

To: Jim Mehl, ERSIS Manager
From: Zack Clayton, Rad Coordinator
Subject: March Monthly Report
Date: April 5 , 2016

Beans

Training: 1
Drills: 0
Meetings: 7
Technical Assistance: 7
Public Assistance: 3

Web Page Views: There were 49 page views in March.

Radiological Safety Program Pages: <http://epa.ohio.gov/derr/ersis/er/rad.aspx>

Coming Attractions

4/6 IREP Power Group
4/6 IREP Intermediate Phase Planning
4/7 IREP Technical Group
4/11 URSB
4/12-14 RAT Training At Lake County
4/13 IREP
4/14 NEPAC
4/27 IREP Non-Power Group
5/4 IREP Power Group
5/4 IREP Intermediate Phase Planning
5/5 IREP Technical Group
5/11 IREP
5/13 FMT Controller Training
5/17 Beaver Valley Full Scale Dry Run
6/14 Beaver Valley Full Scale Evaluated Exercise

Facility updates

Davis-Besse Nuclear Power Station

Davis-Besse started March in coast down to its refueling outage, which began March 26.

Davis-Besse Nuclear Power Station (DBNPS) provided a March 15 update on the elevated levels of tritium in ground water that were first detected on February 3, 2015. The sample results for December reported 5 of the 8 samples were above the 2000 picocuries of tritium per liter (pCi/L) reporting threshold. The highest result reported was 4477 pCi/L. The sample results are fairly steady in comparison to December's sampling results. Monitoring wells 20S and 21S exhibited the most change. MW-20S decreased by 717 pCi/L while MW-21S increased by 643 pCi/L.

The limit for tritium in drinking water is 20,000 pCi/L. DBNPS reports sample results whenever the activity is greater than 2000 pCi/L. Plant personnel have not found any evidence of an active leak. The next round of sampling will take place in April and will include all the wells that are part of the voluntary Ground Water Protection Initiative that the plant participates in.

On March 30, 2016, at 1715 EDT, with the Unit shutdown and in Mode 6 for refueling, evidence of leakage was identified on a 3/4-inch flexible braided piping connection on Reactor Coolant Pump (RCP) 1-1, and this issue was determined to be reactor coolant system pressure boundary leakage. The cause and resolution to the leakage is being determined. See Event number 51837.

Perry Nuclear Power Plant

Perry operated at full power for the month.

Beaver Valley Power Station

Beaver Valley Unit I

Unit I operated at full power for the month.

Beaver Valley Unit II

Unit II operated at full power for the month.

DTE

Fermi II

Fermi II started the month at reduced power to repair a heater drain. The plant ramped up to full power on the 3rd, and operated at full power for the rest of March.

On January 6, 2016, at approximately 1514 EST, the East and West Turbine Bypass Valves (TBVs) automatically opened for 3 minutes and 32 seconds in response to High Pressure. The incident was initially misclassified as the Valves were not declared inoperable. After a similar event the incident was reported to the NRC in March as it could have prevented the fulfillment of a safety function of structures or systems. See Event number 51755.

On February 21, 2015, at approximately 0030 EST, with Fermi 2 in Mode 1 operating at 100 percent reactor thermal power, the West Turbine Bypass Valve (TBV) automatically opened in response to High Pressure. This event was reported at the time, but an additional analysis indicated the report should include that it could have prevented the fulfillment of a safety function of structures or systems. See Event number 51756.

Fermi III

There was no activity reported for Fermi III

Portsmouth Enrichment Plant

There was no activity reported for the Portsmouth site.

Other Sites

PSC, a Massillon scrapyards received a load of material from a facility in Pennsylvania on or just prior to February 25. REAC/TS and RAP Region 5 were notified, and assistance was requested from ODH on February 26. The contaminated load did not alarm the monitor leaving the PA facility and was determined to have radioactive material when it was received at Massillon. An employee at the site removed some of the load, particularly a 226 Radium source fragment and brought it into the Admin Building at PSC. This caused contamination to the facility, the employee and his property, and potentially to other employees of the facility, visiting personnel from other offices, and vendor equipment that was onsite. The REAC/TS team found limited contamination as of 2/29. Contamination may have spread to several other states from the visiting personnel. Further testing by ODH did identify other potentially contaminated personnel and that is under analysis.

The Ohio EPA RAT team was put on standby over the weekend of March 5 to assist ODH in monitoring activity, but was not requested. Other facilities in Canton and Mansfield also received contaminated shipments but did not have removal and issues of subsequent contamination from the material. 226 Radium is a strong alpha and gamma emitter.

Bob Princic (NEDO) and Zack Clayton reviewed the draft Decontamination Plan and submitted comments on March 24 to Bill Palmer at his request. These were forwarded on to ODH by Mr. Palmer. Zack Clayton attended a teleconference on March 28 with NEDO, ODH, and USEPA that answered most of the questions raised in the review. Zack, Bob, Jennifer Kurko (NEDO), and Kurt Princic (NEDO) held an additional teleconference to confirm that OEPA had no further question to the surface decommissioning plan and Zack prepared a letter to ODH to confirm that OEPA had no further concerns with the decon plan. See Event number 51753.

Activity

- 3/2 IREP Power Group - Plant updates, agency power activity updates, and exercise planning. RAT Training 4/12-14 at Lake County, and FMT Controller Training were discussed. Issues for exercise controllers were resolved due to the in-sequence play that is being done for this exercise.
- 3/2 IREP Intermediate Phase - Lessons learned from the Fukushima Dai Ichii release are beginning to come into focus as the most similar reactor type accident to US light water reactors that might happen here. The 10-point sampling plan was discussed and will be written into SOPs and the Plan as a best practice. Confirmatory sampling will be planned with a different tool set.
- 3/8 IREP Tech - Debrief of the RadResponder Train the Trainer class and associated pre teleconference. Discussion of sampling strategy for FMT and Post Plume phases. Discussion of the work flow for those teams in light of use of RadResponder.
- 3/9 IREP - The general meeting for all aspects of State Rad Planing and response. Agency Reports, and discussion of the October exercise. A teleconference was planned for further work on this. - ODH gave an update on the PSC Metals contamination event. The group discussed lessons learned from the response to date for this. See Other Sites under the Facilities update section.
- 3/15 Beaver Valley Systems training – Bi-annual pre exercise rundown of the plant systems and Emergency Action Levels. Two new staff from OEPA were at this along with several who would be involved in exercises or events.
- 3/25 IREP Non Power Planning – detailed run through of the ESF-10 appendix to the State Plan and the changes that ODH and OEPA are recommending be included. An SME Task Force for advising the EOC desk is at the heart of many of these changes, for this purpose, a

Radiological Task Force, but it would change for chemical, biological, and other materials as needed.

Office Issues

Several incidents involving radiation/ radioactive contamination from non-nuclear power businesses came in during the month. Procedures are being developed to address response and establish payroll for future events.

Statistics, NRC Reports, News, and ADAMS References

Operating Power Levels

March

Date	BV1	BV2	DB	Perry	Fermi2	
1	100	100	85	100	58	Fermi – loss of heater drain flow
3	100	100	85	100	75	Fermi – repairs complete, increasing power
7	100	100	81	100	100	DB – coast down to RFO
14	100	100	79	100	100	
21	100	100	74	100	100	
26	100	100	0	100	100	DB – start refueling outage
28	100	100	0	100	100	
31	100	100	0	100	100	

Event Reports

Power Reactor	Event Number: 51755
Facility: FERMI Region: 3 State: MI Unit: [2] [] [] RX Type: [2] GE-4 NRC Notified By: DEREK ETUE HQ OPS Officer: JOHN SHOEMAKER	Notification Date: 02/25/2016 Notification Time: 16:35 [ET] Event Date: 01/06/2016 Event Time: 15:14 [EST] Last Update Date: 03/02/2016
Emergency Class: NON EMERGENCY 10 CFR Section: 50.72(b)(3)(v)(A) - POT UNABLE TO SAFE SD 50.72(b)(3)(v)(D) - ACCIDENT MITIGATION	Person (Organization): ANN MARIE STONE (R3DO)

Unit	SCRAM Code	RX CRIT	Initial PWR	Initial RX Mode	Current PWR	Current RX Mode
2	N	Y	100	Power Operation	91	Power Operation

Event Text

POWER REDUCTION DUE TO AUTOMATIC OPENING OF THE TURBINE BYPASS VALVES

"On January 6, 2016, at approximately 1514 EST, with Fermi 2 in Mode 1 operating at 100 percent reactor thermal power, the East and West Turbine Bypass Valves (TBVs) automatically opened for 3 minutes and 32 seconds in response to the number one High Pressure Turbine Stop Valve (TSV) drifting from full open to 25 percent open. Reactor power was subsequently lowered to 91.0 percent reactor thermal power and the bypass valves closed.

"Per Technical Specification Bases 3.3.1.1, TBVs must remain shut while reactor thermal power is at or above 29.5 percent to consider the TSV closure and Turbine Control Valve (TCV) fast closure Reactor Protection System (RPS) functions operable. The condition was recognized at the time of the event and the RPS functions were not declared inoperable since the functions were verified to remain enabled.

"Since the RPS functions were not declared inoperable, Fermi 2 did not report this event within 8 hours of occurrence. However, after further evaluation, it was determined that this event met the reporting criterion. Accordingly, this event is being reported pursuant to 10 CFR 50.72(b)(3)(v)(A).

"The licensee informed the NRC Resident Inspector."

The cause of the High Pressure Turbine Stop Valve drifting was due to an actuator malfunction that has since been corrected.

This event was determined to be reportable at 1200 EST on 02/24/16. See EN #51756 for a similar event that occurred on 02/21/16.

* * * UPDATE FROM JEFF GROFF TO STEVEN VITTO ON 03/02/2016 AT 1530 EST * * *

"Upon further review, it was determined that this event also meets the reporting criterion of 10CFR50.72(b)(3)(v)(D) for a condition that could have prevented the fulfillment of a safety function of structures or systems that are needed to mitigate the consequences of an accident.

"Although this event was determined to be reportable at 1200 EST on 02/24/16, it met the reporting requirement on the date of the event (01/06/2016).

"The licensee informed the NRC Resident Inspector."

Notified R3DO (Valos).

Power Reactor	Event Number: 51756
Facility: FERMI Region: 3 State: MI	Notification Date: 02/25/2016 Notification Time: 16:35 [ET]

Unit: [2] [] [] RX Type: [2] GE-4 NRC Notified By: DEREK ETUE HQ OPS Officer: JOHN SHOEMAKER	Event Date: 02/21/2015 Event Time: 00:30 [EST] Last Update Date: 03/02/2016
Emergency Class: NON EMERGENCY 10 CFR Section: 50.72(b)(3)(v)(A) - POT UNABLE TO SAFE SD 50.72(b)(3)(v)(D) - ACCIDENT MITIGATION	Person (Organization): ANN MARIE STONE (R3DO)

Unit	SCRAM Code	RX CRIT	Initial PWR	Initial RX Mode	Current PWR	Current RX Mode
2	N	Y	100	Power Operation	91	Power Operation

Event Text

POWER REDUCTION DUE TO AUTOMATIC OPENING OF A TURBINE BYPASS VALVE

"On February 21, 2015, at approximately 0030 EST, with Fermi 2 in Mode 1 operating at 100 percent reactor thermal power, the West Turbine Bypass Valve (TBV) automatically opened in response to the number two High Pressure Turbine Stop Valve (TSV) cycling from full open to closed and then to 22 percent open. Reactor power was subsequently lowered to 91.5 percent reactor thermal power and the bypass valve closed.

"Per Technical Specification Bases 3.3.1.1, TBVs must remain shut while reactor thermal power is at or above 29.5 percent to consider the TSV closure and Turbine Control Valve (TCV) fast closure Reactor Protection System (RPS) functions operable. The condition was recognized at the time of the event and the RPS functions were declared inoperable. The Limiting Condition for Operation was exited at 0031 EST following TBV closure.

