</sup> refueling outage for this unit.

On May 6 a faulty blocking switch permitted a Safety Features Actuation signal to inadvertently activate Train A diesel generator, and Emergency Core Cooling Pump also on Train A. The switch has been replaced.

The NRC was notified within 30 days as required by 10 CFR 50.73.

#### **Beaver Valley Unit II**

Beaver Valley Unit II operated at full power for April. There were no event reports.

#### **Fermi II**

Fermi started May in Startup mode from their refueling outage and operated at full power for May.

### **Portsmouth Gaseous Diffusion Plant**

There was an EP briefing scheduled for State agencies May 20 at ODOT offices at the Don Scott airport.

#### **Activity:**

5/6 Working Group updates and the rest of this meeting was devoted to working through the

outstanding items from the Davis Besse  
run.

dry

5/12 Davis Besse Evaluated Exercise. There were  
no issues noted for the State and special  
mention of the Dose assessment team  
coordination and problem solving.

5/20 Piketon Briefing

5/21 MMRS at Poison Control concentrated on  
decontamination procedures and local agency  
coordination and notification.

### **Office Issues:**

Filed equipment for the RAT Team has been ordered.  
This includes 5 44-38 probes for the Ludlum 22241-3  
meters, 3 Canberra MCB2 contamination meters, and 10  
Ultradiac personal dosimeters.

### **NRC Reports and Statistics:**

May operating power levels

Date	BV1	BV2	DB	Fermi2	Perry
1	0	100	100	13	0
4	0	100	100	100	0
11	0	100	100	100	0
13	0	100	100	100	9
16	0	100	100	100	34
18	0	100	100	100	60
22	29	100	100	100	82
23	74	100	100	100	82
25	100	100	100	100	100
31	100	96	100	100	100

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Perry Nuclear Power Plant, Unit No. 1 - Request For  
Additional Information Related To Relief Request PR-3 For  
The Inservice Testing Program. The document is 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>

To access this document use ADAMS Accession No.  
ML091190198

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Beaver Valley Power Station, Unit No. 1 - Extension  
Request Approval Letter

The document is 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>

To access this document use Adams Accession No.  
ML091240030

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Perry Nuclear Power Plant, Unit No. 1 - Issuance Of  
Amendment RE: License Amendment Request No. 08-18  
To Incorporate Technical Specification Task Force  
Travelers 479 And 497.

The document is 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>

To access this document use ADAMS Accession No.  
ML090920152

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PDF version of RIS 2009-05, Uranium Recovery Policy  
Regarding: (1) The Process For Scheduling Licensing  
Reviews of Applications For New Uranium Recovery  
Facilities And (2) The Restoration Of Groundwater At  
Licensed Uranium In Situ Recovery Facilities, dated April  
29, 2009 (ML083510622), that has been posted to the  
NRR GCC Web. The URL for Web access to generic  
communications files on the NRC Homepage:

<http://www.nrc.gov/reading-rm/doc-collections/gen-comm/reg-issues/2009/>

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PDF version of RIS 2009-07, Status Update for the  
Implementation of NRC Regulatory Authority for Certain  
Naturally Occurring and Accelerator-Produced Radioactive  
Material, dated May 7, 2009, (ML091030497), that has  
been posted to the NRR GCC Web. The URL for Web

access to generic communications files on the NRC  
Homepage:  
<http://www.nrc.gov/reading-rm/doc-collections/gen-comm/reg-issues/2009/>

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Beaver Valley Power Station, Unit No.2-Staff Evaluation  
RE: 2008 Steam Generator Tube Inspection Reports (TAC  
Nos. MD9559 And ME0097)  
The document is 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>  
To access this document use ADAMS Accession:  
ML091130149

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Fermi - Denial of Request for Extension of Time to  
Request a Hearing Related to the Order for  
Implementation of Additional Security Measures and  
Fingerprinting for Unescorted Access for Fermi Power  
Plant Independent Spent Fuel Storage Installation.  
The document is 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>  
To access this document use ADAMS Accession No:  
ML091280321

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Fermi - Denial of Request for Extension of Time to  
Request a Hearing Related to the Order for  
Implementation of Additional Security Measures and  
Fingerprinting for Unescorted Access for Fermi Power  
Plant Independent Spent Fuel Storage Installation.  
The document is 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>  
To access this document use ADAMS Accession No:  
ML091280294

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PDF version of RIS 2009-02, Rev. 1, Use of Containment

Atmosphere Gaseous Radioactivity Monitors as Reactor Coolant System Leakage Detection Equipment at Nuclear Power Reactors, dated May 8, 2009, (ML090850574), that has been posted to the NRR GCC Web, along with the URL for Web access to generic communications files on the NRC Homepage: <http://www.nrc.gov/reading-rm/doc-collections/gen-comm/reg-issues/2009/>

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Beaver Valley Power Station, Unit No.2 - Request for Additional Information

The document is 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>

To access this document use Adams Accession No.

