

To: Jim Mehl, ERU Supervisor  
From: Zack Clayton, Rad Coordinator  
Subject: September Monthly Report  
Date:

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## Beans

Training: 1  
Drills: 3  
Meetings: 4  
Technical Assistance: 3  
Public Assistance: 1

Web Page Views: There were 52 page views in September.

## Coming Attractions

10/2-3 Perry Ingestion Exercise  
10/9 URSB at Columbiana County  
10/10 Terrorism Annex procedures  
10/23 Exercise After Action  
10/25 NEPAC

## Facility updates

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

Davis-Besse operated at full power for September.

### **Perry Nuclear Power Plant**

Perry operated for the entire month but was at reduced power for portions of it for maintenance and testing.

### **Beaver Valley Power Station**

On Thursday September 6, 2012 the Beaver Valley Nuclear Power Station notified the State that offsite power was temporarily lost to plant systems. An electrical bus in the

switchyard was deactivated while the redundant electrical bus was offline for maintenance. Power was maintained by the onsite supply and the emergency diesel generators remained available during this event. The electrical bus undergoing maintenance was reactivated and power was restored within an hour of the deactivation. While the event is reportable to the NRC it did not meet the criteria for an emergency declaration. See Event 48283.

### **Beaver Valley Unit I**

Unit I operated at full power for September.

### **Beaver Valley Unit II**

Unit II started September at full power and coasted down to the start of a refueling outage September 24.

### **Fermi II**

Fermi II operated at 68 per cent power for most of September due to a recirculating reactor pump issue.

There was a loss of power in the switchyard which caused an automatic scram on August 14. See Event No. 48309.

### **Fermi III**

There were no reports for Fermi III in September.

### **Portsmouth Enrichment Plant**

There were no reports for Portsmouth for September.

### **Activity**

- |         |  |
|---------|--|
| 9/5     | Working Group at Ohio EMA. Agency and plant updates. Discussion of the first Perry dry run and the second dry run later in the month to address the discovered issues. |
| 9/11-12 | Perry dry run exercise. This tested the procedures put in place after the first dry run. It went much more smoothly.   |
| 9/17    | Teleconference regarding the Advanced Party Checklist.   |

- 9/18-19 RAT and IZRRAG training with USEPA, DOE, and NRC addressing lessons learned from the Liberty exercise and the response to Fukushima. The emphasis for the ingestion portion was on late phase issues which are not usually addressed during an exercise.
- 9/20 CMMRS RDD Drill. The group meeting at the Dose Assessment Room also discussed forming a planning group for a radiological annex to the terrorism plan.
- 9/26 Working Group at Ohio EMA. Agency and plant updates. Discussion of the Perry exercise in October and logistic issues were addressed. This meeting was held early to accommodate the Exercise the first week of October.

## Office Issues

No office issues of note.

## News, NRC Reports, and Statistics

### Operating Power Levels

September

Date	BV1	BV2	DB	Perry	Fermi2	
1	100	100	100	97	68	
3	100	100	100	100	68	
10	98	97	100	100	68	
17	100	93	100	100	0	Scram due to loss of switchyard.
22	100	90	100	66	68	
23	100	60	100	72	68	
24	100	0	100	100	68	
30	100	0	100	100	68	

### Information Notices

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

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

or to access generic communications files on the NRC Homepage:

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

To access these documents use the ADAMS Accession number listed with the title.  
This is in the format of : ML #####

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Ltr 08/30/12 Davis-Besse Summary of Public Meeting Regarding Shield Building Crack  
ADAMS Accession Number ML12243A283

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Beaver Valley Power Station, Unit No. 2 – Upcoming Steam Generator Tube Inservice  
Inspection (TAC No. ME9427)

ADAMS Accession No.: ML12241A290

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Fermi 2 - Issuance of Amendment for Adoption of TSTF-306

ADAMS Accession Number: ML12207A504

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Beaver Valley Power Station Units 1 and 2 - Mid-cycle Performance Review and  
Inspection Plan 2012

ADAMS Accession No.: ML12240A242

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Mid-Cycle Assessment Letter for Davis- Besse Nuclear Power Station –

ADAMS Accession No.: ML12248A343

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Mid-Cycle Assessment Letter for Perry Nuclear Power Plant –

ADAMS Accession No.: ML12248A312

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Mid-Cycle Assessment Letter for Fermi Power Plant Unit 2 –

ADAMS Accession No.: ML12248A370

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Clarification of Submission of Requests for Relief or Alternatives Under 10 CFR 50.55a

ADAMS Accession No.: ML111150172

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Davis-Besse Nuclear Power Station; NRC Security Baseline Inspection Report  
05000346/2012403(DRS) Preliminary Greater Than Green Finding – Cover Letter Only

ADAMS Accession Number ML12254A404

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Ltr 09/10/12 Davis-Besse Requalification Program Inspection

ADAMS Accession Number ML12255A029

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Davis-Besse Nuclear Power Station, Unit No. 1 - Safety Evaluation in Support of 10  
CFR 50.55a Request RP-2 and RP-4 Regarding Inservice Testing