"Since the RPS functions were verified to remain enabled, Fermi 2 did not report this event within 8 hours of occurrence. However, this event was subsequently determined to meet the reporting criterion and is being reported pursuant to 10 CFR 50.72(b)(3)(v)(A).

"The licensee informed the NRC Resident Inspector."

The cause of the High Pressure Turbine Stop Valve cycling was due to a communication card failure that has since been corrected.

This event was determined to be reportable at 1200 EST on 02/24/16. See EN #51755 for a similar event that occurred on 01/06/16.

*** UPDATE FROM JEFF GROFF TO STEVEN VITTO ON 03/02/2016 AT 1530 EST ***

"Upon further review, it was determined that this event also meets the reporting criterion of 10CFR50.72(b)(3)(v)(D) for a condition that could have prevented the fulfillment of a safety function of structures or systems that are needed to mitigate the consequences of an accident.

"Although this event was determined to be reportable at 1200 EST on 02/24/16, it met the

reporting requirement on the date of the event (02/21/2015).

"The licensee informed the NRC Resident Inspector."

Notified R3DO (Valos).

Agreement State	Event Number: 51753
Rep Org: PA BUREAU OF RADIATION PROTECTION Licensee: UNKNOWN Region: 1 City: BEAVER FALLS State: PA County: License #: Agreement: Y Docket: NRC Notified By: JOE MELNIC HQ OPS Officer: STEVE SANDIN	Notification Date: 02/24/2016 Notification Time: 15:10 [ET] Event Date: 02/22/2016 Event Time: [EST] Last Update Date: 02/24/2016
Emergency Class: NON EMERGENCY 10 CFR Section: AGREEMENT STATE	Person (Organization): MARC FERDAS (R1DO) ANN MARIE STONE (R3DO) ANGELA MCINTOSH (NMSS) NMSS_EVENTS_NOTIFIC (EMAI)

Event Text

AGREEMENT STATE REPORT - UNPLANNED CONTAMINATION AT METAL RECYCLING FACILITY

The following information was provided by the Commonwealth of Pennsylvania via fax:

"Notifications: The non-licensee discovered the event on February 23, 2016 and notified the Ohio Department of Health, who then notified our Department [PA Bureau of Radiation Protection] after normal business hours on the same evening. It is reportable per 10 CFR 30.50(b)(1)(i) and 20.2201(a)(i).

"Event Description: On Monday, February 22, 2016, a large orphan radium-226 (Ra-226) source of unknown total activity or origin was shredded at the PSC Metals facility in Beaver Falls, PA. The recycled material was then shipped to two different Ohio facilities where it was discovered during an inbound radiation scan on February 23, 2016.

"Cause of the Event: The Pennsylvania facility was [apparently] not performing outbound gamma radiation surveys on recycled materials.

"Actions: The contaminated shredder, with gamma radiation levels of over 400 mrem/hr, has been isolated. The locker room, clothes, vehicles and workers have been surveyed and no contamination has been found. The gloves of two workers were found to have contamination. A reactive inspection occurred the evening of the 23rd to survey the entrance/gate area of the Beaver Falls facility, and a full emergency response occurred the morning of February 24, 2016. PA and OH Radiation Control Programs are onsite in their respective states and communicating findings. Surveys of employees, vehicles and equipment are ongoing. The

response will continue until isolation and containment of Ra-226 is ensured. A local health physics service provider has also been contracted by PSC to assist with the decontamination operation. More information will be provided upon receipt.

"Media Attention: None at this time, but OH may issue a Press Release.

"Event Report ID No: PA160007"

Part 21	Event Number: 51643
Rep Org: FISHER CONTROLS INTERNATIONAL Licensee: FISHER CONTROLS INTERNATIONAL Region: 3 City: MARSHALLTOWN State: IA County: License #: Agreement: Y Docket: NRC Notified By: GEORGE BAITINGER HQ OPS Officer: JEFF ROTTON	Notification Date: 01/08/2016 Notification Time: 16:25 [ET] Event Date: 11/11/2015 Event Time: [CST] Last Update Date: 03/11/2016
Emergency Class: NON EMERGENCY 10 CFR Section: 21.21(a)(2) - INTERIM EVAL OF DEVIATION	Person (Organization): ANTHONY DIMITRIADIS (R1DO) ANTHONY MASTERS (R2DO) KARLA STOEDTER (R3DO) VIVIAN CAMPBELL (R4DO) PART 21/50.55 REACTO (EMAI)

Event Text

PART 21 - COMMERCIAL GRADE CAP SCREWS PROVIDED WITH SAFETY RELATED FISHER TYPE 3570 POSITIONERS

The following information was provided by the reporting organization via fax:

"Pursuant to 10 CFR 21.21(a)(2), Fisher Controls International LLC ('Fisher') is providing required written interim notification of a failure to comply concerning Type 3570 positioners when provided as safety-related equipment.

"On November 11, 2015, Fisher became aware of an issue with the dedication of a Type 3570 positioner. When replacement Type 3570 positioners are ordered, the two cap screws (SAE J429 Grade 5 cap screws/size 3/8-16x1.5) used for mounting the positioner to the actuator cylinder are also included. It was not clearly communicated to the end user that these mounting cap screws are included with the positioner. Further, the dedication plan only addresses the 3570 positioner and does not include dedication of the mounting cap screws.

"As a result, these cap screws had not been dedicated on any safety-related Type 3570 positioner orders. There is no reason to believe any of the cap screws supplied were defective, only that they were not dedicated and were therefore supplied as commercial grade items. There have been no reported failures of the cap screws in question.

"An extent-of-condition investigation is underway to identify all potentially affected bolt-on

accessories. Any identified affected products will be reported per the requirements of 10 CFR 21.21 (b). This extent-of-condition review is expected to be completed by January 29, 2016.

"Corrective Action 1791 has been opened to document corrective actions taken to prevent reoccurrence.

"Should there be any further questions concerning this matter, please contact Benjamin Ahrens, Manager, Quality by email at Benjamin.Ahrens@Emerson.com or via phone at 641-754-2249.

Individual informing the NRC: Chad Engle, Director, Nuclear Business Unit, Fisher Controls International LLC, phone (641) 754-3011.

* * * UPDATE FROM GEORGE BAITINGER TO HOWIE CROUCH VIA FAX AT 1528 EST ON 2/2/16 * * *

The following information is summarized from a fax received from Emerson Process Management (Fisher Controls):

On January 22, 2016, Fisher Controls completed their extent-of-condition investigation and determined that seven of their thirty two product series have the potential to include non-dedicated cap screws and mounting studs.

The vendor plans to complete their final report within 45 days.

Notified R1DO (Rogge), R2DO (Musser), R3DO (Kozak), R4DO (Pick) and the Part 21 group via email.

* * * UPDATE FROM LYNN SANDERS TO DONG PARK VIA EMAIL AT 1749 EST ON 3/11/16 * * *

The following information is summarized from an email received from Emerson Process Management (Fisher Controls):

"The supplied instrument assemblies in question were subjected to the processing requirements of Fisher Controls FMP2K27 (Control of Commercial Grade Items to be Dedicated for Use in Nuclear Safety-Related Applications) and were supplied as safety-related components. However, Fisher supplied various mounting parts (in addition to the requested product) that were not processed under FMP2K27; thus, such parts were supplied as commercial items.

"This issue was first discovered in relation to the cap screws used for mounting a 3570 positioner (please see Interim Report dated 01/08/2016). Fisher conducted an extent-of-condition investigation to include all safety-related actuator-mounted accessories. In total, thirty-two (32) actuator-mounted item types were investigated. It is Fisher's opinion the failures to dedicate these mounting accessories do not pose an inherent safety risk.

"Additionally, there are no known field issues with respect to the affected equipment and all such non-dedicated equipment passed the required standard testing.

"Each affected customer needs to: (i) evaluate the application of each referenced item number for all respective orders; (ii) determine whether the incorrectly processed mounting parts are in violation of regulatory requirements; (iii) contact Fisher or otherwise arrange for the procurement of properly processed mounting parts for use in those applications found to be in violation. In addition, a Corrective Action Request (CAR 1791) has been initiated by Fisher to prevent reoccurrence of this issue."

Notified R1DO (Dimitriadis), R2DO (Suggs), R3DO (Riemer), R4DO (Proulx), and the Part 21 group via email.

Part 21	Event Number: 51816
Rep Org: UNITED CONTROLS INTERNATIONAL Licensee: MERSEN Region: 1 City: NORCROSS State: GA County: License #: Agreement: Y Docket: NRC Notified By: KORINA LOOFT HQ OPS Officer: DONG HWA PARK	Notification Date: 03/22/2016 Notification Time: 15:11 [ET] Event Date: 02/20/2016 Event Time: [EDT] Last Update Date: 03/22/2016
Emergency Class: NON EMERGENCY 10 CFR Section: 21.21(d)(3)(i) - DEFECTS AND NONCOMPLIANCE	Person (Organization): ROBERT DALEY (R3DO) PART 21/50.55 REACT (EMAI)

Event Text

PART 21 REPORT - DEFECTIVE FUSES

The following information is a synopsis of information received via E-mail:

"On February 20, 2016 United Controls International issued a Return Material Authorization (RMA) request to **First Energy - Perry Nuclear Power Plant**. The RMA was issued to request the return of general purpose fuses of part number OT15 that were provided to First Energy - Perry Nuclear Power Plant under purchase order 45225736. The customer identified a fuse that had intermittent electrical continuity during resistance checks. The customer performed an evaluation which included dissection of the subject fuse and the cause of the issue was identified as being due to a lack of or inadequate solder connection of the fuse element to the fuse ferrules.

"If you have any questions or wish to discuss this matter or this report, please contact:
Wesley Hickle
Engineering Manager
whickle@unitedcontrols.com
770-496-1406 x 165"

Power Reactor	Event Number: 51837
Facility: DAVIS BESSE Region: 3 State: OH	Notification Date: 03/31/2016 Notification Time: 00:14 [ET]

Unit: [1] [] [] RX Type: [1] B&W-R-LP NRC Notified By: BILL RAYBURN HQ OPS Officer: DONG HWA PARK	Event Date: 03/30/2016 Event Time: 17:15 [EDT] Last Update Date: 03/31/2016
Emergency Class: NON EMERGENCY 10 CFR Section: 50.72(b)(3)(ii)(A) - DEGRADED CONDITION	Person (Organization): PATTY PELKE (R3DO)

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

Event Text

DEGRADED CONDITION DUE TO DISCOVERY OF PRESSURE BOUNDARY LEAKAGE

"On March 30, 2016, at 1715 EDT, with the Unit shutdown and in Mode 6 for refueling, evidence of leakage was identified on a 3/4-inch flexible braided piping connection on Reactor Coolant Pump (RCP) 1-1, and this issue was determined to be reactor coolant system pressure boundary leakage. This flexible piping is for RCP 1-1 first stage seal cavity vent line, and is categorized as ASME Section III Class 2 piping. The leakage was identified due to the discovery of a small amount of boric acid (approximately 1/2 teaspoon) on the welded end connection of the flexible piping. No active leakage was identified at the time of discovery with the Reactor Coolant System depressurized and approximately 110 degrees F.

"Technical Specification (TS) Limiting Condition for Operation (LCO) 3.4.13, 'RCS Operational Leakage,' does not apply in the current plant condition (Mode 6). The cause and resolution of the leakage are under evaluation. This event is reportable within 8 hours per 10 CFR 50.72(b)(3)(ii)(A). The NRC Resident Inspector has been notified."

News

Moniz visit puts spotlight on controversial uranium company

[Hannah Hess](#), E&E reporter

Published: Tuesday, March 1, 2016

The Department of Energy's relationship with uranium enrichment company USEC Inc. will be under the microscope this week, when Secretary Ernest Moniz visits Capitol Hill to defend the agency's budget request.