ML091350257

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PDF version of Information Notice 2009-08, NRC Rapid Change Notification of Licensees Following A Physical Attack Against A Facility, dated May 8, 2009, that has been posted to the NRR GCC Web, along with the URL for Web access to generic communications files on the NRC Homepage: <http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/2009/>

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Beaver Valley Power Station, Unit No. 1-Relief Request No. BV1-WE-2-2 Regarding Visual Examination Of The Containment Liner (TAC No. ME1166)

The document is 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>

To access this document use ADAMS Accession:

ML091320223

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FERMI 2 - RADIOLOGICAL EMERGENCY RESPONSE PREPAREDNESS PLAN CHANGES (TAC NO. MD5611)

The document is 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>  
 To access this document use ADAMS Accession:  
 ML091390364

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Beaver Valley Power Station, Unit No. 2 - Supplemental  
 Information Needed for Acceptance  
 The document is 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>  
 To access this document use Adams Accession No.  
 ML091520107

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Power Reactor	Event Number: 45032
Facility: DAVIS BESSE Region: 3 State: OH Unit: [1] [ ] [ ] RX Type: [1] B&W-R-LP NRC Notified By: LARRY MYERS HQ OPS Officer: DONALD NORWOOD	Notification Date: 04/30/2009 Notification Time: 12:50 [ET] Event Date: 04/30/2009 Event Time: 08:55 [EDT] Last Update Date: 04/30/2009
Emergency Class: NON EMERGENCY 10 CFR Section: 50.72(b)(2)(xi) - OFFSITE NOTIFICATION	Person (Organization): DAVID HILLS (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**

OFFSITE NOTIFICATIONS MADE DUE TO INADVERTANT ACTIVATION OF SIX EPZ SIRENS

"At 0855 six sirens had been activated by the Ottawa County dispatch console for 3 minutes.

"At 0905 Ottawa County Sheriff Dispatch Center notified [the licensee] that sirens in Ottawa County had been inadvertently activated. It appears this was caused by the county radio service vendor resetting the dispatch center consoles during trouble shooting of the sheriff's radio system.

"Immediate actions taken: RA-EP-00420, Response to Prompt Notification System Malfunction, was implemented. The siren system was polled and the data from the Emergency Operations Facility (EOF) siren computer was reviewed. The computer data indicated at 08:55:55 the six sirens located in Bay Township had been activated by the Ottawa County Dispatch Console for 3-minutes. Fleet siren maintenance was contacted and requested to come to Ottawa County to meet with the radio service vendor to determine the cause of the inadvertent activation.

"In addition, NOP-LP-5001, Communicating Events of Public Interest, was implemented and associated notifications were made."

These notifications included the State of Ohio, Ottawa County, and Lucas County.

The NRC Resident Inspector was notified by the licensee.

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Power Reactor	Event Number: 45035
Facility: FERMI Region: 3 State: MI Unit: [2] [ ] [ ] RX Type: [2] GE-4 NRC Notified By: JIM KONRAD HQ OPS Officer: STEVE SANDIN	Notification Date: 04/30/2009 Notification Time: 17:39 [ET] Event Date: 04/30/2009 Event Time: 10:39 [EDT] Last Update Date: 04/30/2009
Emergency Class: NON EMERGENCY 10 CFR Section: 50.72(b)(3)(v)(D) - ACCIDENT MITIGATION	Person (Organization): DAVID HILLS (R3DO)

Unit	SCRAM Code	RX CRIT	Initial PWR	Initial RX Mode	Current PWR	Current RX Mode
2	N	Y	10	Startup	0	Startup

#### Event Text

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

HPCI DECLARED INOPERABLE DUE TO FAILURE OF TEST LINE PRESSURE CONTROL VALVE DURING SURVEILLANCE TEST

"During plant startup on 4/29/09 at 2239 [EDT], the startup had progressed to the point where plant conditions were adequate to allow performance of SR 3.5.1.9, High Pressure Coolant Injection (HPCI) System flow testing against system head corresponding to reactor pressure. A Note to SR 3.5.1.9 allows 12 hours to perform this test after adequate reactor steam dome pressure and flow have been established for test performance.

"During the test performance, the test line pressure control valve did not properly operate to establish the required system head. The HPCI system was shutdown and returned to Standby. Earlier, on 4/29/09, SR 3.5.1.10, low pressure HPCI flow testing was successfully completed. Troubleshooting of the test line pressure control valve was begun.

"At 1039 [EDT] on 4/30/09, the 12 hour allowance of the Note to SR 4.5.1.9 expired and the HPCI system was declared inoperable for failure to complete the required surveillance. The HPCI system remains in Standby and is configured to perform its safety function.

"However, this event represents a potential loss of a single train safety system pending repair of the test line pressure control valve and completion of flow testing."

With HPCI inoperable, the Unit is in the 14-day Tech. Spec. Action Statement 3.5.1. The licensee is revising their surveillance procedure to allow for manual operation of the failed control valve and estimates that the required testing will be completed within 4 hours. The Unit will remain in Mode 2 pending completion of this test.

The licensee informed the NRC Resident Inspector.

\* \* \* RETRACTION PROVIDED BY D. DUNCAN TO JASON KOZAL 05/01/09 AT 1128 \* \* \*

"High Pressure Coolant Injection (HPCI) Surveillance Requirement 3.5.1.9, HPCI system flow testing against system head corresponding to reactor pressure, was satisfactorily completed and HPCI declared OPERABLE May 1, 2009 at 0221 hours. There was no loss of HPCI safety function.

Therefore this event is retracted."

Notified R3DO (Hills).

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Power Reactor	Event Number: 44984
Facility: FERMI Region: 3 State: MI Unit: [2] [ ] [ ] RX Type: [2] GE-4 NRC Notified By: ROBERT MATUSZAK HQ OPS Officer: DONALD NORWOOD	Notification Date: 04/11/2009 Notification Time: 14:27 [ET] Event Date: 04/11/2009 Event Time: 12:10 [EDT] Last Update Date: 05/01/2009
Emergency Class: NON EMERGENCY 10 CFR Section: 50.72(b)(3)(xiii) - LOSS COMM/ASMT/RESPONSE	Person (Organization): ROBERT DALEY (R3)

Unit	SCRAM Code	RX CRIT	Initial PWR	Initial RX Mode	Current PWR	Current RX Mode
2	N	N	0	Refueling	0	Refueling

#### Event Text

##### LOSS OF EMERGENCY ASSESSMENT CAPABILITY - TECHNICAL SUPPORT CENTER VENTILATION UNAVAILABLE

"Notified by Engineering that Technical Support Center (TSC) emergency charcoal sample failed acceptance criteria. Declared TSC ventilation unavailable at 12:10 PM EDT, 4/11/09. TSC ventilation supports RERP radiological habitability function and as such represents a major loss of emergency assessment capability, offsite response capability, or offsite communications capability in accordance with 10CFR50.72(b)(3)(xiii). Notified all Shift Managers if an emergency event is declared (Alert or higher), Shift Managers will need to modify emergency call out service so that TSC staffing report to Emergency Operating Facility (EOF). The use of the EOF as a backup facility for the TSC is included in Fermi's RERP Plan. Fermi will notify the NRC upon completion of corrective maintenance."