ADAMS Accession Number: ML12242A499

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of Information Notice 2012-17: Inappropriate Use of Certified Material Test Report Yield  
Stress and Age-Hardened Concrete Compressive Strength in Design Calculations,  
dated, September 6, 2012

ADAMS Accession No.: ML121840075

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Ltr 09/13/12 Fermi Power Plant, Unit 2; NRC Baseline Emergency Preparedness  
Biennial Exercise Inspection Report 05000341/2012503(DRS)  
ADAMS Accession Number ML2258A015

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Beaver Valley Power Station: NRC Material Control and Accounting Program  
Inspection Report 05000334/2012403 and 05000412/2012403  
ADAMS Accession No: ML12262A377

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BEAVER VALLEY POWER STATION, UNIT 2: INITIAL OPERATOR LICENSING  
OPERATING TEST AND WRITTEN EXAMINATION APPROVAL  
ADAMS Accession No. ML12263A060

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BEAVER VALLEY POWER STATION: NRC TRIENNIAL FIRE PROTECTION  
INSPECTION REPORT 05000334/2012007 AND 05000412/2012007, EXERCISE OF  
ENFORCEMENT DISCRETION  
ADAMS Accession No. ML12265A028

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Beaver Valley: Forthcoming Teleconference Meeting with FirstEnergy Nuclear  
Operating Company (TAC Nos. ME9015 and ME9016)  
ADAMS Accession No.: ML12263A431

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SA-12-17, Security Breach at the Y12 Department of Energy Nuclear Facility, ADAMS  
Accession No.: ML12256A071

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The 2011 Annual Low-Level Radioactive Waste Management Report is available at:  
<http://www.odh.ohio.gov/odhprograms/rp/radprot/radppub1.aspx>

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## News

### NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION  
Office of Public Affairs Telephone: 301/415-8200  
Washington, D.C. 20555-0001  
E-mail: opa.resource@nrc.gov Site: www.nrc.gov  
Blog: <http://public-blog.nrc-gateway.gov>

No. 12-097

August 31, 2012

### NRC FINALIZES GUIDANCE DOCUMENTS FOR POST-FUKUSHIMA REQUIREMENTS

The Nuclear Regulatory Commission has issued Interim Staff Guidance (ISG) to U.S. nuclear power plants to ensure proper implementation of three Orders the agency issued in March, in response to lessons learned from the Fukushima Dai-ichi nuclear accident.

The ISGs represent acceptable approaches to meeting the Orders' requirements before their Dec. 31, 2016, compliance deadline. The ISGs are not mandatory, but U.S. nuclear power plants would have to seek NRC approval if they wanted to follow a different compliance approach. The NRC issued draft versions of the ISGs on May 31 and asked for public input; the final ISGs reflect information gained from the month-long comment period and subsequent public meetings.

The first Order requires all U.S. plants to better protect portable safety equipment put in place after the 9/11 terrorist attacks and to obtain sufficient equipment to support all reactors and spent fuel pools at a given site simultaneously. The ISG for this Order endorses the industry's updated guidance for dealing with a scenario that knocks out all of a plant's alternating current electric sources. The updated approach includes the use of backup power supplies for devices that would burn off accident-generated hydrogen before it could accumulate to explosive levels. The staff concludes the updated approach will successfully implement the Order. The ISG is available in the NRC's electronic document database, ADAMS, under accession number ML12229A174; the associated industry document is available under accession number ML12242A378.

The second Order applies only to U.S. boiling-water reactors that have "Mark I" or "Mark II" containment designs. Mark I reactors must improve installed venting systems that help prevent core damage in the event of an accident; Mark II reactors must install these venting systems. The ISG for this Order provides more detailed technical information on the vents, as well as how vent designs and operating procedures should avoid, where possible, relying on plant personnel taking actions under hazardous conditions. The second ISG is available in ADAMS under accession number ML12229A475.

The third Order requires all plants to install enhanced equipment for monitoring water levels in each plant's spent fuel pool. The ISG for this Order largely endorses an industry document that the staff concludes will successfully implement the Order. The ISG defines in more detail the water levels the new equipment must accurately report, as well as standards for equipment mounting, powering and testing, personnel training and other criteria. The final ISG notes several areas, including instrument qualifications and instrument protection from falling debris, where the industry revised its initial approach. An exception in the staff's endorsement sets specific seismic criteria to ensure the instruments will survive an earthquake. This ISG is available in ADAMS under accession number ML12221A339; the associated industry document is available under accession number ML12240A304.

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News releases are available through a free *Listserv* subscription or by clicking on the EMAIL UPDATES link on the NRC homepage ([www.nrc.gov](http://www.nrc.gov)). E-mail notifications are sent to subscribers when news releases are posted to NRC's website. For the latest news, follow the NRC on [www.twitter.com/NRCgov](https://www.twitter.com/NRCgov).