Nicknamed the "United States Earmark Corporation" by critics in Congress, USEC has engaged in hundreds of millions of dollars' worth of financial transactions with DOE since it was privatized in 1998, including funding for the \$5 billion American Centrifuge Plant (ACP) project in Piketon, Ohio.

The Fiscal 2017 Budget & Appropriations Report is a one-stop resource for tracking the fiscal 2017 spending process for environmental and energy accounts. [Click here](#) to view the report.

The facility laid off 60 employees this week as Centrus Energy Corp., USEC's successor following bankruptcy, demobilized. Centrus started winding down operations last year after the Obama administration cut its contract.

Republicans who represent the job-hungry area have blasted President Obama for walking away from that project. Rep. Brad Wenstrup (R-Ohio) accused the president of "nuclear negligence" when he shunned funding for the facility in his fiscal 2017 proposal for the second year in a row.

But bigger questions loom about a new proposal for covering the cleanup costs associated with DOE's Cold War-era uranium enrichment program.

DOE has for years bartered stockpiles of excess government-owned uranium in exchange for cleanup at the nearby Portsmouth Gaseous Diffusion Plant and the down-blending of highly enriched uranium in Erwin, Tenn. The releases helped shore up USEC, but lawmakers who represent uranium-rich states say the barter hurt mining efforts ([Greenwire](#), April 22, 2015).

Moniz will be pitching a new plan to appropriators that would continue the controversial transfers while making cleanup funding mandatory. USEC grabbed attention on Capitol Hill last year when it picked former DOE Deputy Secretary Daniel Poneman as its next president and CEO. During a budget day [briefing](#) earlier this month, Moniz promised a serious discussion with lawmakers "in terms of really coming to grips with" how DOE uses the USEC funds.

'Our duty'

A proposed 10 percent boost in funds for cleanup at Portsmouth has won support from Ohio's congressional delegation. The facility, which began operating in 1954, went offline in 2001. For the next decade, DOE contracted with USEC to maintain the plant and prepare it for future decontamination and decommissioning.

"The cleanup project in Portsmouth is an important component to economic development in Southeast Ohio and ACP is critical for our national and energy security," Sen. Rob Portman (R-Ohio) said in a statement. "We will still need the Administration to ensure full funding is delivered for cleanup at Portsmouth, but proposing these resources for Portsmouth is a positive step forward."

Underscoring the importance of the project, Portman invited the president of the United Steelworkers local that represents workers in Piketon to the State of the Union address in January.

"It's our duty," Sen. Sherrod Brown (D-Ohio) told *E&E Daily* of the proposed \$322 million funding.

"I mean, the U.S. Department of Energy and Department of Defense contaminated the ground. It's the poorest part of Ohio. The jobs are good-paid union jobs. The faster we get the cleanup, the better for public health and the better for the economy of that area, so I will look at all kinds of places to find the money to do this," he said.

Since 1992, the Uranium Enrichment Decontamination and Decommissioning Fund has covered cleanup. But Obama's final budget request proposes a different funding method. The plan calls for authorizing \$674 million of the \$1.6 billion left in the USEC Fund, a dormant account that federal auditors have recommended permanently rescinding.

According to the Government Accountability Office, Congress authorized the USEC Fund for two purposes: cleanup associated with disposing of depleted uranium at the

plant in Ohio and another in Paducah, Ky.; and expenses related to USEC's privatization ([E&E Daily](#), April 15, 2015). GAO determined both those purposes have been fulfilled.

But it's up to Congress to authorize new purposes.

"We are still reviewing the Department of Energy's proposed budget to clean up Piketon," Wenstrup said in a statement. "It is critical we keep this clean-up on track, and the Administration needs to cooperate with Congress to ensure full funding, particularly since any delay only adds to the overall cost for taxpayers."

Rep. Ed Whitfield (R-Ky.) expressed satisfaction with the \$272 million DOE has requested for Paducah. Whitfield, one of the top Republicans on the House Energy and Commerce Committee, fought to prolong the life of the Paducah plant until it was shuttered in 2013 ([Greenwire](#), May 15, 2013).

"We've had some really good levels of funding for cleanup at Paducah for a number of years now, and it is something that's vitally important, because [at] those sites it's going to take many years to complete the cleanup," Whitfield said.

"It's always difficult to find the money," he added. "U.S. Enrichment Corp. basically is gone anyway."

Appropriators want flexibility

Not all the lawmakers who represent former uranium enrichment sites are on board with DOE's plan.

The Obama administration's budget proposal includes \$391 million for environmental cleanup in Tennessee. Moniz mentioned on the day the budget surfaced that the demolition project at Oak Ridge is "finishing up."

Sen. Lamar Alexander (R-Tenn.), who holds the gavel on the Appropriations panel that sets DOE's budget, secured \$468 million for the project this year. But he is leery of making spending mandatory.

"The decontamination and decommissioning program should continue to be a discretionary program so that Congress can exercise oversight of this program. The appropriate authorizing committees should have an opportunity to consider the president's proposal, and I look forward to reviewing their recommendations," Alexander said.

His counterpart in the House, Energy and Water Development Appropriations Subcommittee Chairman Mike Simpson (R-Idaho), said the White House's proposal could negatively affect the way the Congressional Budget Office calculates cost.

"That would make it more difficult for us, because of the scoring," Simpson said. "How that's going to work out in the end, we don't know that yet, but it will be a question that we ask of the secretary."

The spending bill approved by House appropriators in fiscal 2016 would have rescinded all money in the USEC Fund. But that language was not in the year-end spending deal that cleared both chambers. Simpson said the final language was about giving DOE the option to restart ACP, a sensitive subject for the Ohio delegation.

"What we did is give the department flexibility to either continue the project or not continue the project, depending on what the department wanted to do," Simpson said.

"We pretty much knew they wanted to close it down."

"Some people said it wasn't a smart thing to do," he added. "Obviously if you're from that region, there's jobs involved ... so we kind of left that decision up to the department."

Industry opposition

According to [budget documents](#), the Obama administration's USEC legislation will also revive a multibillion-dollar decommissioning and decontamination tax to fund cleanup long term.

The Nuclear Energy Institute announced that the industry "categorically rejects" the proposal, which Obama has requested eight times.

"Industry recognizes that the federal government is under significant budget pressures but reinstating unjustified taxes on utility consumers while the government has failed to meet its own obligation is outrageously unfair," said Alex Flint, NEI's senior vice president of governmental affairs.

The mining industry is also likely to oppose DOE's proposed uranium releases. Two industry allies in Congress, Sen. John Barrasso (R-Wyo.) and Rep. Cynthia Lummis (R-Wyo.), have introduced [legislation](#) that would require DOE to follow a rulemaking-like process for proposed uranium releases (*E&E Daily*, May 22, 2015).

Sen. Ed Markey (D-Mass.), who has long pushed for reduced spending on nuclear weapons and has been critical of DOE efforts to prop up Centrus, is co-sponsoring the measure. Markey said he had not yet reviewed that portion of DOE's budget but backed efforts to devote USEC money to cleanup.

"Sounds good to me," he told *E&E Daily*.

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Source: <http://www.eenews.net/eedaily/2016/03/01/stories/1060033209>

Dayton Daily News

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Groups worry about radioactive substances near

Great Lakes

Posted: 10:35 p.m. Wednesday, March 2, 2016

Updated: 10:35 p.m. Wednesday, March 2, 2016

The Associated Press

TRAVERSE CITY, Mich. —Environmental groups in the U.S. and Canada are asking their federal governments to keep a closer eye on dangerous radioactive substances that could pollute the Great Lakes.

More than 100 organizations sent a letter Wednesday asking that radionuclides be listed among the region's designated "chemicals of mutual concern," which would require government agencies to monitor their movements and devise plans for keeping them out of the lakes.

A report prepared for the Canadian Environmental Law Association says more than 30 nuclear generating stations and sites for fuel processing and waste disposal are located near the lakes. Medical centers, universities and some industries also work with radioactive materials.

Report author John Jackson says as long as radioactive substances are shipped around the region, there's a danger of harmful spills.

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ToledoBlade.com

Nuclear plants at reduced power

Davis-Besse at 85%; Fermi 2 at 59% while repairs are made

3/3/2016

BY TOM HENRY

BLADE STAFF WRITER

Both nuclear plants in the Toledo area have been operating at reduced power for several days. In northern Monroe County, DTE Energy's Fermi 2 nuclear reactor has been at 59 percent power while workers repair a valve in the feedwater system in a non-nuclear area of the plant, DTE Spokesman Stephen Tait said.

The valve problem was identified Saturday when the utility decreased power for a routine adjustment of control rods to help fuel in the reactor be used more efficiently, Mr. Tait said.

DTE expects to have Fermi 2 back at full power soon, he said.

The plant's most recent refueling and maintenance outage was last fall.

In Ottawa County, FirstEnergy Corp.'s Davis-Besse nuclear plant was at 85 percent power Wednesday.

The plant only got back to full power for about two days after resuming operation the first week of February, FirstEnergy Spokesman Jennifer Young said.

It was idled Jan. 29 by a fuse failure in a monitoring system, which resulted in an automatic shutdown. That system's power supply is separate from the reactor.

On Jan. 30, several valves were unexpectedly closed in the main steam system. That occurred as a result of an inadvertent signal being sent to start the auxiliary feedwater system, which was already operating.

Ms. Young said those issues have been resolved and that the plant is engaged in a gradual "coast-down period" in preparation for its upcoming refueling and maintenance outage.

"There is not any condition at the plant that is causing us to operate outside of the expected plan for the cycle," Ms. Young said.

She said the company no longer gives advance notice of when those outages will begin because of greater competition caused by Ohio's deregulated electricity market, nor does it state how long they will last. But she said this upcoming outage is seen as the first fairly routine one in years, and that those typically last 30 to 40 days.

"This is a pretty normal refueling outage," Ms. Young said.

Nuclear plants refuel their reactors once every 18 to 24 months, depending on the type of fuel they use.

Fermi 2 and Davis-Besse are both about 30 miles from Toledo and along the Lake Erie shoreline.

Contact Tom Henry at: thenry@theblade.com, 419-724-6079, or via Twitter @ecowriterohio.

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The NRC Seven: Petitioning the NRC over Safety

[Dave Lochbaum](#), director, Nuclear Safety Project | March 4, 2016, 3:37 pm EST

Roy Mathew, Sheila Way, Swagata Som, Gurcharan Singh Matharu, Tania Martinez Navedo, Thomas Koshy, and Kenneth Miller—the NRC Seven—are not names as well known as Scott Carpenter, Gordon Cooper, John Glenn, Gus Grissom, Wally Schirra, Alan Shepard, and Deke Slayton—the [Mercury Seven](#) astronauts—but their courage and service to the country are comparable.

The Mercury Seven climbed into space capsules atop vast amounts of highly flammable fuel to be fired out of the earth's atmosphere.

The NRC Seven filed a [petition](#) with their employee seeking to resolve a safety problem affecting every operating nuclear plant in the United States, and the handful of new reactors currently under construction.

The Mercury Seven wore special gear to protect them from the harsh environment they could encounter during their journeys.

Hopefully, the NRC Seven will not encounter a harsh environment in response to their efforts to protect millions of Americans from a longstanding nuclear safety problem.

The key milestones leading to the NRC Seven submitting their petition are summarized below.

Revealing the problem: Byron event on January 30, 2012

As described in [Fission Stories #111](#), the Phase C connection for a three-phase power source to Byron Unit 2 from the plant's switchyard broke loose and fell to the ground (Fig. 2). The open phase condition was detected, causing the automatic shut down of the reactor.

But the open phase was not detected by the protection system for the two electrical circuits that supply electricity to vital equipment needed to cool the reactor core and perform other safety functions. Those electrical circuits continued to receive electricity from the degraded power source for about eight minutes until workers manually opened breakers to isolate the equipment and trigger automatic switchovers to a reliable power source.