The licensee notified the NRC Resident Inspector.

\* \* \* UPDATE FROM ROBERT MATUSZAK TO DONALD NORWOOD ON 5/1/09 AT 1621 EDT \* \* \*

"Regarding Technical Support Center (TSC) ventilation unavailability: Corrective maintenance to restore HVAC system has been completed satisfactorily. TSC has been restored as an Emergency Response facility."

The TSC was declared operable at 1457 EDT. Corrective maintenance included replacing the out-of-spec charcoal filters and satisfactory follow-up tests.

The licensee notified the NRC Resident Inspector. Notified R3DO (Hills).

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Power Reactor	Event Number: 45001
Facility: BEAVER VALLEY Region: 1 State: PA Unit: [1] [ ] [ ]	Notification Date: 04/20/2009 Notification Time: 05:09 [ET] Event Date: 04/20/2009

RX Type: [1] W-3-LP,[2] W-3-LP NRC Notified By: GEORGE E. STOROLIS HQ OPS Officer: STEVE SANDIN	Event Time: 01:53 [EDT] Last Update Date: 05/14/2009
Emergency Class: NON EMERGENCY 10 CFR Section: 50.73(a)(1) - INVALID SPECIF SYSTEM ACTUATION	Person (Organization): RAY POWELL (R1)

Unit	SCRAM Code	RX CRIT	Initial PWR	Initial RX Mode	Current PWR	Current RX Mode
1	N	N	0	Hot Standby	0	Hot Standby

### Event Text

#### UNEXPECTED START OF THE STEAM DRIVEN AUXILIARY FEEDWATER PUMP DURING PLANT COOLDOWN

"On 4/20/09 at 0153 hours, while in Mode 3 performing a plant cooldown for a refueling outage, a control room operator noted that the 'B' train steam supply (TV-1MS-105B) to the steam driven auxiliary feedwater pump, FW-P-2, was open. This caused the steam driven auxiliary feedwater pump to start and inject auxiliary feedwater into the steam generators. This was an unexpected condition. The start of the FW-P-2 auxiliary turbine driven feedwater pump is reportable under 10CFR50.72(b)(3)(iv)(A).

"At 0209, TV-1MS-105B was closed. The steam driven auxiliary feedwater pump was declared inoperable and Technical Specification action statements were entered. Technical Specification 3.7.5 Condition B requires the pump to be restored to operable status within 72 hours or be in Mode 4 within the following 18 hours.

"Mode 4 was entered on 4/20/09 at 0347 hours. The steam drive auxiliary feedwater pump is not required to be operable in Mode 4. Technical Specification 3.7.5 Condition B was exited on 4/20/09 at 0347.

"Investigation is in progress to determine the cause of TV-1MS-105B opening.

"The licensee notified the NRC Resident Inspector."

\* \* \* UPDATE ON 5/13/09 AT 1021 EDT TO RETRACT ORIGINAL EVENT AND REPORT AS INVALID ACTUATION FROM MATTY TO HUFFMAN \* \* \*

"This notification retracts 10 CFR 50.72 Event Notification No. 45001 since the actuation that was reported has subsequently been determined to be invalid.

"On April 20, 2009, Beaver Valley Power Station Unit 1 (BVPS-1) was in Mode 3 and being shutdown in preparation for a refueling outage. At 0153 hours, one steam supply isolation valve (TV-1 MS-105B) to the steam-driven Auxiliary Feedwater System Pump (FW-P-2) unexpectedly opened at BVPS-1, causing this pump to commence feeding all three steam generators. FW-P-2 functioned as designed with steam being supplied to the pump's steam-driven turbine. This actuation was reported in NRC Event Notification No. 45001.

"This start of the steam-driven Auxiliary Feedwater Pump was not valid. There was no adverse Steam Generator water levels, no Safety Injection signal, and no Reactor Coolant Pump undervoltage condition which could have caused an Auxiliary Feedwater Pump start. No maintenance or tests were ongoing with the Auxiliary Feedwater System at the time. After observing that there was no demand for this Auxiliary Feedwater System pump to be operating, the control room crew closed the steam supply isolation valve from the control room at 0209 hours, terminating operation of this auxiliary feedwater pump.

"A follow-up problem solving team investigation did not identify any deficiencies within the solid state protection system. The most likely cause involved a degraded control room benchboard switch for TV-1 MS-105B. The physical degradation of the control switch would have allowed for the unplanned opening of the steam supply to the Auxiliary Feedwater Pump. This benchboard switch has been replaced and satisfactorily tested.

"This event is being retracted since the Auxiliary Feedwater Pump actuation was not valid and therefore not reportable pursuant to 10 CFR 50.72(b)(3)(iv)(A) as previously reported.