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NRC NEWS  
U.S. NUCLEAR REGULATORY COMMISSION  
Office of Public Affairs Telephone: 301/415-8200  
Washington, D.C. 20555-0001  
E-mail: opa.resource@nrc.gov Site: www.nrc.gov  
Blog: <http://public-blog.nrc-gateway.gov>

No. 12-098                      September 6, 2012

## NRC DIRECTS STAFF TO CONDUCT TWO-YEAR ENVIRONMENTAL STUDY AND REVISION TO WASTE CONFIDENCE RULE

The Nuclear Regulatory Commission today directed the agency's staff to develop an environmental impact statement (EIS) and a revised waste confidence decision and rule on the temporary storage of spent nuclear fuel. The EIS and rule, which are in response to a June 8 ruling of the U.S. Court of Appeals for the District of Columbia Circuit, are to be completed within 24 months.

In a Staff Requirements Memorandum, the Commission directed the staff to "proceed directly" with development of the EIS and a revised waste confidence rule to satisfy the deficiencies the Appeals Court found in the NRC's 2010 waste confidence revision. The Commission said the staff should draw on the agency's "long, rich history" with waste confidence determinations as well as work performed by other agencies, such as environmental assessments, technical studies and reports addressing the impacts of transportation and consolidated storage of spent fuel.

The Appeals Court ruled that NRC should have considered the potential environmental effects in the event a permanent repository for disposing of spent fuel is never built, and found other deficiencies with the agency's consideration of leaks and fires involving spent fuel pools.

"Resolving this issue successfully is a Commission priority," said NRC Chairman Allison M. Macfarlane. "Waste confidence plays a core role in many major licensing actions, such as new reactors and license renewals. I applaud my fellow Commissioners for their swift action in setting a path forward to resolve the Court's remand, and we have confidence in the staff's ability to meet this demanding deadline."

"Waste confidence" is a generic finding that spent nuclear fuel can be safely stored for decades beyond the licensed operating life of a reactor without significant environmental effects. It enables the NRC to license reactors or renew their licenses without examining the effects of extended waste storage for each individual site pending ultimate disposal.

On Aug. 7, the Commission issued an Order that NRC will not issue licenses dependent on the waste confidence rule – such as new reactors and renewal of existing reactor operating licenses – until the Court's remand is appropriately addressed. That Order remains in effect.

The Commission directed the staff to “provide ample opportunity for public comment” on the EIS and rule, even while looking for ways to make the EIS and rulemaking process more efficient. It said the staff should form an inter-office team of the agency’s most-accomplished environmental experts to develop the EIS and resolve comments “with the urgency that this matter deserves.”

The NRC’s Office of Nuclear Material Safety and Safeguards, which has regulatory responsibility over spent fuel storage and disposal, has established a Waste Confidence Directorate to develop the waste confidence EIS. The new directorate will be headed by Dr. Keith I. McConnell, currently deputy director of the Division of Waste Management and Environmental Protection in the Office of Federal and State Materials and Environmental Management Programs.

The Commission’s SRM, a staff paper outlining options to address the Court’s ruling (COMSECY-12-0016), and the Commissioners’ vote sheets with comments, are available on the NRC website.

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## NRC NEWS

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Blog: <http://public-blog.nrc-gateway.gov>

No. 12-100            September 10, 2012  
NRC ISSUES DRAFT GUIDANCE FOR EXAMINING  
PLANT RESPONSE TO UPDATED SEISMIC HAZARDS

The Nuclear Regulatory Commission has issued draft Interim Staff Guidance to U.S. nuclear power plants for evaluating how re-analyzed earthquake hazards could affect plant performance. The re-analyses and evaluations stem from lessons learned from the Fukushima Dai-ichi nuclear accident and information from companies applying for new reactor licenses.

The guidance provides a means for meeting the requirements in a request for information the staff issued on March 12. The guidance is not mandatory, but should licensees take a different approach, the NRC will review both their methodology and results when they submit their response. The NRC will accept comments on the draft guidance until Oct. 10.

The NRC is requiring all U.S. plants to re-analyze potential earthquake hazards at their sites using the latest available information. Plants in the eastern and central United States will complete these site-specific analyses by late 2013 and plants west of the Rocky Mountains by early 2015, based on the availability of information from the U.S.

Geological Survey. The analyses will update potential ground motions across a spectrum, or range of vibration frequencies, and the plants will compare the new spectrum to their existing design basis. If the new ground motion spectrum exceeds that in the plant's original design basis, the plants have two options for analyzing the risks associated with the new information. One involves a broad examination of probable seismic risks. The other is a "seismic margin analysis," determining how the plant's structures and important components would respond to the ground motion. The guidance provides procedures for performing a seismic margin analysis.

The guidance sets several conditions on the margin analysis, including covering at least 72 hours post-quake, or until the plant would safely shut down, whichever would take longer. Other conditions assume the plant loses all power from the transmission grid, account for the possibility of an earthquake "liquefying" the soil around the plant's buildings, incorporate the ways in which high-frequency vibrations could affect electrical systems and smaller mechanical components, and factor in potential non-earthquake system failures and human errors. The guidance is available in ADAMS under accession number ML12222A327.