A design vulnerability prevented the protection system from detecting the open phase condition affecting these two vital electrical circuits. The system compared Phase A to Phase B and Phase B to Phase C and required detections from both comparisons to trigger automatic protective actions. The Phase C failure was detected by the Phase B to Phase C comparison, but not by the other comparison. So, no automatic protection measures happened.

The open phase condition did not directly affect the emergency diesel generators. The emergency diesel generators stepped in at Byron to enable workers to sustain cooling of the reactor core.

The NRC calculated that the event at Byron posed a risk of core damage of approximately 1×10^{-4} per reactor year, or having one reactor meltdown due to an open phase condition every 10,000 years. That sounds like, and is, a low risk. But in nuclear safety, it's a relatively high number. Risks are typically in the 1×10^{-6} per reactor year range.

Thus, the open phase condition was about 100 times riskier than risks routinely experienced at nuclear power plants.

Open phase conditions

The main generators at nuclear power plants produce three phase alternating current. Each phase is conducted separately to the main transformer where the voltage and current is adjusted to the needs of the offsite power grid (Fig. 3).

In an open phase condition, one of the three phases fails. That failure could be where the phase is connected at either end, as in the Byron event. Or that failure could occur between the endpoints such as when broken insulation allows a metal wire to contact a nearby piece of metal to short out.

An open phase can occur when the circuit is energized or it can happen when no electricity is flowing through the phases.

Open phase condition consequences

Open phase conditions have different consequences depending on whether the circuit is energized or not.

My parents experienced an open phase condition years ago while they were away on vacation. The line connecting the house's main power panel to the power line in the neighborhood developed a fault causing an open phase condition. Because they were away on vacation, only small electrical appliances like clock radios were running, with one notable exception—the refrigerator. The open phase condition did not affect the 120 volt electrical circuits that supplied clock radios and other small appliances. But it impaired the 240 volt power supply for larger appliances like the electric stove, clothes dryer, air conditioner, and refrigerator. Of those, only the refrigerator was running during my parent's absence. The open phase condition meant that the refrigerator was getting 120 volts. The electric motor on the refrigerator's compressor tried to run, but burned itself out in the effort. The additional electrical current the motor used trying to run tripped the breaker in the house's main power panel.

Thus, the problem when an open phase condition occurs on an energized circuit is that electrical equipment can be damaged by the degraded power supply unless breakers/fuses operate to isolate the equipment from the problem.

The problem when an open phase condition occurs on a de-energized circuit is different. [Federal regulations](#) require nuclear plants have at least two connections to offsite electrical power supplies. When nuclear plants are operating, it is not unusual for one or more of the connections to these offsite power sources to be de-energized in a standby role. Electricity produced by the plant itself is used to power its electrical equipment. If the plant were to suddenly shut down and stop producing electricity, systems are installed to automatically swap in-plant electrical circuits to the offsite power sources.

An open phase condition on a de-energized circuit could result in the in-plant electrical circuits swapping to a “dead” backup.

The bottom line is that an open phase condition could prevent electrical equipment from performing the safety roles needed to prevent or mitigate nuclear plant accidents.

Seeking the extent of condition: July 27, 2012

The NRC sent a [Special Inspection Team](#) to investigate the event at Byron. Because the design vulnerability that factored in the Byron event likely affected other nuclear plants, the NRC sent [Bulletin 2012-01](#) to all plant owners in July 2012. The NRC required owners to evaluate their electrical power systems to determine if they had the design vulnerability like the one revealed at Byron. The NRC gave the owners up to 90 days to report the results from their evaluations.

Defining the extent of condition: February 26, 2013

The owners responded to Bulletin 2012-01 during the third week of October 2012. The responses for each nuclear plant are available in the NRC's online digital library using the following links:

[Arkansas Nuclear One](#) (AR)

[Beaver Valley](#) (PA)

[Braidwood](#) (IL)

[Browns Ferry](#) (AL)

[Brunswick](#) (NC)

[Byron](#) (IL)

[Callaway](#) (MO)

[Calvert Cliffs](#) (MD)

[Catawba](#) (SC)
[Clinton](#) (IL)
Columbia Generating Station (WA) – not found in the digital library
[Comanche Peak](#) (TX)
[Cooper](#) (NE)
[Crystal River 3](#) (FL)
[Dresden](#) (IL)
[Davis-Besse](#) (OH)
[Diablo Canyon](#) (CA)
Farley (AL) – not found in the digital library
[Fermi 2](#) (MI)
[FitzPatrick](#) (NY)
[Fort Calhoun](#) (NE)
[Ginna](#) (NY)
Grand Gulf (MS) – not found in the digital library
Harris (NC) – not found in the digital library
Hatch (GA) – not found in the digital library
[HB Robinson](#) (SC)
[Hope Creek](#) (NJ)
[Indian Point](#) (NY)
[Kewaunee](#) (WI)
[LaSalle](#) (IL)
[Limerick](#) (PA)
[McGuire](#) (NC)
[Millstone](#) (CT)
[Monticello](#) (MN)
[Nine Mile Point](#) (NY)
[North Anna](#) (VA)
[Oconee](#) (SC)
[Oyster Creek](#) (NJ)
Palisades (MI) – not found in the digital library
[Palo Verde](#) (AZ)
[Peach Bottom](#) (PA)
[Perry](#) (OH)
[Pilgrim](#) (MA)
[Point Beach](#) (WI)
[Prairie Island](#) (MN)
[Quad Cities](#) (IL)
[River Bend](#) (LA)
[Salem](#) (NJ)
[San Onofre](#) (CA)
[Seabrook](#) (NH)
[Sequoyah](#) (TN)
[South Texas Project](#) (TX)
[St. Lucie](#) (FL)
[Summer](#) (SC)

[Surry](#) (VA)

[Susquehanna](#) (PA)

[Three Mile Island](#) (PA)

[Turkey Point](#) (FL)

[Vermont Yankee](#) (VY)

Vogtle (GA) – not found in the digital library

[Waterford](#) (LA)

[Watts Bar](#) (TN)

[Wolf Creek](#) (KS)

The NRC staff reviewed the responses and prepared a [memo](#) summarizing the results and recommending next steps. The NRC staff wrote that all plant owners “stated that the relay systems were not specifically designed to detect a single-phase open circuit in a three-phase system.” In other words, all nuclear plants in the U.S. shared the kind of design vulnerability that caused problems at Byron.

As a result, the NRC staff concluded that the plants “may not be in compliance with the existing regulations.” The NRC staff recommended that the NRC take action to require all owners fix the design vulnerabilities at their plants (Fig. 4).

Seeking the solution: 2012-2013

As described in [Fission Stories #168](#), Byron’s owner developed a hardware fix to monitor all three phases for an open phase condition. What impressed me was that the owner offered to provide details of its fix to any other nuclear plant owner—for free.

Spreading the solution: 2013-2015

The NRC staff initiated a number of steps intended to resolve the open phase condition problem at all other nuclear plants. Chief among these steps was developing an “answer key” for plant owners and NRC staff to judge whether the fix at a specific plant is acceptable and drafting the paperwork that would require the owners to implement fixes.

The “answer key” came in the form of an addition to the NRC’s [Standard Review Plan](#) for nuclear power plants. The Standard Review Plan articulates applicable regulatory requirements and conveys the NRC’s expectations on what would, and sometimes would not, constitute compliance with the requirements. In this case, the NRC issued [Branch Technical Position 8-9](#) in July 2015.

Developing the implementation paperwork proved more challenging and as yet unachievable. I have been told that the NRC staff drafted the paperwork and distributed it for internal review by appropriate sections of the agency. I was informed that the Office of General Counsel concluded that the paperwork did not satisfy the provisions of the [backfit rule](#). The backfit rule prevents the NRC from imposing regulatory requirements on plant owners unless they are needed for adequate protection of public safety or achieve sufficient safety improvements to justify their cost. The NRC staff revised the draft and re-distributed it for internal review. Once again, the Office of General Counsel concluded that it did not satisfy the backfit rule.

I was told that the NRC staff working on the paperwork was not getting adequate feedback from the Office on General Counsel on how the drafts violated the backfit rule. Thus, they felt it impossible to solve the “secret” concerns no matter how many times they revised the draft.

Side-stepping the stall: February 29, 2016

Seven members of the NRC staff [submitted a petition](#) to the NRC seeking to have the NRC order the known design vulnerability at all U.S. nuclear power plants to be remedied. The NRC Seven did not submit the petition as NRC staff members. Instead, they acted as private citizens desperately seeking overdue protection for other private citizens.

Why must seven members of a federal safety regulator take such drastic steps?
Why indeed.

Suppose that seven members of the staff at the Springfield Nuclear Plant near Anytown, USA petitioned the Board of Directors of their company to resolve a nuclear safety problem at the plant. The NRC would quite properly recognize their action as *prima facie* evidence of a safety culture problem at Springfield needing investigation. The NRC Seven's action constitutes *prima facie* evidence that the NRC has a safety culture problem.

Posted in: [Nuclear Power Safety](#) Tags: [byron](#), [NRC](#), [nuclear power](#), [nuclear power safety](#)

See:

<https://adamswebsearch2.nrc.gov/webSearch2/view?AccessionNumber=ML16050A223>

Source: <http://allthingsnuclear.org/dlochbaum/the-nrc-seven-petitioning-the-nrc-over-safety>

NRC Begins Special Inspections at Perry Nuclear Power Plant

03/01/2016

The U.S. Nuclear Regulatory Commission (NRC) started a special inspection at the [Perry Nuclear Power Plant](#) in Ohio due to two recent unrelated events.

Operators with FirstEnergy Operating Co. ([NYSE: FE](#)) shut down the [reactor](#) Feb. 8 when they saw an increase of the temperature in the suppression pool, which is designed to condense steam and is also a water source for emergency cooling systems. On Feb. 11, while the reactor was still shut down, there was a temporary loss of power to certain plant cooling equipment. Operators used a redundant system to restore power to the cooling systems.

The four-member inspection team will spend time on and off site conducting reviews of the equipment and operator actions. A report documenting the team's findings will be made publicly available after the inspection is completed.

Source: <http://www.power-eng.com/articles/2016/03/nrc-begins-special-inspections-at-perry-nuclear-power-plant.html>

30 years after Chernobyl, locals still eat radioactive food

Published: Wednesday, March 9, 2016

Testing for contamination from the 1986 Chernobyl nuclear disaster has been limited or restricted due to the economic crises in Russia, Ukraine and Belarus, according to Greenpeace, leading locals to consume food containing dangerously high levels of radiation.

Tests conducted by the environmental group found that contamination has fallen a little -- but not enough -- especially in certain areas like forests.

"It is in what they eat and what they drink. It is in the wood they use for construction and burn to keep warm," according to the Greenpeace report.

The report says Ukraine "no longer has sufficient funds to finance the programs needed to properly protect the public. ... This means the radiation exposure of people still living in the contaminated areas is likely increasing."

Russia and Belarus suffer financially, while Ukraine is having economic troubles exacerbated by a pro-Russian insurgency in its eastern lands.

Those living in affected areas are still at risk every day. Greenpeace found that in some instances -- in grain, for example -- radiation levels had actually increased.

"And just as this contamination will be with them for decades to come, so will the related impacts on their health. Thousands of children, even those born 30 years after Chernobyl, still have to drink radioactively contaminated milk," according to the report (Andrew Osborn, [Reuters](#), March 9). -- **AS**

Source: <http://www.eenews.net/greenwire/2016/03/09/stories/1060033682>

Note: This story is included here because it is an area of discussion for potential environmental sampling after a radiological incident. Immediate sampling could indicate background levels of an element, and later sampling could indicate deposition and uptake from the contaminant of concern.

The New York Times

U.S.

Toxic Moss in Portland, Ore., Shakes City's Green Ideals

By KIRK JOHNSON

MARCH 2, 2016

PORTLAND, Ore. —The 346 clumps of moss that science researchers from the United States Forest Service scraped from tree trunks and branches across this city looked as ordinary as moss gets —ancient, simple and common to the point of invisibility in the Pacific Northwest's palette of green.