"This event is, however, reportable pursuant to 10 CFR 50.73(a)(2)(iv)(A) since it involved an actuation of a PWR Auxiliary Feedwater system train as listed per 10 CFR 50.73(a)(2)(iv)(B)(6). However, pursuant to 10 CFR 50.73(a)(1), this event is being reported via this telephone notification, instead of submitting a written Licensee Event Report, since the automatic actuation of the Auxiliary Feedwater System pump was not generated by a valid actuation."

The licensee has notified the NRC Resident Inspector. R1DO (Holody) notified.

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General Information or Other	Event Number: 45061
Rep Org: OHIO BUREAU OF RADIATION PROTECTION Licensee: THE UROLOGY CENTER, LLC Region: 3 City: Cincinnati State: OH County: License #: 02200310002 Agreement: Y Docket: NRC Notified By: MARK LIGHT HQ OPS Officer: DONALD NORWOOD	Notification Date: 05/13/2009 Notification Time: 09:58 [ET] Event Date: 05/13/2009 Event Time: [EDT] Last Update Date: 05/14/2009
Emergency Class: NON EMERGENCY 10 CFR Section: AGREEMENT STATE	Person (Organization): MICHAEL KUNOWSKI (R3DO) ANGELA MCINTOSH (FSME)

**Event Text**

**AGREEMENT STATE REPORT - MEDICAL EVENT INVOLVING AN UNDERDOSAGE TO THE PROSTATE**

"Ohio Department of Health (ODH) Bureau of Radiation Protection (BRP) was notified of a medical event that occurred at The Urology Center, LLC located at 4700 Smith Road, Suite M, Cincinnati, OH. 45212, Ohio license # 02200310002 at 12:30 PM 05/12/2009. The patient received a permanent implant of 64 I-125 seeds on 5-11-09. The total activity implanted was 28.422 mCi. (.444mCi/seed). The prescribed dose to the prostate was 144.0 Gy. The post-plan CT was evaluated 5-12-09 and determined that the prostate volume receiving the prescribed dose was 47% (i.e. V100%=47%) resulting in a 53 percent under dose of the prescribed dose. The patient and physician have been notified. ODH BRP will continue to evaluate this event. The licensee has initiated an internal evaluation."

A Medical Event may indicate potential problems in a medical facility's use of radioactive materials. It does not necessarily result in harm to the patient.

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Power Reactor	Event Number: 45099
Facility: BEAVER VALLEY Region: 1 State: PA	Notification Date: 05/28/2009 Notification Time: 08:59 [ET]

Unit: [1] [ ] [ ] RX Type: [1] W-3-LP,[2] W-3-LP NRC Notified By: BRIAN MATTY HQ OPS Officer: VINCE KLCO	Event Date: 05/06/2009 Event Time: 13:52 [EDT] Last Update Date: 05/28/2009
Emergency Class: NON EMERGENCY 10 CFR Section: 50.73(a)(1) - INVALID SPECIF SYSTEM ACTUATION	Person (Organization): GLENN DENTEL (R1DO)

Unit	SCRAM Code	RX CRIT	Initial PWR	Initial RX Mode	Current PWR	Current RX Mode
1	N	N	0	Cold Shutdown	0	Cold Shutdown

### Event Text

AUTOMATIC ACTUATION OF RPS, ECCS AND EDG GENERATED BY AN INVALID ACTUATION SIGNAL

"On May 6, 2009, Beaver Valley Power Station Unit 1 was in Mode 5 during a refueling outage. At 1352, a Low Steam Line Pressure Reactor Trip and Safety Injection (SI) signal was unexpectedly received on Train A. The Train A Emergency Diesel Generator started upon the SI signal, as designed, but did not load since there was no actual emergency bus low voltage condition. The Train A Charging pump (Emergency Core Cooling Pump) was in service and operating before the generation of the SI signal, and continued to operate following the SI signal. Other plant components not isolated for plant outage conditions properly actuated in response to the generated SI signal.

"A SI Block must be inserted whenever the Solid State Protection System (SSPS) is operating in Mode 5 to prevent a SI signal from being generated on low steam line pressure since steam line pressure will be below the low steam line pressure setpoint. Since the plant was in Mode 5 (temperature less than 200F), there can be no steam in the steam lines. Thus, the receipt of a Low Steam Line Pressure Safety Injection signal while the plant was in Mode 5 was invalid.

"It was determined that the SI Block was removed due to a degraded Steam Line Pressure SI Block/Reset switch on the control room benchboard. Further troubleshooting detected a similar erratic type degradation on the Train A Pressurizer SI Block switch. Both switches were replaced.

"This event is reportable pursuant to 10 CFR 50.73(a)(2)(iv)(A) since it involved an actuation of the Reactor Protection System (RPS) per 10 CFR 50.73(a)(2)(iv)(B)(1), an Emergency Core Cooling System (ECCS) pump per 10 CFR 50.73(a)(2)(iv)(B)(3), and an Emergency Diesel Generator (EDG) per 10 CFR 50.73(a)(2)(iv)(B)(8). However, pursuant to 10 CFR 50.73(a)(1), this event is being reported via this telephone notification, instead of submitting a written Licensee Event Report, since the automatic actuation of the RPS, ECCS Pump and EDG was not generated by a valid actuation."

The licensee notified the NRC Resident Inspector.

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## **NUCLEAR: A 'robust' new fuel supply for nuclear power plants is emerging (05/04/2009)**

### **John J. Fialka, E&E reporter**

PIKETON, Ohio -- A group of U.S. engineers and technicians sat down one day in 2001 to figure out where the nation's future nuclear power plant fuel was going to

come from. Their decision was to leap backward 30 years and re-engineer an idea perfected during the Cold War and then abandoned here in 1985.