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## **NUCLEAR WASTE:**

### **NRC will revise storage rule**

Hannah Northey, E&E reporter

Published: Thursday, September 6, 2012

Federal regulators will spend the next two years revising a controversial policy that a federal appeals court threw out this summer that deals with storing nuclear waste at sites across the country.

The Nuclear Regulatory Commission today [ordered](#) the agency's staff to develop an environmental analysis and revise the agency's "waste confidence" rule within two years as well as the commission's rule for the temporary storage of spent nuclear fuel. The policy is a generic finding that spent nuclear fuel can be safely stored for decades beyond the licensed operating life of a reactor without significant environmental effects. The agency's decision is in direct response to a federal appeals court's ruling in June that the agency did not sufficiently analyze the environmental effects of storing nuclear waste without a permanent solution in sight ([Greenwire](#), Aug. 7).

"Resolving this issue successfully is a commission priority," NRC Chairwoman Allison Macfarlane said in a statement. "Waste confidence plays a core role in many major licensing actions, such as new reactors and license renewals."

The court's ruling also prompted the commission to wait before approving licenses for new nuclear plants or renewing the licenses of existing facilities until the dilemma of how to store hot, radioactive waste at sites across the country is resolved.

The NRC staff must now address deficiencies that the court found in the commission's revised 2010 waste confidence rule.

The court found that NRC failed to consider how temporary nuclear waste storage sites would be affected if the United States failed to build a permanent waste repository.

Waste is currently being stored at reactors across the country after Congress reached an impasse over the controversial nuclear waste site under Yucca Mountain, Nev.

The court also said NRC failed to consider leaks and fires at spent fuel pools.

The NRC called on the staff to draw from the agency's "long, rich history" with waste confidence determinations as well as work performed by other agencies, such as environmental assessments, technical studies, and reports addressing the impacts of transportation and consolidated storage of spent fuel.

NRC staff were also ordered to provide "ample opportunity" for public comment and to form an interoffice team of environmental experts to develop the environmental impact statement and resolve outstanding issues.

The NRC's Office of Nuclear Material Safety and Safeguards, which oversees spent fuel storage and disposal, has established a Waste Confidence Directorate to develop the waste confidence EIS, according to the commission.

Keith McConnell, the deputy director of the Division of Waste Management and Environmental Protection in the Office of Federal and State Materials and Environmental Management Programs, will lead the new group.

Source: <http://www.eenews.net/Greenwire/2012/09/06/2>

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### **CR offers lifeline for Ohio enrichment plant**

Hannah Northey, E&E reporter

Published: Tuesday, September 11, 2012

A six-month spending bill that House lawmakers released last night would keep funded through November a divisive uranium-enrichment program in the election swing state of Ohio.

The continuing resolution would provide \$100 million for the American Centrifuge Plant in the village of Piketon, where Bethesda, Md.-based U.S. Enrichment Corp. (USEC) is operating a gas-centrifuge demonstration project.

The House Rules Committee will consider the legislation tomorrow and could debate the measure Thursday.

USEC entered into a \$350 million cooperative agreement with the Energy Department this summer and has so far received \$110 million to run the plant through November. Ultimately, the company hopes to commercialize the technology and secure a \$2 billion DOE loan guarantee ([E&E Daily](#), Sept. 11).

USEC spokesman Paul Jacobson said the House bill would provided a much-needed boost for the project but isn't sufficient to "bring the program to completion."

Support for USEC has been at the center of a contentious debate, with Energy Secretary Steven Chu and a host of bipartisan lawmakers arguing that the plant is key to national security and nonproliferation, and that the United States must have an indigenous source of uranium enrichment.

Critics such as former Energy Secretary Spencer Abraham, however, say USEC has been beset by technical problems and that the company is about to enter a market that will be flush with supply ([E&E Daily](#), July 10).

Source: <http://www.eenews.net/Greenwire/2012/09/11/6>

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## **NUCLEAR ENERGY:**

### **Long, hot summer raised questions about how power plants might fare in warming world**

Hannah Northey and Hema Parmar, E&E reporters

Published: Friday, September 14, 2012

Rising seawater temperatures forced an unprecedented shutdown last month of a nuclear reactor on the Connecticut coast.

Dominion Resources Inc. was forced to shutter Unit 2 of its Millstone nuclear plant in Waterford on Aug. 12 because water being drawn from Long Island Sound was too hot to cool emergency diesel generators and other safety-related equipment.

Dominion has recorded a steady rise in water temperatures at the plant since 1975, but the warmth recorded last month topped all, utility spokesman Ken Holt said. The plant's operating license requires that the 37-year-old reactor be shut down if cooling water tops 75 degrees Fahrenheit ([Greenwire](#), Aug. 14).

"This is the first year that it's been a real challenge for us, the temperatures being that high," Holt said. "In previous summers, you get a week where it approaches the limit, but this summer it's been closer to the limit longer than any other summer on record."