But the moss had a riveting tale to tell, with shock waves that are still spreading.

Toxic heavy metals, notably cadmium, which can cause cancer and kidney malfunction, were detected in the samples, with high concentrations in particular around two glass factories in residential neighborhoods, both of which had used metals for coloring their products.

In a city that prides itself on being an environmental example to the world —from its throngs of bike commuters to its antisprawl development rules —the moss study results roared, producing an upheaval of surprise, anger and fear. Residents shouted or wept in public meetings last month, raging at state officials, who released the results and then found themselves blamed for not knowing what the factories were putting up their smokestacks.

On Tuesday, the director of Oregon's Department of Environmental Quality, Dick Pederson, resigned abruptly, saying he had health concerns that needed immediate care.

After the moss studies were released, local officials, who have said they are cautiously optimistic that public health impacts from the glass plants will in the end be minimal, raced in to take soil samples and set up air monitors. But residents near the plants were also cautioned last month to forgo, at least for now, even the spring rites of backyard gardening, until the test results can be further analyzed —a warning that sent another shiver through a city where "eat local" is almost a mantra.

“Because there is uncertainty, the gap is filled with fear,” said Dr. Paul Lewis, the Multnomah County health officer.

Residents like Sarah Livingstone, 41, who lives about five blocks from one of the glass factories, said the moss study and its consequences had changed her life.

“It’s the last thing I think of before I go to sleep and the first thing I think of in the morning,” said Ms. Livingstone. Her 15-month-old daughter, Clara Ritter, tested positive for arsenic, which sent off alarm bells in the family even though doctors said it was within a normal range. “I don’t know how we get back to normal,” added her husband, Rex Ritter, 48, in an interview in their living room. Even the Forest Service researchers who undertook the moss study—the first of its kind in the world, health experts and regulators said—were taken by surprise. The idea, they said, in keeping with their work for a federal agency that has “forest” in its name, had been about demonstrating how trees add value in an urban setting. Measuring levels of pollution was not the goal of the research, let alone the discovery of a citywide grid of toxic hot spots.

“This wasn’t at all what we set out to find,” said Geoffrey Donovan, an economist who worked on the project with his research partner, Sarah Jovan, a moss and lichen expert.

The two glass companies, Uroboros Glass Studios and Bullseye Glass, both voluntarily stopped working with cadmium—used for making red, yellow and orange glass—and chromium, used in green and blue tints, after the moss results were announced in January.

But Daniel Schwoerer, a co-founder and the chief executive of Bullseye, said he thought glass-manufacturing might not be fully responsible. His factory, which opened in 1974 and has 140 workers, is also near a railroad yard, a cement plant and a metal-casting company.

“The D.E.Q. thinks we’re responsible—we don’t know,” Mr. Schwoerer said in an interview, referring to the Department of Environmental Quality. “But we’re going to do the right thing going forward.”

Oregon’s state epidemiologist and medical director of public health, Dr. Paul R. Cieslak, called the Forest Service study “genius” in looking where no one had ever thought to look. But the puzzle of science, anxiety and uncertainty that has resulted, he said, is messy.

And time consuming: The moss samples were gathered in late 2013, and the Forest Service team finished its analysis last May. The Department of Environmental Quality then did its own testing last fall to confirm what the moss was saying, and it released the results when they came in, in January.

“From a doctor’s standpoint, they always tell us, ‘Never order a test unless you know what you’re going to do with the result,’” Dr. Cieslak said. “Now we’re in this situation where we have all this data from the moss, and we’re left struggling to figure out what does it all mean.”

He said that because substances like cadmium are mainly considered risks to human health in long-term heavy exposures, and because the levels detected around the factories have so far been below the threshold of “acute,” the alarm for the moment is low. The state has said that people who want to check their own cadmium exposure could do so through a urine test with their physician—and that the state would pay for people who could not afford it—but results are just starting to come in.

“I think what we are going to end up telling people is that you are at some elevated risk, and the degree of elevation is likely to be small,” Dr. Cieslak said.

Environmental groups and legal experts said the long-term importance could be in the moss itself, as a relatively low-cost research tool. If plants can, in a way, speak of what they have absorbed, then a door has been opened to a whole new arena of pollution research.

“We are potentially at the tip of an iceberg,” said Wendy Wagner, a professor at the University of Texas at Austin School of Law who teaches environmental law. “With new tools of looking for things that we really haven’t looked for before, we’re going to be in for some surprises,” she added.

Federal air pollution laws have mostly focused on overall, or ambient, air quality—especially from emissions like carbon monoxide and lead. Metals and other toxics are less extensively monitored, Professor Wagner and other experts said, as are small companies like the two glass factories.

Portland residents like Mary Peveto said that to her, the revelation of the cadmium hot spots was no surprise.

Ms. Peveto, a co-founder and president of a group called Neighbors for Clean Air, became involved in pollution issues here in 2008 after a study found that schools in Portland—including her daughter’s

—had some of the worst results in the nation for industrial pollution deposits. That new hot spots are turning up all over again, she said, “shows that the system is still broken.”

Portland’s mayor, Charlie Hales, said he thought the shock from the moss study was compounded by Portland’s self-image as a city that can have it all: industry and blue-collar factory jobs, but also clean air and water.

“We are an example to the world of the green, sustainable city, and so it’s all the more dissonant,” Mr. Hales said.

Mr. Donovan and Ms. Jovan at the Forest Service, meanwhile, are already planning to replicate their study in a new city this spring: Cincinnati.

Doctors at Cincinnati Children’s Hospital Medical Center heard about the moss study and asked the researchers to go there and make a grid map like Portland’s, which will be cross-matched against health and development studies in children in various neighborhoods there.

“The first step is creating that map,” said Patrick Ryan, an associate professor of pediatrics at the center. “I haven’t seen anything like it before.”

A version of this article appears in print on March 3, 2016, on page A9 of the New York edition with the headline: Toxic Moss Sends Shivers Through Oregon City

NRC commissioner defends 'qualitative factors'

[Ben Panko](#), E&E reporter

Published: Thursday, March 10, 2016

The Nuclear Regulatory Commission's newest member took aim yesterday at recent criticisms from Congress and the nuclear industry about the agency's perceived overuse of "qualitative factors" in deciding regulatory actions.

"A basic tenet of regulatory analysis is that it should examine all relevant costs and benefits, whether they can be quantified or not," Commissioner Jeff Baran said in a speech at the NRC's annual Regulatory Information Conference in North Bethesda, Md. Last year, House and Senate Republicans sent open letters to the NRC complaining about the increased use of nonquantifiable factors in making cost-benefit analyses of regulatory actions ([Greenwire](#), Aug. 18, 2015). They argued that such justifications could allow costly regulations to be enacted based on subjective judgments.

"The expansion of this practice threatens to undermine NRC's long established practice of conducting rigorous, quantitative, cost-benefit analysis to justify its regulatory decision-making," House Energy and Commerce Chairman Fred Upton (R-Mich.) and Energy and Power Subcommittee Chairman Ed Whitfield (R-Ky.) wrote in an [open letter](#) last August. "Analyses untethered to objective data increases the risks that subjective judgments will be substituted to support preferred regulatory outcomes, no matter how marginal the safety benefit."

The nuclear industry also urged revisions of the NRC's rulemaking process to end the practice.

"This has resulted in relatively high scores for rulemakings that are costly to both NRC and industry but provide little benefit relative to the agency's core mission of protecting public health, safety and security," the Nuclear Energy Institute wrote in a letter last year ([Greenwire](#), Sept. 16, 2015).

At issue specifically was the NRC staff's recommendation that the agency mandate the creation of guidelines to respond to extreme disasters that could cause core meltdowns, such as what occurred in Japan's 2011 Fukushima Daiichi disaster. Since 1998, every U.S. nuclear plant had already implemented these so-called Severe Accident Management Guidelines as part of an industry-driven and NRC-endorsed program, but

it was voluntary. The agency's Japan task force, set up in the wake of the Fukushima disaster, had urged that SAMGs be made mandatory, but the NRC voted 3-1 against the proposal ([Greenwire](#), Sept. 2, 2015).

"The staff cited what we call 'defense in depth' that would be gained from requiring SAMGs, but was unable to quantify a benefit that would outweigh the cost of requiring SAMGs," outgoing Commissioner William Ostendorff said in a conference speech Tuesday explaining the NRC's vote.

Baran was the sole vote to implement SAMGs, noting in his speech yesterday that NRC inspectors had found the voluntary SAMGs to be outdated or lacking at some plants. He also wished the proposal had gone to public hearings, which would have been the case if the commission had voted to move it forward.

"The staff's regulatory analysis showed that making SAMGs enforceable would provide a substantial safety benefit," Baran said. "And industry told the commission that requiring SAMGs would have little or no additional cost. So making SAMGs an enforceable requirement would have increased safety without being burdensome." Baran noted that many of the NRC's post-Fukushima safety actions had been passed under an exception to the agency's cost-benefit analysis rule and that none of them likely would have survived strict scrutiny under the rule.

"Defense in depth matters. Enforceability matters. Public confidence matters. Those benefits can't be quantified, but they must be factored into our decisionmaking," Baran said.

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Source: <http://www.eenews.net/greenwire/stories/1060033785>

5 years after Fukushima disaster, its lessons still speak to U.S. industry

[Peter Behr](#), E&E reporter

Published: Monday, March 14, 2016

On March 11, 2011, the Fukushima Daiichi nuclear power plant on Japan's east coast was designed to withstand a magnitude-7-plus earthquake. A flood wall 18 feet high stood between the plant and the Pacific. But the Great East Japan earthquake that day measured magnitude 9, unleashing a tsunami that topped 45 feet.

The plant was inundated, backup generators were flooded and fuel supplies were swept away. Tokyo Electric Power Co. (TEPCO) emergency crews soon were without any electric power to run cooling water recirculation pumps to prevent the meltdowns of three reactor cores, explosions from leaking hydrogen, and the second-worst nuclear power accident in history. TEPCO workers, who could not know whether their families were among the 18,500 people killed or missing, had to battle through a horrific crisis they had never prepared for, subsequent investigation found.

The Fukushima tragedy triggered an intense safety review of U.S. reactors by the Nuclear Regulatory Commission and the industry, and a debate that has at times divided the NRC staff from its policymaking commissioners. The industry and its regulator, riveted by the crisis, faced core questions that their Japanese counterparts had not asked in time.

U.S. plants are designed to withstand natural disasters of expected dimensions -- a "design basis" threat. Plant operators are also required to prepare for certain "beyond-design-basis" emergencies, such as power outages and large fires or explosions,

prompted by the 9/11 attacks. Were the U.S. plants really prepared for such challenges?

And what if a more complex and profound emergency unfolded, a one-two punch such as an earthquake and flooding? What if a once-in-a-millennium, "black swan" catastrophe occurred, like Japan's magnitude-9 quake? How would defenses and defenders stack up then?

At the NRC's annual Regulatory Information Conference last week, NRC staff and industry representatives looked back on the five years of response to the Fukushima event and listed an industrywide investment of \$4 billion in new equipment, precautions, studies and procedures that they agreed made the U.S. plants more secure.

"We've worked very hard implementing lessons learned from Fukushima," said Jack Davis, director of the NRC's Japan Lessons Learned Division. "We've made substantial progress. There are real, tangible safety enhancements that have been made out there. "Today, U.S. plants are definitely much better prepared to deal with extreme natural hazards and other beyond-design-basis events," he added.

FLEX response

The most important of these enhancements has been the NRC-mandated creation of two new flexible emergency response "FLEX" centers, in Memphis, Tenn., and near Phoenix, where spare portable generators, water pumps, hoses and other emergency equipment are stored and maintained. Those supplies are ready to be deployed in 24 hours or less, using heavy-lift helicopters if necessary, to maintain cooling capability for reactors and spent fuel pools if plant power is lost.