The technology -- an ultra-high-speed, 40-foot-high centrifuge that can produce enriched uranium -- was hunted down in government archives. At first, it was an adventure in industrial archaeology. "All the drawings and the specs were in a vault at [the National Laboratory] at Oak Ridge [Tenn.]," explained Daniel W. Rogers, who became general manager of the resurrected program. "We spent a year looking at them."

#### SPECIAL SERIES



The second of a four-part series examining the future of nuclear power and how climate change presents some new opportunities for the industry, though serious political and financial challenges lie ahead.

Nearly everything had changed since President Reagan canceled the \$3 billion centrifuge program on the fateful day of June 16, 1985. Then, the United States was by far the world's leader in nuclear-generated electricity. It dominated the world market in the enriched uranium fuel that nuclear power plants 'burn' to make steam and then electricity.

But Reagan and his advisers were smitten with a more futuristic technology, one that used lasers to solve the enrichment problem, which requires separating the power-producing isotope of uranium -- called U-235 -- from its close cousins in uranium feedstock. By 2001, much of the U.S. nuclear industry was in shambles or being sold in pieces to foreign companies. U.S. dominance of the world nuclear fuel market had begun to wane. The U.S. Department of Energy concluded that laser-isotope separation wasn't commercially feasible. And a number of experts had begun to convince the Bush administration that a "nuclear renaissance" was needed, both for U.S. energy independence and to show other nations a plan to reduce greenhouse gas emissions. Rogers, a stocky engineer who was present at both the death and the rebirth of the U.S. centrifuge, still recalls

the "extreme shock" in 1985, when 2,500 employees at work here on the centrifuge project were told that its budget was canceled. He also remembers when the experts reached the conclusion in 2001 that the United States should make another try. Most of the men in the room who knew much about the centrifuge program were in their seventies.

**The 'American centrifuge' is fast, but it's in a race**

But now the first prototypes of that centrifuge, called the "American centrifuge," are up and running. A new generation of engineers hover over their computers, making the refinements needed to produce an estimated 11,500 of the machines by 2012 to form what engineers call a "cascade," or a plant that produces enriched uranium.

Rebuilt with super high-strength carbon fiber components and fashioned by computers and robotics not even imagined in 1985, the machine is the U.S.-built centerpiece for a high stakes, five-way race to see who will dominate the globe's nuclear fuel business.

Its sponsor is USEC Inc., the private, Bethesda, Md.-based company that was spun out of the U.S. Department of Energy's old uranium enrichment program in 1998. If USEC succeeds in getting a \$2 billion loan guarantee from the Department of Energy, it says it will build "the most advanced uranium enrichment machine in the world." The company says it has already signed up 10 customers for the plant that want \$3.3 billion worth of fuel.



A specially built transporter carries prototypes of the U.S.-designed uranium enrichment centrifuge at the American Centrifuge complex at Piketon, Ohio. Photo courtesy of USEC Inc.

planet might seem bizarre to some, but it is one of the banners USEC is waving. If the United States could capture a good chunk of the growing global nuclear fuel market, the company says, the result would be "more than one million" high-paying jobs, and USEC insists they will be green jobs. "Nuclear power is the world's largest energy source that does not emit greenhouse gases," the company notes in a pamphlet touting "The American Centrifuge."

The competition USEC faces, both here and abroad, is formidable. Three competitors with foreign connections are setting up operations here to compete directly with USEC for the U.S. nuclear fuel. In addition, Russia -- which currently supplies about half of the U.S. nuclear fuel market with uranium fuel whose enrichment is blended down from dismantled nuclear weapons -- has its

According to the nuclear industry, there are at least 60 new nuclear power plants either under construction or being planned around the world. USEC, which currently produces the nuclear fuel that feeds about a third of the world's nuclear plants and half of the U.S. market, will be in a fight to keep market share as the world's demand for nuclear fuel expands. The idea that a technology first developed for nuclear weapons might save the

own global nuclear market ambitions.

### **Spinning from weapons programs into commerce**

Experiments to transform uranium into a gas and then spin it in a centrifuge to capture the lighter U-235 isotope were begun first in the United States and developed by the government during the 1960s as the successor to an older and much more energy-intensive technology called gaseous diffusion that was developed during World War II. However, the uranium centrifuge process was first commercialized for power plant fuel in Europe by Urenco, a consortium of Dutch, German and British companies and government-owned entities. Meanwhile, Russia developed its own centrifuge program.

Urenco, operating under the name of Louisiana Energy Services, is building a uranium enrichment plant in Eunice, N.M. According to Gregory Smith, the chief operating officer of LES, the so-called "National Enrichment Facility" will be capable of supplying about half of the U.S. domestic requirements for nuclear power plant fuel.

In order to keep up with \$29 billion worth of orders for nuclear fuel worldwide, in November, the company decided to double the size of its emerging U.S. plant. "It's all about price and reliability," explained Smith, who said the new plant, which may begin operations this year, has enough orders to keep it running at 100 percent capacity to 2016.

Areva Inc., the U.S. subsidiary of a French-owned company, announced late last year that it will build a \$2 billion enrichment facility near Idaho Falls, Idaho. The company predicts it will be running by 2014. "The world is back on nuclear, and the U.S. will be, too," explained Jacques Besnainou, president of Areva Inc.

The French company, which uses a variant of the Urenco centrifuge, will need licenses to operate in the United States, and it is busy trying to show U.S. and state officials that the plant and many of its suppliers will create jobs in the United States. "We are going to bring everything here," added Besnainou.

### **A U.S.-Japanese-Canadian-Australian entry**

General Electric has contracts with U.S., Japanese and Canadian firms to use an Australian process to enrich uranium with lasers. Because it operates on molecules rather than on atoms, the technology differs from the

failed U.S. laser enrichment program. GE plans to test it at a facility in Wilmington, N.C., and has tentative plans to start a commercial facility as early as 2012.