This summer -- which the National Weather Service says is the third warmest on record since 1895 -- has caused the most trouble for reactors in the Northeast and Midwest, a challenging situation compounded by a record drought across the Great Plains. Jake Crouch, a scientist at NOAA's National Climatic Data Center, said the warming trend makes it likely that the United States will see more summers just like this.

"It's like this will be the new normal, as opposed to what we've seen in the past," Crouch said.

Some are treating the Millstone shutdown as a wakeup call. Nuclear Regulatory Commission Chairwoman Allison Macfarlane has asked her staff to examine the effects of climate change on reactors. And House Energy and Commerce Committee ranking member Henry Waxman (D-Calif.) and Rep. Rush Holt (D-N.J.) urged the panel's Republican leadership to hold a hearing on the matter.

Nuclear reactors are "canaries in the coal mine" because they are more sensitive to warming temperatures than other generators, said Mihaela Carstei, associate director of the nonpartisan Atlantic Council's Energy and Environment Program. She added that it's an issue she has flagged for years.

"The trend is that we're going to experience higher and more frequent peak temperatures, and with increased temperature brings warmer water or warmer air, and you may have to switch to dry cooling," Carstei said. "We're going to be in a very tight situation because it's harder to put in a lot of investment all at the same time, instead of planning and adapting."

But industry officials say the problem is manageable. This summer's heat waves did not disrupt electricity production at the country's 104 reactors, they say, and Millstone's license is "conservative" and possibly outdated.

Steve Kerekes, a spokesman for the Nuclear Energy Institute, said 85 to 90 percent of nuclear facilities operated at full capacity this summer, which is consistent with previous years.

"If there was any kind of substantial impact related to summer temperature, there's no way we could maintain that number," Kerekes said. "If that trend existed, there's no way we could post those numbers."

But David Lochbaum, director of the Union of Concerned Scientists' Nuclear Safety Project, said plants have been forced to power down more frequently during the past two decades at a rate that may not yet be detected in NEI's power production analyses. "If plants had to shut down for months, [the statistics] would pick it up," Lochbaum said. "But if only for a matter of days, then that wouldn't show up."

### **'Time will tell'**

Some federal scientists are warning that power plants will face challenges from hotter air temperatures, reduced rainfall and increased competition for water in the coming years.

Michael Hightower, lead researcher for Sandia National Laboratories' Water for Energy project, said warming is exacerbated in shallow water bodies, such as Long Island Sound, where the Millstone plant is located. Nuclear plants adjacent to large open bodies of water, he said, are less likely to feel the effect of rising temperatures because water there is traditionally cold, he said.

Millstone's closure suggests the warming trend is speeding up and spreading, Hightower said.

"It's suggesting that the trends are accelerating, so we're seeing it in more and more areas and more and more parts of the country," he said. "I wouldn't say that every coastal power plant is going to have a problem, but power plants that are in shallower regions -- bays, estuaries -- that are in places that have traditionally warmer water temperatures will see this as a bigger issue."

Issues arise because nuclear plants rely on water from rivers, lakes and oceans to cool the plants' safety systems like the control room and other machinery. If the water is too hot, it is incapable of taking heat away from those processes and critical cooling safety equipment.

Nuclear plants also face temperature limits on water they discharge. If the water's considered too warm for aquatic life, reactor operators must power down or close. Hightower said accelerating warming trends were expected to begin affecting cooling water for the nuclear fleet this decade by 2015, but it is happening sooner than expected.

"These temperatures are going to continue to increase," Hightower said. "We're looking at this becoming more the norm than a drought."

Other Midwest power plants also felt the heat this summer.

In Illinois, the twin-unit Braidwood plant was on alert after its 2,500-acre cooling pond warmed to more than 100 degrees Fahrenheit ([Greenwire](#), July 18).

But sources say it's not yet understood how the rising temperatures will affect each reactor site.

Research on how reactors and other power plants cope with changing water temperatures and availability is lagging, said Vince Tidwell, a nuclear expert at Sandia National Laboratories. "No one has looked at it, on a power-plant-by-power-plant level," he said.

William Skaff, NEI's director of policy analysis, said that if conditions worsen, plants can be upgraded to handle hotter water. Time will tell, he said, whether computer models on water temperature and quantity are correct.

"You have uncertainty in the models that deal with water temperatures and availability, then you have studies that try to calculate effects on power plants and they're uncertain because each plant is different," Skaff said.

"What we have to do is look at the situation right now and there are things that can be done in terms of intake temperatures if, say, 20 to 30 years from now, temperatures become a problem."

### **Looming challenges**

If scorching summers are the new normal, plant operators could be forced to spend millions of dollars to study whether their plants can safely operate using warmer water and possibly install new equipment to safeguard the plants, said Lake Barrett, the former head of the Energy Department's Office of Civilian Radioactive Waste Management.

Millstone, for example, may have to install bigger "heat exchangers," large structures filled with hundreds of metal tubes that extract the heat from water as it moves through the plant.