Anthony Pietrangelo, the Nuclear Energy Institute's vice president and chief nuclear officer, noted that hose and power connections for emergency equipment have been standardized across the industry. "In addition to the national response centers, all emergency equipment used across 60 sites in the country are interchangeable, so it's like you have 62 response centers. We've simplified the connections on these," he said in an interview. "Basically, they are all plug and play." Emergency equipment is more tightly protected now, as well.

The changes give plant operators new capability to handle potential emergencies, including those that can't be predicted, conference speakers said.

At last week's conference, Edwin Lyman, a senior scientist at the Union of Concerned Scientists and a persistent critic of industry and NRC safety actions, faulted the commission's response to Fukushima as incomplete and confusing. The FLEX equipment must be subject to NRC rules and inspections, he said.

"UCS certainly acknowledges there has been an enormous effort on the part of the NRC and the industry to address the safety vulnerabilities after Fukushima," Lyman said. "We thank everyone for all that work that has been done, but we're just not sure it's good enough."

In addition to volumes of mandatory regulations, nuclear plant safety is addressed by voluntary, industry-developed severe accident management guidelines (SAMGs) that deal with accidents beyond anticipated design-basis threats.

Inconsistent remedies

Immediately after the Fukushima accident began, the NRC ordered inspections of every U.S. reactor to check on emergency preparedness. The inspections revealed a sizable

list of shortcomings, involving both regulated design-basis threats and emergencies covered by voluntary guidelines.

A valve that operated a water main needed for fire response at the Millstone plant in Waterford, Conn., would be underwater in a design basis flood. At the Brunswick reactor in Southport, N.C., fire pumps were located in a building that was not protected against earthquake damage. A fire pumper truck at the Callaway plant near Fulton, Mo., did not have a suction hose long enough to reach water supply sources. Operators at the Wolf Creek nuclear plant in Burlington, Kan., couldn't find some emergency equipment and had to locate it in a computer database -- which would not have run if the plant lost electric power.

The issues found in the post-Fukushima inspections were promptly remedied, the NRC said, but the inspection results indicated that "worst case" thinking wasn't the rule in all the plants before the Fukushima disaster. The NRC inspectors who found inconsistent implementation of SAMGs attributed it to the guidelines' voluntary nature.

The starting point for the NRC's Fukushima review was a report by senior NRC staff members called the Near-Term Task Force, delivered four months after the accident, which urged that the voluntary guidelines be made into requirements. In opposing such a move, the NEI said the NRC's "regulatory cost-benefit evaluations indicate this is not justifiable using quantitative measures." The commission sided with the industry on the issue.

At the conference, Davis said he had heard "from many stakeholders and even some NRC staff" that "where we are today ... is significantly different from what the Near Term Task Force originally envisioned or had recommended."

"Some view this as perhaps watering down or chipping away at what the original recommendations were. In reality, it was learning and then focusing on what really matters for safety," he said.

The commission has backed up the task force's concern that the design basis threats to U.S. reactors were calculated in inconsistent and potentially inadequate ways. The task force said that in some nuclear plants, the design basis does not consider the probable maximum flood. In other cases, the maximum flood is calculated differently for different units at the same plant. Some plants are overly reliant on stopgap measures to deal with extreme emergencies, such as the use of unstable sandbags to raise levels of flooding protection.

"The Task Force has concluded that flooding risks are of concern due to a 'cliff-edge' effect, in that the safety consequences of a flooding event may increase sharply with a small increase in the flooding level."

The NRC responded by ordering new studies of flooding and earthquake hazards, and implications for U.S. reactors.

What took so long?

Several speakers at last week's conference took up the question of why it took the tragic failures of planning and analysis that were at revealed in the Fukushima Daiichi disaster to prompt a deep look at U.S. reactor safety.

"We struggled early on to think beyond design basis, because we've all grown up with design basis and that's been our focus," said Scot Greenlee, senior vice president for Exelon Nuclear Generation. It put guardrails around the issue. "We have learned that

we have to have our plants designed and capable of dealing with things outside that design basis."

"I think that is where the safety culture has changed," he added.

New threat profiles will be completed to reflect the most recent evidence for seismic and flooding hazards -- a step Japan never took.

Davis concluded, "There is still a sizable amount of work that still needs to be completed." History will have to reveal whether the new threat profiles got it right.

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Source: <http://www.eenews.net/energywire/2016/03/14/stories/1060033922>

Gallup finds majority opposition for the first time

[Christa Marshall](#), E&E reporter

Published: Friday, March 18, 2016

For the first time, a majority of Americans say they oppose nuclear energy, according to a national Gallup poll.

Fifty-four percent of U.S. adults now oppose the power source, an 11-point jump from a year ago. The percentage favoring nuclear simultaneously dropped from 51 percent to 44 percent. Gallup has been surveying opinions on the issue since 1994, and has never before found majority opposition.

The polling company said low gas prices and a perception of abundant energy appear to be driving the shift.

"As Americans have paid less at the pump, their level of worry about the nation's energy situation has dropped to 15-year-low levels. This appears to have resulted in more Americans prioritizing environmental protection and fewer backing nuclear power as an alternative energy source," Gallup [said](#).

The 2011 Fukushima Daiichi nuclear disaster and safety concerns generally do not seem to be a factor in the change, according to Gallup. It noted that opinions on nuclear did not shift between 2011 and 2012, after the incident.

The peak of nuclear support occurred in 2010, when Gallup registered 62 percent of Americans in favor of it. Republicans continue to be more in favor of nuclear than Democrats, despite a drop in support in both parties. For example, the percentage of GOP respondents supporting nuclear dropped to 53 percent in the recent survey, down from 68 percent last year.

Steve Kerekes, a spokesman for the Nuclear Energy Institute, noted a [survey](#) last November showing favorable opinions for nuclear. It found that 73 percent of respondents associate nuclear with clean air, for example. "Different polls show different things. ... We trust our survey," said Kerekes.

Gallup has released a series of polls on environmental issues this week. One [found](#) that concerns about water and air pollution edged up slightly from a year ago but remain below levels of concerns in the 1990s. Another [found](#) that low prices for gas are prompting the lowest-ever concerns about a critical energy shortage in the next five years. Gallup also reported that concern about climate change is at an eight-year high ([Greenwire](#), March 17).

The Gallup poll was conducted March 2-6 with 1,019 U.S. adults. It had a 4-point margin of error.

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Source: <http://www.eenews.net/greenwire/2016/03/18/stories/1060034292>

Industry urges streamlined decommissioning rule

[Ben Panko](#), E&E reporter

Published: Friday, March 18, 2016

As the Nuclear Regulatory Commission works on revamping the requirements for reactor decommissioning, the nuclear industry is pushing for a "limited-scope rulemaking" on the issue.

The NRC announced its intent to revamp the current rules in November after a year that saw multiple plant closure announcements ([E&ENews PM](#), Feb. 11). The last nuclear reactor decommissioning in the United States was approved 16 years ago, and agency rules currently require a reactor being decommissioned to comply with the same standards as an operational reactor throughout the process, unless the operator gets an exemption from the NRC.

"Requiring facility-specific licensing actions and exemptions to implement changes that could be addressed generically is inefficient at best," Rod McCullum, senior director for used fuel and decommissioning programs at the Nuclear Energy Institute, wrote in a [letter](#) to the agency.

NEI's [proposed rulemaking language](#) would allow operators to comply with reduced emergency preparedness and insurance requirements after certain milestones are met in the decommissioning process, such as after the reactor has been permanently defueled or after the fuel has been removed from the site.

"NEI believes that the NRC should proceed with a rulemaking to modify the requirements applicable to reactors undergoing decommissioning in order to appropriately align the regulatory requirements with the reduced risk profile associated with those facilities," McCullum wrote.

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Source: <http://www.eenews.net/greenwire/2016/03/18/stories/1060034286>

Massive arch to block Chernobyl radiation is finished

Published: Thursday, March 24, 2016

A permanent structure to prevent deadly radiation from Chernobyl from escaping for the next century has been finished and will be pulled over the ruined Ukrainian nuclear plant later this year.

A botched test at the Soviet facility on April 26, 1986, caused a meltdown that sent radiation across much of Europe. A temporary "sarcophagus" was built over the ruins soon after the disaster to contain radiation, but a \$1.7 billion permanent arch has been in construction since 2010 ([Greenwire](#), April 28, 2014).

The 30,000-metric-ton steel arch will become the largest land-based moving structure when it is pulled over the Chernobyl plant to block radiation and allow the rest of the plant to be dismantled safely.

"We've already gone through a number of very risky stages. ... We always have fears, we are people, but there is nothing technical left that is a challenge," said Vince Novak, the nuclear safety director of the European Bank for Reconstruction and Development (Alessandra Prentice, [Reuters](#), March 23). -- **BTP**

Source: <http://www.eenews.net/greenwire/2016/03/24/stories/1060034573>

Regulators OK use of underground ice wall at Fukushima

Published: Wednesday, March 30, 2016

Japanese regulators today approved the use of a massive refrigeration system that would create an underground ice wall at the destroyed Fukushima Daiichi nuclear power plant in an attempt to stop leaking radioactive water from entering the Pacific Ocean.

The structure was completed last month, according to the Nuclear Regulation Authority. It can now be turned on.

Tokyo Electric Power Co.'s plant operator said it plans to activate the ice barrier tomorrow, beginning with the portion located nearest the sea to prevent additional contaminants from leaching into the ocean.

The refrigeration system will be turned on in phases to allow close monitoring and adjustments to be made.

Nearly 800,000 tons of nuclear water that is being stored in 1,000 tanks at the plant have been stalling decontamination and decommissioning at the facility, which was slammed by a massive tsunami in 2011.

The 35 billion yen (\$312 million) project funded by the government is viewed as the key to resolving the plant's long-standing water struggles.

Construction giant Kajima Corp. proposed the project that is more than a year behind schedule due to technical uncertainties. Some experts remain skeptical of the technology, questioning whether it's worth the huge investment (Mari Yamaguchi, [AP/ABC News](#), March 30). -- **AK**

Source: <http://www.eenews.net/greenwire/2016/03/30/stories/1060034818>

Portsmouth Daily Times

D&D extended 30 months at \$750 million

First Posted: 2:22 pm -March 29th, 2016

By Frank Lewis [-flewis@civitasmedia.com](mailto:flewis@civitasmedia.com)

The U.S. Department of Energy (DOE) has exercised its option to extend the contract for decontamination and decommissioning (D&D) of the Portsmouth Gaseous Diffusion Plant at Piketon for a period of 30 months beyond the expiration date of March 28, 2016.

The estimated value of the option period is approximately \$750 million. The initial five-year base contract with Fluor-BWXT Portsmouth, LLC commenced in March 2011.

The DOE says its objective in exercising its option is to fulfill DOE's requirement for the continuation of services and execution of the D&D Project at the former uranium enrichment plant near Piketon.

Services that will continue during the new performance period include demolition and disposal of all gaseous diffusion plant (GDP) facilities, process equipment, related process buildings, and other ancillary GDP facilities.

In its determination, the Department found that the option execution is the go

vernment's most cost-effective and advantageous alternative by allowing for continued uninterrupted services as well as continuing momentum on important projects such as waste management and deactivation of key plant facilities in preparation for demolition. The option execution provides continuity of operations and supports workforce stability, and provides incentives and other provisions to ensure accountability for excellent performance.

The hiccups began to occur last year when the funding sources became off-kilter. The D&D had been funded by two sources –the open market sale of uranium and government appropriations, however, the bottom fell out of the uranium market and the funding was cut, leading to a near shutdown and a call by the Ohio delegation in Washington for complete funding through the DOE.

The Portsmouth (Piketon) site was constructed by the Atomic Energy Commission in the early 1950s for the purpose of enriching uranium for national defense purposes, and it later provided enriched uranium for commercial nuclear power fuel. The Environmental Management (EM) cleanup at the site commenced in 1989, and the GDP ceased enrichment operations in 2001.