The circled group of buildings above is where USEC's "American centrifuge" is being built. The mammoth, L-shaped building group in the foreground is the Department of Energy's uranium enrichment plant. Built during the 1950s, it is now shut down. Photo courtesy of the U.S. Department of Energy.

more U-235 out of old uranium mining and processing wastes, which are called uranium "tails." The United States has a great abundance of them. While other parts of the picture of a nuclear "renaissance" may still seem somewhat murky, industry officials are elated about future fuel supplies. "With four planned new enrichment facilities in the works, we are approaching a robustness of fuel supplies that we have not seen in decades," said Alex Flint, senior vice president for government affairs at the Nuclear Energy Institute. Thomas Neff, a senior researcher at the Massachusetts Institute of Technology who has followed the nuclear fuel industry for 30 years, is not that sanguine. He worries that not all these timetables will work out, and that there could be a fuel shortage as early as 2013, when the Russian government has said it will pull out of the U.S. market. Russia wants to use its uranium fuel to feed a growing internal need for nuclear fuel and to compete in

If it works, the laser enrichment process could open up vast new supplies of enriched uranium because, unlike centrifuge technologies, lasers might be able to extract

other rapidly growing nuclear markets, such as India and China.

The end of the fabled "Megatons to Megawatts" deal, which Neff helped inspire, will leave a big hole in the U.S. market. Neff is particularly skeptical of USEC's ability to compete in the future enrichment market, where he thinks it could be underpriced by more advanced competitors.

That could leave the United States, the pioneer of both centrifuge enrichment and the nuclear power plant, without a totally domestic source of enriched fuel.

Referring to the 40-foot-high centrifuges, dredged out of past U.S. experiments and much larger than either the Russian or the European versions, Neff worries they may prove to be too expensive to compete.

"The other problem with these 40-foot monsters is that nobody knows how long they will last," he adds. Still, Neff and others involved with the nuclear fuel cycle have difficulty seeing a coherent U.S. energy policy without a future nuclear component.

Manufacturing the materials for photovoltaic solar arrays and durable wind turbines will require a large amount of electricity, and nuclear power is the only relatively clean energy source Neff sees as being capable to meet that demand. "Nuclear is the bridge to that future."

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## **NUCLEAR POWER: Senate GOP to offer plan for industry incentives, reprocessing (05/05/2009)**

### **Katherine Ling, E&E reporter**

The top Republican on the Senate Energy and Natural Resources Committee will offer an amendment to create incentives to build new nuclear reactors and reprocessing facilities at tomorrow's markup of comprehensive energy legislation.

Sen. Lisa Murkowski's (R-Alaska) amendment would increase incentives for the construction of new nuclear units by expanding the production tax credit offered in the 2005 Energy Policy Act from 6,000 megawatts to 12,000 megawatts. That would allow about 10 more reactors to benefit from the incentive. It would also create a 10 percent tax credit for construction

expenditures for advanced nuclear reactors, according to Murkowski's office.

It would create a cost-share program with DOE for the licensing and engineering design for two full-scale reprocessing facilities, he said.

The amendment will be offered during tomorrow's marathon markup session the committee will hold to consider legislation on nuclear waste, transmission siting and a clean energy finance administration that will eventually be a part of a comprehensive energy bill (*E&E Daily*, May 4).

A revised **draft** from Chairman Jeff Bingaman (D-N.M.) released today gives an 11-member commission selected by the president two years to study solutions to handle the nation's nuclear waste and the review of the Yucca Mountain selection and site characterization for "lessons learned" for future projects.

But it also would have the commission determine measures "necessary or advisable" to support industry efforts to obtain a license for spent nuclear fuel reprocessing from the Nuclear Regulatory Commission, explore the option of placing nuclear waste management in a private corporation or other federal entity, and examine management of the Nuclear Waste Fund. Murkowski's alternative would include more "timelines and targets" for a commission, an advisory council for the secretary of the Energy Department including industry perspectives, and a working group chaired by the DOE secretary, and it would make sure the Nuclear Regulatory Commission review of DOE's license for the Yucca Mountain site is fully funded, said Robert Dillon, a spokesman for Murkowski.

"I think a blue-ribbon commission kicks the can down the road in terms of nuclear policy," Murkowski said. "What the chairman is proposing with his blue ribbon commission is just 'We are going to continue to study this.' Well, we have been studying this for 20 years. The issue is still unresolved, and from the industry's perspective, that is not encouraging," she said.

Murkowski said the more comprehensive approach to nuclear energy would create a more "meaningful" comprehensive energy bill.

"I think it is imperative that we offer more in terms of a policy statement on where we go with nuclear in this

country," she said. "We want to advance something that states very clearly that nuclear is a part of that policy, and we need to be up-front and rational about how we deal with the waste issues."

There also may be an amendment tomorrow from Sen. John McCain (R-Ariz.) dealing with taxpayer liability issues and refunding fees that consumers have paid into the Nuclear Waste Fund to construct a geologic repository. McCain, however, may miss the markup if the Senate is debating the Defense Department procurement bill at the same time.

[Click here](#) to read the revised draft.

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### **YUCCA MOUNTAIN: Obama budget means Nev. repository is 'history' -- Reid (05/07/2009)**

#### **Katherine Ling, E&E reporter**

The Obama administration delivered on its promises to help end the nuclear waste repository at Yucca Mountain, Nev., dropping the project's budget to \$197 million, Senate Majority Leader Harry Reid (D-Nev.) said yesterday.

"Yucca Mountain is history," Reid said at a League of Conservation Voters event last evening. Reid said he had just left a meeting with Office of Management and Budget Director Peter Orszag who had shown Reid evidence of the project's demise. Obama's budget will officially be released today.