Operators could also see financial loss when plants are closed, even for a matter of days. Dominion's Holt would not say how much the company lost when the Millstone plant was shuttered for more than a week, but he did say the utility didn't address the issue sooner because the needed study was a costly, long-term project.

But Barrett said warming waters would not halt the construction of new plants.

"Nuclear power plants are more difficult and are more challenged, assuming there's global heating of significance," Barrett said. "But to me, it's not a major determining factor on running existing plants or building new plants."

The Union of Concerned Scientists' Lochbaum also said the licensing regime that deals with temperatures should be revamped.

Many temperature limits are based on data on water temperature trends over past decades, he said, but those limits are changing and companies need to use forecasting data to look at possible impending climate trends.

"When plants go for relicensing, that's an opportunity to look forward," Lochbaum said.

"It's a chance to look at the margins that are available to look at adjustments to revise them."

Scientists are also exploring ways to reduce power plants' reliance on water -- particularly relevant for the nuclear industry, which uses more water than any other electricity generator.

### **Search for alternatives**

The Electric Power Research Institute is researching the use of chemically engineered nanoparticles to cool water. The particles would allow the water to soak up more heat and reduce the amount of water the generators need.

The technology, EPRI said, could cut water usage at some power plants by as much as 20 percent. It is one of four research projects the institute hopes will be "out of the box" game-changers for the industry.

EPRI is also studying whether refrigerants can be used to chill water and thereby reduce the need for energy-intensive cooling towers.

That technology, which could slash some plants' water usage by 75 percent, is slated to be tested next year in a pilot project at Georgia Power's Plant Bowen, about 50 miles northwest of Atlanta.

Even so, Kent Zammit, senior program manager with EPRI's water and ecosystems group, said the nuclear industry may be slow to implement the developing technologies because regulations are so strict.

"In general, nuclear plants would be among the last ... due to high safety requirements," Zammit said. "It would be a risk to the capital."

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## Plant Reports

Power Reactor	Event Number: 48283
Facility: BEAVER VALLEY Region: 1 State: PA Unit: [1] [ ] [ ] RX Type: [1] W-3-LP,[2] W-3-LP NRC Notified By: ROBERT KRISTOPHEL HQ OPS Officer: PETE SNYDER	Notification Date: 09/06/2012 Notification Time: 19:20 [ET] Event Date: 09/06/2012 Event Time: 14:16 [EDT] Last Update Date: 09/06/2012
Emergency Class: NON EMERGENCY 10 CFR Section: 50.72(b)(3)(v)(D) - ACCIDENT MITIGATION	Person (Organization): RICHARD CONTE (R1DO)

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

### Event Text

#### BOTH OFFSITE POWER SOURCES INOPERABLE

"At 1416 EDT, after consultation with the Unit 1 control room, the #1 138 KV bus in the Beaver Valley switchyard was deenergized by the grid system operator in response to a degraded switchyard breaker. The bus loss caused the Unit 1 A train offsite power supply to be inoperable. The Unit 1 B train offsite power supply was previously inoperable due to planned maintenance on its transformer cooling fan control circuit. The Unit 1 B train offsite power supply remained energized and available during this event. Both Emergency Diesel Generators remained operable and both emergency buses remained energized from the onsite source and operable

during this event.

"At 1425 EDT the #1 138 KV bus was re-energized. The planned maintenance was completed on the B train offsite power supply transformer. Following testing, at 1452 EDT both offsite power supplies were declared operable.

"This notification is provided in accordance with 10CFR50.72(b)(3)(v)(D) since both offsite power supplies were inoperable from 1416 EDT to 1452 EDT on 9/6/12."

The licensee notified the NRC Resident Inspector.

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Agreement State	Event Number: 48273
Rep Org: OHIO BUREAU OF RADIATION PROTECTION Licensee: ACUREN INSPECTION, INC Region: 3 City: DAYTON State: OH County: License #: 03320990006 Agreement: Y Docket: NRC Notified By: STEPHEN JAMES HQ OPS Officer: BILL HUFFMAN	Notification Date: 09/04/2012 Notification Time: 15:01 [ET] Event Date: 07/24/2012 Event Time: [EDT] Last Update Date: 09/04/2012
Emergency Class: NON EMERGENCY 10 CFR Section: AGREEMENT STATE	Person (Organization): KENNETH RIEMER (R3DO) FSME EVENT RESOURCE (EMAI)

### Event Text

#### AGREEMENT STATE REPORT - RADIOGRAPHY CAMERA SOURCE DISCONNECT

The following information was provided by the Ohio Bureau of Radiation Protection via e-mail:

"Licensee experienced a source disconnect with an industrial radiography camera. The radiographers were working at a temporary job site and attempted to retrieve source after completing the first exposure of the workday. Source would not retrieve and a source disconnect was suspected, with the source remaining at the exposure end of the guide tube. The source position was verified by on-site radiation surveys. The guide tube (containing the source at the far end) was disconnected from the camera and moved to an isolated location at the client site. The radiographers established appropriate barriers and entry controls for the temporary area and maintained constant surveillance until licensee's source retrieval personnel arrived. Retrieval personnel were able to reconnect the source using a special tool and the

source was able to be retracted back into the camera. The camera and all associated equipment were sent to the manufacturer for evaluation. Cause of the problem was determined to be a worn connecting collar around the plug assembly and failure to follow a source connect procedure recommended by the manufacturer. Ohio Bureau of Radiation Protection will visit site and conduct an investigation.