According to the DOE's Office of Environmental Management, its mission is to complete the safe cleanup of the environmental legacy brought about from five decades of nuclear weapons development and government-sponsored nuclear energy research.

The contract and information pertaining to FBP's performance under the contract can be found at: <http://www.energy.gov/pppo/contracts>

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Portsmouth Daily Times

Carr addresses D&D priorities

First Posted: 10:08 am -March 30th, 2016

By Frank Lewis flewis@civitasmedia.com

Employees of Fluor BWXT (FBP) at the Decontamination and Decommissioning (D&D) project at Piketon received good news concerning the future of their jobs, Tuesday with the announcement that the Department of Energy (DOE) had extended the project 30 additional months at a total cost of \$750 million. The manager of the project added to the positive information coming out of Washington late Tuesday evening in correspondence to employees.

"I am very pleased to announce that DOE has extended the FBP contract an additional 30-months beyond the 5-year base period that ended yesterday. The contract also provides for a second priced option that DOE could exercise at a later date that could extend the contract to March 28, 2021," Dennis Carr, of Fluor BWXT, said.

"The contract structure remains the same as the base period in that it is a Cost Plus Award Fee Contract. The contract extension places much more emphasis on delivering against bi-laterally agreed upon milestones. These milestones are established for each area of scope including deactivation, D&D, waste management, nuclear operation, environmental remediation, utility operations and maintenance services. The contract establishes an opportunity for DOE and FBP to collaboratively focus on achieving these

unilaterally agree upon milestones to make best use of our expected funding over the upcoming years.”

Carr said the job will most significantly we will focus on attaining cold and dark status in the X-326 by the end of June 2017; completing the disposition or transfer of legacy waste and accountable materials from the X-326 into other facilities by September 2017, in addition to the off-site shipment of a number of other legacy waste streams stored in the X-847 and the 744-G, and completing mobilization into the X-333 to support the start of deactivation activities.

Other priorities include completing all design activities for the On-site Waste Disposal Facility, the associated wastewater treatment system, and the planned haul road by June 2018; completing the necessary disassembly and nuclear material recovery efforts in the X-705 Annex and the off-site shipment of all remaining process gas equipment from the X-326 by September 2018 and completing installation, start up and operation of at least two cement stabilization facilities to support disposition of the remaining HEU inventories.

Carr said with the addition of the second 30-month option to the contract the most significant objectives would be to substantially complete the deactivation of the X-333, complete construction and begin waste placement for three liners of the On-site Waste Disposal Facility, and complete demolition to slab of the X-326 building.

“This is a very challenging scope of work that can only be accomplished through the collective focus of our entire team. While we strive to balance the many priorities of the option period scope, we must maintain a clear and uncompromising commitment to the safe execution of work. This applies to every task, performance based incentive, or project we undertake,” Carr said. “As we enter the option period of our contract we are adding a new member to our team, CH2M. CH2M is an engineering, construction and operations company that supports many of the DOE sites. CH2M has extensive deactivation and D&D experience as a corporation and is presently engaged in the D&D of the DOE Oak Ridge gaseous diffusion facilities. Our partnering with Pro2Serve, InSolves and Wastren Advantage as subcontractors will continue through the option period.”

He went on to say some organizational changes will occur as a result of the new contract and the new team member, and that he will be issuing an organizational announcement later this week or early next week.

Carr cautioned the new contract should not be construed as a guarantee of future funding. He said the dependence on their team members in the X-344 to continue what he said was their excellent execution of the barter program will extend throughout both contract option periods. Each year’s allocation of federal appropriated funds will continue to be heavily dependent on the team’s performance.

“The best way to ensure the continued uninterrupted performance of our project is through excellent safety performance and meeting our milestone commitments,” Carr said. “We achieved a lot together during the first five years of the contract. It wasn’t always easy. Our safety and field performance improved up as we gelled as a team. This was recognized by DOE and it’s the reason we are here as a team on March 29. I hope you will continue to join me in making sure the client sees the wisdom in that decision each and every day. These next 30 months and hopefully 5 years will bring incredible transformation to this former uranium processing plant. It will be exciting and

it will be rewarding. Because the next five will truly get us closer to our mission of Safely Cleaning up the DOE site for Our Community's Future."

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Regulators set to rule on AEP, FirstEnergy power plant contracts

[Jeffrey Tomich](#), E&E reporter

Published: Thursday, March 31, 2016

Ohio regulators are set to decide a pair of contentious cases today involving proposals by two electric utilities to enter long-term contracts with sister companies that would ensure profits for power plants struggling amid a continuing slump in electricity prices. Billions of dollars are at stake in the Public Utilities Commission of Ohio's decision, which has already spilled across state borders. The issue has been argued in thousands of pages of testimony and during hearings. It has spurred complaints to federal regulators and the threat of lawsuits, television ads and social media campaigns. At the core of the cases are proposals initially made in 2014 by American Electric Power Co. Inc. and FirstEnergy Corp. to subsidize certain power plants in Ohio for at least part of the next eight years.

Utilities say the agreements would stabilize power prices and ultimately save millions of dollars for consumers while helping retain power plants and the thousands of jobs and millions of dollars in taxes that they support.

AEP Ohio President Pablo Vegas said the utility's proposal will help shield consumers from the effects of a sometimes bumpy transition to competitive retail electricity markets and a separate, equally volatile switch from coal-fueled power to cleaner energy sources.

"That transition has to be done in a way that doesn't hurt reliability, doesn't hurt those communities where the plants are, and doesn't hurt pocketbooks," Vegas said in an interview.

Opponents, including rival generators and consumer groups, say the agreements are nothing short of "bailouts" that would serve only to pad profits for politically connected utilities and undermine competitive wholesale power markets that the utilities pressed for years earlier.

Columbus, Ohio-based AEP and FirstEnergy, based in Akron, initially proposed 15-year power purchase agreements as part of broader plans submitted in 2014.

The PUCO last year rejected AEP's original proposal as well as a similar plan from Duke Energy Corp. ([EnergyWire](#), April 6, 2015). But regulators left the door open for future agreements, which led the utilities to negotiate settlements with PUCO staff and other parties that were filed separately in December.

The plans call for the utilities, which deliver electricity to more than 3 million customers in Ohio, to purchase all of the output from the affected plants at cost of production plus a 10.4 percent profit and resell it through the PJM Interconnection wholesale market.

The difference would flow through to customers as a charge or a credit.

AEP estimates that customers would initially see higher electricity prices, but it would save \$721 million over the life of the agreement. FirstEnergy said Ohio utility customers would save more than \$560 million over the eight-year term.

But the Office of the Ohio Consumers' Counsel, a residential consumer utility advocate, estimates that the agreements will not benefit consumers at all. In fact, the group

estimates that AEP and FirstEnergy customers could be forced to pay an additional \$8.2 billion over the next eight years.

The FirstEnergy proposal involves the 908-megawatt Davis-Besse Nuclear Power Station on Lake Erie, the 2,200 MW W.H. Sammis coal-fired power plant and a portion of the output from the company's interest in Ohio Valley Electric Corp. (OVEC) power stations in Ohio and Indiana.

The AEP plan includes its ownership of more than 2,600 MW at nine different generating units throughout the state plus its share of OVEC.

Rival proposals

Rival Dynegy Inc., which purchased Duke Energy's Ohio generation fleet, has been among the most vocal opponents of the utility proposals.

Dynegy is among the companies that filed complaints at the Federal Energy Regulatory Commission, and it has threatened to file lawsuits if the plans are approved. It is also one of two rival generators (the other is Exelon Corp.) that said they could save Ohio consumers billions of dollars if they were allowed to put forward competing proposals ([EnergyWire](#), Jan. 5).

Independent power producers including Dynegy, Calpine Corp., NRG Energy Inc. and Talen Energy Corp. and electric suppliers formed the Alliance for Energy Choice earlier this year to challenge the utility proposals. The group said utility claims about the supposed benefits of the agreements are misleading.

"You are maintaining uneconomic units and forcing ratepayers to pay for it," said Todd Snitchler, a former PUCO chairman and Ohio legislator who is leading the campaign. Snitchler said there is no evidence that affected AEP and FirstEnergy units face any immediate threat of closure or that there is any risk to reliability in the PJM Interconnection or the state of Ohio, both of which are seeing new natural gas-fired generation being developed to take advantage of output from the nearby Marcellus Shale formation.

But the AEP Ohio president said claims by the power producers that the agreements will distort wholesale power markets are incorrect. "It has zero effect on the PJM marketplace or the Ohio market," Vegas said.

"[The independent power producers] are hoping that the plants that are part of the PPA will close and that prices will go up," Vegas said.

In fact, the AEP plants in Ohio are among those that the company has considered selling since it retained Goldman Sachs more than a year ago to explore a possible sale of 7,900 MW of fossil plants in Ohio and Indiana.

Plant fates at stake

If its proposal is denied by PUCO, Vegas said, AEP would have to continue to explore divestiture of the Ohio assets.

FirstEnergy, too, said the fate of the affected plants is uncertain if regulators reject the settlement. Both the **Davis-Besse** plant, which was recently relicensed for another 20 years, and the W.H. Sammis coal plant have decades of useful life remaining. But they have to be able to weather the storm of depressed natural gas and power prices.

"We'll weigh our options," FirstEnergy spokesman Doug Colafella said. "These plants are facing economic challenges, especially when you consider the low price of natural gas right now. We think it would be a mistake not to preserve these baseload plants for the long term."

In addition to consumer groups and rival power producers, the utility proposal drew opposition from clean energy advocates who saw aging coal and nuclear plants operating at the expense of renewable energy development and energy efficiency ([EnergyWire](#), Dec. 15, 2015).

But at least one green group, the Sierra Club, agreed not to oppose AEP's latest agreement filed with the PUCO in December, which would require the retirement or repowering of coal units, development of 900 MW of wind and solar energy, support for energy efficiency programs and other benefits.

"That would certainly be the biggest renewable energy investment in Ohio history," said Nachy Kanfer, a deputy director for the Sierra Club's Beyond Coal campaign.

While FirstEnergy also pledges in its agreement filed with PUCO to slash carbon emissions, support energy efficiency and renewable energy development, the Sierra Club remains opposed because the plan contains no specific commitments to move away from coal and nuclear power, Kanfer said.

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Source: <http://www.eenews.net/energywire/2016/03/31/stories/1060034857>

Fukushima cleanup and related News...

From <http://www.hiroshimasyndrome.com/fukushima-accident-updates.html>

A team of experts from four universities conclude that the Fukushima evacuation was not justified. The team consists of experts from City University in London, Manchester University, the Open University and Warwick University. Team head, Professor Phillip Thomas, said "We judged that no one should have been relocated in Fukushima and it could be argued this was a kneejerk reaction. It did more harm than good. An awful lot of disruption has been caused." A second finding was that the financial impact of the evacuation was up to 150 times greater than what might be judged as rational. Another says Tokyo failed to consider the physical and psychological effects of their actions, leading to more than 1,000 evacuation-related deaths. Further, the fact that prolonged separation from home and hearth causes a significant fraction of evacuees to never wish to return, was overlooked. Thomas argues that governments should carry out a careful assessment before ordering a prolonged "relocation". In addition, he would like to see more real-time information available to the public on radiation levels in order to avoid hysteria. Funding for the study came from Britain's Engineering and Physical Sciences Research Council.

http://www.japantoday.com/category/national/view/fukushima-relocations-were-unjustified-kneejerk-reaction-uk-academics?utm_campaign=it_newsletter&utm_medium=email&utm_source=it_newsletter_2016-03-10_PM

Radiation exposures around F. Daiichi have dropped 65%. The Nuclear Regulation Authority routinely monitors radiation within an 80km radius from helicopters. The first such survey was in October, 2011. This was originally used to verify the efficacy of the extent of the evacuation. Areas with readings that extrapolated to 20 millisieverts per year or more, were considered to have warranted evacuation. The investigation has

been run annually, ever since. The aerial survey run in October of last year revealed that there has been an average 65% decrease in exposure levels over the past four years. More than 80% of the drop is attributed to the passage of time, since radioactivity decreases as time passes. Professor Yuichi Onda, University of Tsukuba, says other reasons include isotopes sinking into the soil and decontamination efforts.

http://www3.nhk.or.jp/nhkworld/en/news/20160311_04/

More than half of Naraha's population is going home. Six months ago the evacuation order for the town was lifted. The latest Reconstruction Agency data shows that 7.6% of the original 7,000 person population have returned home. In addition, another 34.7% say the plan to return after all recovery plans have been realized, and some 8.4% say they will go back before then. Thus, 50.7% now say they have either returned home, or planning to return home, compared to 45.7% in October, 2014.