The \$197 million would be spent on a "blue ribbon commission" study of alternative management solutions for the nation's spent nuclear fuel and winding down work at the site, according to a statement from Reid's office. Energy Secretary Steven Chu has said he would like the Nuclear Regulatory Commission to continue its review for the DOE license for Yucca Mountain, so there is likely to be money in NRC's budget to continue that activity as well.

Senate Energy and Natural Resources Chairman Jeff Bingaman (D-N.M.) has circulated a draft bill that would form a commission to study solutions to handle the nation's nuclear waste -- including deep geologic repository, long-term storage on site, long-term storage

at regional sites, and reprocessing -- and a review of the Yucca Mountain project for "lessons learned" for future projects. The commission would also explore commercializing reprocessing, placing waste management in the hands of a private corporation or another federal entity, and the management of the Nuclear Waste Fund. The demise of the repository at Yucca Mountain has left nuclear energy supporters uncertain as to what will happen to the 17 applications for new reactors before NRC. The commission has determined that the spent nuclear fuel assemblies can safely be stored on-site for about 100 years and are considering extending that to 120 years.

But that may not be good enough, according to Sen. Lisa Murkowski (R-Alaska), ranking member of the Energy and Natural Resources Committee. She and several other pro-nuclear senators have repeatedly criticized the administration's decision to cancel Yucca without having an alternative for the waste already in place.

Murkowski said forming a "blue ribbon commission" to study alternatives is just "kicking the can down the road." The solutions have been studied for 20 years and the issue is still unresolved, which is detrimental to the industry, Murkowski said (*E&ENews PM*, May 5).

There are also questions of liability. DOE has already paid tens of millions of dollars to utilities for partial breach of contract for not taking the waste starting in 1998. By 2020 the liability is likely to reach \$11 billion, growing about \$500 million for every year a solution is delayed after that, according to DOE. There is also defense waste that was slated to go into the repository that DOE is responsible for sitting in several states around the nation. Plus there is more than \$20 billion in fees that consumers of nuclear-generated electricity have paid into the Nuclear Waste Fund. Some senators, including Sens. John McCain (R-Ariz.) and Lindsay Graham (R-S.C.), want the government to refund at least some of the fees back to consumers if Yucca is canceled.

*Senior reporter Darren Samuelsohn contributed.*

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**NUCLEAR WASTE: U.S. Chamber supports 'all options' for storage, management (05/27/2009)**

### **Katherine Ling, E&E reporter**

The United States should pursue reprocessing technology to close the nuclear fuel cycle and begin the siting process for interim waste storage locations, given the current uncertainty surrounding U.S. nuclear waste policy, according to a U.S. Chamber of Commerce report released today.

While the **report** says siting a repository at Yucca Mountain, Nev., should still be an option and the Nuclear Regulatory Commission's review of the Energy Department's license should be fully funded and move forward, it also says, "America has the opportunity to put all options on the table."

President Obama proposed in his budget request released this month to reduce funding for the Yucca Mountain project to minimal levels and instead establish a "blue-ribbon commission" to explore alternative solutions for waste management. Obama's budget proposal and other changes show that "it is timely to review the country's waste policy given that many of the facts, conditions, and assumptions that were in place in 1982 when the current policy was crafted are no longer accurate or germane," the report says.

The blue ribbon panel should have clear goals and timelines "so it is not open-ended," said Christopher Guith, the vice president for policy of the chamber's Institute for 21st Century Energy. The report's recommendations closely parallel issues in a nuclear waste bill offered by Sen. Jeff Bingaman (D-N.M.), although the two policies were drafted independently, Guith said (*E&E Daily*, May 20).

The United States should begin to pursue reprocessing and recycling now because it will take two to three decades to license, finance, develop and deploy advanced technologies, the report says.

"It is conceivable that the country's nuclear power generation could double by 2050 to meet climate change concerns as well as expected demand growth," it says. "If we do not set out on the path to close the fuel cycle today, we will find ourselves with significantly more used fuel. The previous three decades have demonstrated the difficulty in constructing a single permanent repository. How difficult will it be to site additional repositories as our once-through fuel cycle produces used fuel at twice the

rate?"

The report also recommends that waste management be moved to a fully funded, independent outside government entity, "removing some of the day-to-day politics and uncertain annual appropriations that invariably affect this role," and that the government begin siting interim storage facilities (the exact number is open to debate, Guith said) and reconsider if the waste should be retrievable so other geologic formations, such as salt, could be considered "with fewer political, regulatory, scientific, or economic obstacles."

Lawmakers should also consider placing future fees that nuclear electricity consumers have been paying into the Nuclear Waste Fund to finance final waste disposal into a private escrow account instead of allowing it to be used to offset general government debt, the report says. The fee system itself also should be reassessed, it adds.

[Click here](#) to view the report.

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### **UTILITIES: Exelon's Howes discusses Waxman-Markey bill, role of nuclear in U.S. energy policy** *(05/27/2009)*

How does the nation's largest electric and gas utility view the climate and energy legislation that is making its way through the House? During today's OnPoint, Helen Howes, vice president of environment, health and safety at Exelon, gives her company's take on the Waxman-Markey climate and energy bill and the effect it will have on utilities. Howes also assesses the Obama administration's approach to handling nuclear power as part of the energy policy puzzle.

[Click here](#) to watch today's OnPoint.

**Monica Trauzzi:** Welcome to the show. I'm Monica Trauzzi. Joining me today is Helen Howes, vice president of Environment Health and Safety at Exelon. Helen, it's great to have you on the show.