"The licensee's report was received at Ohio Bureau of Radiation Protection today, 9/4/12, at approximately 1240 EDT.

"Based on manufacturer's evaluation of the equipment used, Ohio Bureau of Radiation Protection will conduct an investigation of licensee's maintenance program and to determine reasons for failure by licensee to make initial notification and follow-up written report in a timely manner."

No significant personnel exposure was received during retrieval procedures.

Ohio Report OH 120003

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Power Reactor	Event Number: 48309
Facility: FERMI Region: 3 State: MI Unit: [2] [ ] [ ] RX Type: [2] GE-4 NRC Notified By: BRETT JEBBIA HQ OPS Officer: DONG HWA PARK	Notification Date: 09/14/2012 Notification Time: 19:27 [ET] Event Date: 09/14/2012 Event Time: 16:03 [EDT] Last Update Date: 09/14/2012
Emergency Class: NON EMERGENCY 10 CFR Section: 50.72(b)(2)(iv)(A) - ECCS INJECTION 50.72(b)(2)(iv)(B) - RPS ACTUATION - CRITICAL	Person (Organization): MICHAEL KUNOWSKI (R3DO) DAVID SKEEN (NRR) WILLIAM GOTT (IRD)

Unit	SCRAM Code	RX CRIT	Initial PWR	Initial RX Mode	Current PWR	Current RX Mode
2	A/R	Y	68	Power Operation	0	Hot Shutdown

**Event Text**

AUTOMATIC REACTOR SCRAM DUE TO THE LOSS OF THE 120 KV SWITCHYARD

"At 1603 EDT, Fermi 2 automatically scrammed due to onsite loss of 120 kV switchyard. All control rods fully inserted. The lowest Reactor Water Level (RWL) reached was 98 inches. Division I diesels, EDG-11 and EDG-12, automatically started and loaded. HPCI and RCIC automatically started and restored RWL. RWL is currently being maintained in the normal level band with Condensate/Feed and Control Rod Drive (CRD) systems. No Safety Relief Valves (SRV) actuated. All

isolations and actuations for RWL 3 and 2 occurred as expected. Investigation into loss of 120 kV switchyard continues.

"At the time of the scram, all Emergency Core Cooling (ECCS) and Emergency Diesel Generators (EDG) were operable with the exception of EDG-11 which was available vice operable due to ventilation work, and no other safety related equipment was out of service. This report is being made in accordance with 10CFR50.72(b)(2)(iv)(A), any event that results in ECCS discharge into the reactor coolant system as a result of a valid signal and 10CFR50.72(b)(2)(iv)(B), any event that results in actuation of the reactor protection system (RPS) when the reactor is critical."

EDG-11 and EDG-12 are performing all of their functions and providing power to the Division I AC buses. Temperatures are being monitored in the room containing EDG-11 and the room is not approaching any temperature limits. The MSIVs are open with decay heat being removed via steam to the main condenser using the bypass valves.

The licensee has notified the NRC Resident Inspector.

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Power Reactor	Event Number: 48319
Facility: PERRY Region: 3 State: OH Unit: [1][ ][ ] RX Type: [1] GE-6 NRC Notified By: LLOYD ZERR HQ OPS Officer: DONG HWA PARK	Notification Date: 09/18/2012 Notification Time: 12:58 [ET] Event Date: 07/23/2012 Event Time: 20:57 [EDT] Last Update Date: 09/18/2012
Emergency Class: NON EMERGENCY 10 CFR Section: 50.73(a)(1) - INVALID SPECIF SYSTEM ACTUATION	Person (Organization): MARK RING (R3DO)

Unit	SCRAM Code	RX CRIT	Initial PWR	Initial RX Mode	Current PWR	Current RX Mode
1	N	Y	96	Power Operation	96	Power Operation

**Event Text**

**INVALID SYSTEM ACTUATIONS**

"On July 23, 2012, at 2057 hours, the Perry Nuclear Power Plant experienced a loss of the normal power supply to the Reactor Protection System (RPS) A electrical bus. The loss of RPS bus A caused an actuation of several Division 1 containment outboard isolation valves. The actuation signal caused full closure of one or more valves in each of the following Division 1 subsystems: Main Steam line drains, Containment Radiation Monitor, Drywell Radiation Monitor, Reactor Water Cleanup, Fuel Pool Cooling and Cleanup, Liquid Radwaste Sumps, Containment Vessel Chilled Water, Containment Vacuum Relief, Condensate Transfer and Storage, Mixed Bed

Demineralizer and Distribution, Containment Personnel Airlocks, Service Air, and Instrument Air. Division 2 components and valves were not affected.