<http://www.fukushimainponews.com/news.html?id=640>

The chance of catching a fish off Fukushima's coast with above-limit Cesium is almost zero. The finding was published in the journal, *Proceedings of the National Academy of Science*. The team of researchers was Japanese, headed by Hiroshi Okamura of the Fisheries Research Agency. They found the overall risk of contamination exceeding the standard has steadily dropped since the nuke accident, and is now almost zero percent when marine and freshwater fishes were taken together. The Japanese standard is 100 Becquerels per kilogram. They also found that the probability of catching a marine fish with greater than 20 Bq/kg was also almost zero, but 7.5% for freshwater game species.

<http://www.fukushimainponews.com/news.html?id=638>

No radioactive cesium was found in Fukushima meals for the second straight year. The study, conducted by Co-op Fukushima, tested home-cooked meals made with locally-grown products and regular tap water. The meals were prepared by 100 residents of Fukushima Prefecture. Due to these results, the Co-op concluded that the probability of ingesting radioactive cesium in Fukushima meals is "extremely low". The Agricultural Ministry hopes these results will persuade the 12 nations that have varying sorts of bans on Japanese foods, to reconsider.

<http://www.japantimes.co.jp/news/2016/03/09/national/five-years-tests-find-no-radioactive-cesium-fukushima-meals/#.VuAerZBf0dV>

Science Magazine posts a rather balanced Fukushima 5th anniversary article. It asks "is it safe to live near Fukushima". While not providing a direct answer, some important information is provided. Perhaps the most significant point is Minamisoma Mayor Katsunobu Sakurai saying, "There has been no education regarding radiation. It's difficult for many people to make the decision to return without knowing what these radiation levels mean and what is safe." (Aside – As our regular readers surely know, this has been a continually emphasized by this writer. – End aside) Over-all, the article is well-written, contains few appeals to uncertainty, and (unlike nearly all 5th anniversary articles elsewhere) is unafraid to cite appropriately knowledgeable experts. It even mentions the recent study by Fukushima high school students showing they get no more radiation than the average European student.

http://www.sciencemag.org/news/2016/03/five-years-after-meltdown-it-safe-live-near-fukushima?utm_source=sciencemagazine&utm_medium=facebook-text&utm_campaign=fukushimafeature-2703

Science Magazine also posted an overview on the Fukushima child thyroid issue. It says the apparently large number of thyroid anomalies detected since the nuke accident, is not unusual for Japan, in general. Using state-of-the-art ultrasound, researchers are finding the rate of anomalies with Fukushima children is not demonstrably different from the rest of the country. T Science also notes that a similar upsurge in the rate of detected anomalies occurred in South Korea 15 years ago, after the use of then-new ultrasound detection was used to screen patients. Seiji Yasumura, vice director of the Fukushima Prefecture Health Management Survey, says the upsurge in detected anomalies is not something to get upset about, but “finding small lesions causes patients anxiety.” He laments that it has caused over-reaction, resulting in Fukushima children having their thyroids surgically removed. Yasumura feels that “careful observation” would have been the better option.

<http://www.sciencemag.org/news/2016/03/mystery-cancers-are-cropping-children-aftermath-fukushima>

F. Daiichi “fencepost” exposure will drop below the target level by April 1st. Tepco calculated the approximate date when the exposure level at the station boundary would dip below the one millisievert per year goal. It seems that this “fencepost dose” will be at about 0.96 mSv/yr by March 31st. Tepco made this announcement on February 25th, but none of the Japanese Press mentioned it. Only Fukushima Minpo, the weekly newspaper circulated primarily within the prefecture, has posted it.

<http://www.fukushimaminponews.com/news.html?id=636>

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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/2013/>.

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

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

Part 21 and Miscellaneous

2.206 Petition on Current Operating Nuclear Power Plants - Open Phase Conditions in Electric Power Systems Which Lead to Loss of Safety Functions of Both Offsite and Onsite Power Systems (NRC Bulletin 2012-01)

ADAMS Accession No. ML16050A223

See related news article

Correction to the U.S. Nuclear Regulatory Commission Analysis of Licensees' Decommissioning Funding Status Reports

ADAMS Accession No.: ML16056A139

Regulatory Issue Summary 2016-01, "Nuclear Energy Institute Guidance for the Use of Accreditation in Lieu of Commercial Grade Surveys for Procurement of Laboratory Calibration and Test Services," dated March 16, 2016

ADAMS Accession No. ML15323A346

Regulatory Issue Summary 2016-02, "Design Basis Issues Related to Tube-to-Tubesheet Joints in Pressurized-Water Reactor Steam Generators," dated March 23, 2016

ADAMS Accession No. ML15169A543

Draft Integrated Action Plan to Modernize Digital Instrumentation and Controls Regulatory Infrastructure

ADAMS Accession No. ML16075A466

FirstEnergy

03/11/2016 Meeting with FirstEnergy Nuclear Operating Company

ADAMS Accession No. ML16070A092

Davis-Besse

Davis-Besse Nuclear Power Station, Unit No. 1 - Acceptance Of License Amendment Request To Revise Technical Specifications Requirements For The Radioactive Effluent Controls Program (CAC No. MF7351)(L-16-030)

ADAMS Accession No. ML16060A095

Davis-Besse Nuclear Power Station, Unit No. 1 - Acceptance of License Amendment Request to Change the Emergency Plan by Revising the Emergency Action Level Scheme (CAC No. MF7364).

ADAMS Accession No.: ML16056A253

ANNUAL ASSESSMENT LETTER FOR DAVIS-BESSE NUCLEAR POWER STATION
(REPORT 05000346/2015006)

ADAMS Accession Number ML16060A258

Davis-Besse Nuclear Power Station, Unit No. 1 – Upcoming Steam Generator Tube Inservice Inspection (CAC No. MF7398)

ADAMS Accession No.: ML16057A865

Davis-Besse Nuclear Power Station, Unit No. 1 - Issuance of Amendment Revising the Completion Date For Milestone 8 of the Cyber Security Plan (CAC NO. MF5892)

ADAMS Accession No. ML15302A075

Davis-Besse Nuclear Power Station, Unit No. 1 - Acceptance Of License Amendment Request To Adopt National Fire Protection Associated Standard 805 (CAC No. MF7190)

ADAMS Accession No. ML16074A123

Davis-Besse Nuclear Power Station, Unit No. 1 - Online Reference Portal for License Amendment Request to Adopt National Fire Protection Associated Standard 805 (CAC No. MF7190)

ADAMS Accession No.: ML16075A111

Perry

ANNUAL ASSESSMENT LETTER FOR PERRY NUCLEAR POWER PLANT, UNIT 1
(REPORT 05000440/2015006)

ADAMS Accession Number ML16060A319

Perry Nuclear Power Plant, Unit No. 1 - Request For Additional Information Related To Emergency Action Level Scheme Change License Amendment Request (CAC No. MF7046)(L-15-257)

ADAMS Accession No. ML16067A281

Perry - License Amendment Request for Upper Containment Pool (UCP) Gate Installation in MODEs 1, 2, and 3, and Drain-Down of the Reactor Cavity Portion of the UCP in MODE 3.

ADAMS Accession No. ML16075A411

Perry Nuclear Power Plant, Unit 1 - Issuance of Amendment Concerning Adoption of TSTF-425, "Relocate Surveillance Frequencies to Licensee Control" (CAC NO. MF3720) (L-14-106).

ADAMS Accession No. ML15307A349

Beaver Valley

ANNUAL ASSESSMENT LETTER FOR BEAVER VALLEY POWER STATION,
UNIT NOS. 1 AND 2 (REPORT 05000334/2015006 AND 05000412/2015006)

ADAMS Accession No. ML16054A769

Beaver Valley Power Station, Unit Nos. 1 & 2 – Notice of Annual Assessment Meeting, March 21, 2016

ADAMS Accession No. ML16067A328

REQUALIFICATION PROGRAM INSPECTION – BEAVER VALLEY POWER STATION, UNIT 1

ADAMS Accession No. ML16083A041

SENIOR REACTOR AND REACTOR OPERATOR INITIAL LICENSE EXAMINATIONS -
(BEAVER VALLEY POWER STATION, UNIT 1)

ADAMS ML16089A007

Beaver Valley Power Station - Integrated Inspection Report 05000334/2015004 and 05000412/2015004

ADAMS Accession No. ML16088A388

Beaver Valley Power Station, Unit Nos. 1 and 2 – Request for Additional Information Regarding License Amendment Request to Adopt National Fire Protection Association Standard 805

ADAMS Accession No. ML16084A844

Beaver Valley, Unit 1 - Sixth Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049).

ADAMS Accession No. ML16057A103

Meeting to Discuss BVPS Draft PRA RAI - Slides.

ADAMS Accession No. ML16089A062

Beaver Valley, Units 1 and 2 - Supplemental Information Regarding License Amendment Request to Adopt National Fire Protection Association Standard 805.

ADAMS Accession No. ML16055A160

Beaver Valley, Units 1 and 2 - Submittal of Discharge Monitoring Report for January 2016.

ADAMS Accession No. ML16061A071

Beaver Valley, Units 1 and 2 - Response to NRC Request for Additional Information, per 10 CFR 50.54(f) Regarding the Flooding Aspects of Recommendation 2.1 of the Near-Term Task Force (NTTF) Review of Insights from the Fukushima Dai-ichi Accident.

ADAMS Accession No. ML16063A288

Beaver Valley Unit 2 - Draft Operating Exam (Sections A, B, and C) (Folder 2).

ADAMS Accession No. ML15355A244

Beaver Valley Unit 2 - Final Operating Exam (Sections A, B, and C) (Folder 3).

ADAMS Accession No. ML15355A238

Portsmouth Facilities

Request for Additional Information Regarding 10 CFR 70.72 ACP and Lead Cascade Facility Changes for CY 2015.

ADAMS Accession No. ML16075A404

Transmittal of Security Incident Log per 10 CFR 95.75(b) for American Centrifuge Operating, LLC.

ADAMS Accession No. ML16075A259

Notification of Cessation of Principal Activities at the American Centrifuge Lead Cascade Facility.

ADAMS Accession No. ML16074A405

NR-2605-0004, Decommissioning Funding Plan for the American Centrifuge Lead Cascade Facility.

ADAMS Accession No. ML16057A250

Submittal of Revision to the Decommissioning Program for the American Centrifuge Lead Cascade Facility.

ADAMS Accession No. ML16057A249

Fermi 1

No reports

Fermi 2

ANNUAL ASSESSMENT LETTER FOR FERMI-2 (REPORT 05000341/2015006)

ADAMS Accession Number ML16060A278

Ltr. 03/29/16 Fermi Power Plant - Notification of an NRC Triennial Heat Sink Performance Inspection and Request for Information Inspection Report 05000341/2016002

ADAMS Accession Number ML16090A103

License Amendment Request to Revise Integrated Leak Rate Test (Type A) and Type C Test Intervals.

ADAMS Accession No. ML16082A309

Transcript of Advisory Committee on Reactor Safeguards Plant License Renewal Subcommittee Meeting - March 2, 2016

ADAMS Accession No. ML16082A383

Fermi 3

No reports