**Helen Howes:** Thank you for having us here.

**Monica Trauzzi:** Helen, things are moving quickly in the House on a climate and energy package.

**Helen Howes:** Absolutely.

**Monica Trauzzi:** What is Exelon's take on the Waxman-Markey draft as it stands now, the targets it establishes and how it treats utilities?

**Helen Howes:** I am amazed at how quickly things are moving.

We are very optimistic that the bill will come out of committee. We like the targets and timetables. I suspect there might be a little reduction in some of the earlier reductions that are being proposed. We think it's important for a piece of legislation to move forward. I think utilities will be treated reasonably well. We represent something like 40 percent of the greenhouse gas emissions in the U.S. Clearly, we're interested in some allocation of allowances. The numbers we're hearing sound reasonably fair.

**Monica Trauzzi:** So, how does this compare to what the U.S. Climate Action Partnership proposed and do these targets meet sort of what you were thinking back then?

**Helen Howes:** I think it's definitely in the range. The 2020 number might be a little lower than the U.S. Climate Action Partnership, I tripped over that one, but I think generally speaking the targets and the timetables are very close, well within range.

**Monica Trauzzi:** You mentioned the allocation of allowances and this is obviously something that's up for debate, heated debate ...

**Helen Howes:** Absolutely.

**Monica Trauzzi:** ... who should handle keeping consumer prices down. So really, should it be the utilities who are given that responsibility or should the government be handling that in some way through tax credits?

**Helen Howes:** I think it's going to be a combination of factors. Our preference is that the allowances be allocated to the distribution utilities, so the local company from whom people buy their electricity. Our view is they're closest to the consumers. Consumers will definitely be paying a higher price of electricity with a carbon price included in the price. What we think the attractiveness of the distribution to the distribution companies or allocation of allowances to the distribution companies is there already is a regulatory framework, the public utility commissions. And they can ensure that the dollars that are made from the sale of the allowances can then come back to customers either through rebates, potentially low income programs, additional energy efficiency, something that will help customers manage what is likely to be higher electricity prices.

**Monica Trauzzi:** Both the House and Senate have seemingly lowered their original targets for a renewable electricity standard and Exelon CEO John Rowe has talked about sort of a five-tier approach to handling energy policy. Does the RES help reach those goals that he has laid out and established?

**Helen Howes:** I think our focus on Waxman-Markey was clearly on the title dealing with climate change. On the renewable side of things I think the view of the company is the

initial target was a little high anyway. I think we're comfortable with more of a 15 percent. We recognize renewables has to be part of a low-carbon future. It's got to be part of the generation mix, so we're supportive of renewable energy standards.

**Monica Trauzzi:** You're also very supportive of nuclear energy. It plays ...

**Helen Howes:** What a surprise!

**Monica Trauzzi:** ... a big role in your business strategy.

**Helen Howes:** Absolutely.

**Monica Trauzzi:** Your company is the largest nuclear power producer ...

**Helen Howes:** That's correct.

**Monica Trauzzi:** ... in the U.S. What's your take on how the administration and the Democratic leadership have spoken about and handled nuclear so far?

**Helen Howes:** I think there is an acknowledgment clearly that nuclear has to be part of the solution going forward. It's a low-carbon generation source. Twenty percent of the electricity in the U.S. currently is produced from nuclear power. It has to be part of the options. I think the challenges going forward will be how do deal with some of those more difficult issues like Yucca Mountain and dealing with ways going forward. But from all evidence that we've seen, there's an acknowledgment by the administration that nuclear has to be part of the equation going forward.

**Monica Trauzzi:** So, what needs to happen legislatively then, I mean because we're sort of hearing two separate things, nuclear needs to play a role, but at the same time Yucca is being shot down.

**Helen Howes:** Right, it means we'll look for other options. We'll look for other options for the long-term storage of used fuel. Yucca Mountain was, from our perspective, a pretty attractive option. Clearly, customers have paid towards the establishment of Yucca Mountain, but if there is no Yucca Mountain, we will look for another option and we will work with DOE and others to find another option.

**Monica Trauzzi:** Exelon has taken some big steps in reducing its own emissions ...

**Helen Howes:** Absolutely.

**Monica Trauzzi:** ... and improving energy efficiency. What are your short-term and long-term plans on those two fronts and as you develop these ideas and these business practices, are you keeping certain targets in mind for a cap and trade?

**Helen Howes:** Absolutely, but we established a goal under the Climate Leaders Program in May of 2005. And at that time our goal was an 8 percent reduction from a 2001 baseline. So that was roughly 1.3 million metric tons and we thought that was a

pretty aggressive goal and the EPA also agreed it was a pretty aggressive goal. We achieved more than a 35 percent reduction in our own greenhouse gases by the end of 2008. So that's equivalent of 6 million metric tons. So we certainly exceeded that goal and are very proud of ourselves in doing so. Additionally though we launched, last year, Exelon 2020, which is our roadmap to a low-carbon future and it's a combination of reducing our own emissions, working with our customers to help them reduce their emissions and also ensuring that there is low-carbon generation into the markets that we operate in. So the low-carbon generation would be everything from additional renewables to nuclear upgrades.

**Monica Trauzzi:** Final question here, is enough being done in the U.S. on the conservation and energy efficiency fronts? There's been talk about creating this national energy efficiency standard.

**Helen Howes:** Sure.

**Monica Trauzzi:** Is that the way to go?

**Helen Howes:** It could be. Right now the two states that we operate in, Pennsylvania and Illinois, we do have energy efficiency standards. Our utilities are delivering customer based energy efficiency or customer focused energy efficiency programs. I think that will go a long way. And the federal standard, there's lots of details to work out, but clearly there are some states that could benefit from an additional push in the energy efficiency area. We're already working on it very hard.

**Monica Trauzzi:** OK, we'll end it right there. Thank you for coming on the show.

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