"This event is considered an invalid system actuation reportable under 10 CFR 50.73(a)(2)(iv)(A). The isolation was not initiated in response to actual plant conditions or parameters, and was not a manual initiation. Therefore, this notification is provided via a 60 day optional phone call in accordance with 10 CFR 50.73(a)(1) instead of submitting a written Licensee Event Report.

"The event meets reporting criteria specified in 10 CFR 50.73(a)(2)(iv)(B)(2) as a general containment isolation valve signal affecting containment isolation valves in more than one system. All affected systems functioned as expected in response to an outboard isolation signal. The valves were reopened in accordance with plant procedures. The failure mechanism that caused the loss of RPS bus A was a degraded voltage regulator. The voltage regulator was replaced and retested with satisfactory results.

"The NRC Resident Inspector has been notified."

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Power Reactor	Event Number: 48338
Facility: FERMI Region: 3 State: MI Unit: [2] [ ] [ ] RX Type: [2] GE-4 NRC Notified By: BRETT JEBBIA HQ OPS Officer: BILL HUFFMAN	Notification Date: 09/24/2012 Notification Time: 11:23 [ET] Event Date: 09/24/2012 Event Time: 04:07 [EDT] Last Update Date: 09/24/2012
Emergency Class: NON EMERGENCY 10 CFR Section: 50.72(b)(3)(xiii) - LOSS COMM/ASMT/RESPONSE	Person (Organization): MARK RING (R3DO)

Unit	SCRAM Code	RX CRIT	Initial PWR	Initial RX Mode	Current PWR	Current RX Mode
2	N	Y	68	Power Operation	68	Power Operation

**Event Text**

**EMERGENCY RESPONSE DATA SYSTEM PROCESS COMPUTER DATA SERVER FAILURE**

"At 04:07 EDT on September 24, 2012, Fermi 2 experienced a failure of a data server within the Process Computer system. The failure of the data server does affect data input to the server providing information to the Emergency Response Data System (ERDS). ERDS is currently not receiving updated information from Fermi data systems. This loss in capability is being reported as a loss of assessment capability in accordance with 10 CFR 50.72(b)(3)(xiii).

"Indications of related plant variables are available in the Main Control Room. The Visual Annunciator System (VAS) and other portions of the Process Computer system remain functional. Meteorological and process effluent radiological monitor indications are available and dose assessment capability is available. Fermi 2 personnel will use normal phone communications to update NRC Operations Center in the case of an event declaration. Information normally provided by ERDS can be transmitted via the notification system as described in the Radiological Emergency Response Preparedness Plan."

The licensee has notified the NRC Resident Inspector.

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Part 21	Event Number: 48350
Rep Org: GE HITACHI NUCLEAR ENERGY Licensee: GE HITACHI NUCLEAR ENERGY Region: 1 City: WILMINGTON State: NC County: License #: Agreement: Y Docket: NRC Notified By: DALE PORTER HQ OPS Officer: VINCE KLCO	Notification Date: 09/27/2012 Notification Time: 11:01 [ET] Event Date: 09/27/2012 Event Time: 11:01 [EDT] Last Update Date: 09/27/2012
Emergency Class: NON EMERGENCY 10 CFR Section: 21.21(a)(2) - INTERIM EVAL OF DEVIATION	Person (Organization): RONALD BELLAMY (R1DO) REBECCA NEASE (R2DO) CHRISTINE LIPA (R3DO) GREG WERNER (R4DO) PART 21 GROUP (EMAI)

**Event Text**

**ERROR IN MAIN STEAM LINE HIGH FLOW CALCULATIONAL METHODOLOGY**

The following information was received by facsimile:

"GEH [General Electric Hitachi] has recently discovered that calculations of choked flow rate in the Main Steam Line (MSL) of GEH BWRs may not be conservative, with the potential impacts to be evaluated for existing MSL high-flow setpoints and Analytical Limits (ALs).

"GEH has not completed the evaluation of this condition to determine reportability under 10CFR Part 21 and is therefore issuing this 60-day Interim Notification. GEH will close or issue an update on this matter on or before December 12, 2012. Given the early status of the evaluation, GEH has no recommended actions at this time. This 60-day Interim Notification is issued in accordance with 10CFR Part 21.21(a)(2), and

will be sent to all GE  
BWR/2-6 plants and ABWR plants."

Affected plants include the following: Nine Mile 1-2, **Fermi 2**, Columbia, Grand Gulf, River Bend, FitzPatrick, Pilgrim, Vermont Yankee, Clinton, Dresden 2-3, LaSalle 1-2, Limerick 1-2, Oyster Creek, Peach Bottom 2-3, Quad Cities 1-2, **Perry 1**, Duane Arnold, Cooper, Susquehanna 1-2, Brunswick 1-2, Hope Creek, Hatch 1-2, Browns Ferry 1-3, and Monticello.