To: Jim Mehl, ERU Supervisor

From: Zack Clayton, Rad Coord

Subject: November Monthly Report

Date: December 14, 2009

Beans:

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

Web Page Views: There were no web statistics for November because DAS has temporarily disabled the reporting package.

Coming Attractions:

WG	12/11
Working Group	1/6/2009
URSB	1/11/2009
NEPAC	1/28/2009

Facility Updates:

Davis Besse Nuclear Power Station

Davis Besse started November in a small power decrease for Thermal Moderator testing. The plant operated for the rest of November at full power.

Perry Nuclear Power Plant

On November 3, 2009, Perry resumed operation after a maintenance outage, that started on October 16, 2009, to investigate the failure of the 'B' emergency service water (ESW) pump. The ESW pumps provide cooling water to safety related equipment to enable the equipment to perform their safety functions. Perry NPP operated at full power for the rest of November.

Beaver Valley Power Station

Beaver Valley Unit I

Beaver Valley Unit I operated at full power for ember.

Beaver Valley Unit II

Beaver Valley Unit 2 began November in a refueling outage extended by repairs to two J-weld connections on the reactor head.

Unit 2 of the Beaver Valley Power Station declared an Unusual Event at 0305 on Tuesday, Nov. 24 due to an identified reactor coolant leakage from the residual heat removal system greater than 25 gallons per minute into the pressurizer relief tank. The leakage occurred during activities to end the refueling outage that was initiated on Oct. 12. The residual heat removal system was secured and the leak stopped; thereby terminating the Unusual Event at 0404 on Tuesday, Nov. 24. The Unit was not critical and not connected to the electrical grid. There was no impact on the health and safety of the public. See Event number 45517.

Unit 2 resumed power operations on November 26.

Fermi II

Fermi began November in a forced outage due to a hydrogen leak into the Generator stator water blanket. The repairs were finished and the unit resumed power operations November 12.

Portsmouth Gaseous Diffusion Plant

There were no reports for Portsmouth in November.

Activity:

11/5 RAT Training at the groveport field office. Meter familiarization and checks for accuracy limits. Updates on available FEMA training. Familiarization training for IZRRAG procedures and Field Team Center procedures.

11/12 IZRRAG FTC training at Ohio EMA. This was an all agencies training session and functional exercise to walk through sample assignment and turn in to the sample screening point. Several issues with the turnover procedure and sample form were identified for improvement.

Office Issues:

NRC Reports and Statistics:

November operating power levels

Date	BV1	BV2	DB	Fermi2	Perry

1	100	0	97	0	0	D-B Moderator Temp Coefficient Testing
2	100	0	100	0	2	Perry Emergency Service Water pump restored
3	100	0	100	0	18	
9	100	0	100	0	100	
12	100	0	100	25	100	Fermi Hydrogen leak repaired
16	100	0	100	100	100	
23	100	0	100	100	100	
27	100	20	100	100	100	BV2 refueling and j-weld repairs complete
30	100	89	100	100	100	

Information Notices

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Davis-Besse Inspection Report 2009 406 - Cover Letter Only
The document is publicly available and will be accessible via the public web site Electronic Reading Room in the Agency Document Access and Management System (ADAMS), http://www.nrc.gov/reading-rm/adams.html
To access this document use ADAMS Accession No. ML093060365

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Perry Inspection Report 05000440/2009004 issued 11-04-2009 -
The document is publicly available and will be accessible via the public web site Electronic Reading Room in the Agency Document Access and Management System (ADAMS), http://www.nrc.gov/reading-rm/adams.html
To access this document use the ADAMS number ML093090098

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Beaver Valley Power Station - NRC Integrated Inspection Report 05000334/2009004 and 05000412/2009004 ---
The document is publicly available and will be accessible via the public web site Electronic Reading Room in the Agency Document Access and Management System (ADAMS), http://www.nrc.gov/reading-rm/adams.html
To access this document use ADAMS Accession No. ML093090281

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Davis-Besse Nuclear Power Station, Unit No. 1 - Once-Through steam generator tube loads under conditions resulting from postulated breaks in reactor coolant system upper hot-leg large-bore piping - The document is publicly available and will be accessible via the public web site Electronic Reading Room in the Agency Document Access and Management System (ADAMS), http://www.nrc.gov/reading-rm/adams.html
To access this document use ADAMS Accession no. ML093010483

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PDF version RIS 2009-14, Licensing Approach For Uranium In Situ Recovery Facility Applications, dated November 5, 2009 (ML090290197), that has been posted to the NRR GCC Web, along with the URL for Web access to generic communications files on the NRC Homepage:
http://www.nrc.gov/reading-rm/doc-collections/gen-comm/reg-issues/2009/.

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Fermi PI&R Inspection Report 05000341/2009007 issued 11/10/09 -
The document is publicly available and will be accessible via the public web site Electronic Reading Room in the Agency Document Access and Management System (ADAMS), http://www.nrc.gov/reading-rm/adams.html
To access this document use the ADAMS number ML093140550
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Fermi Inspection Report 2009 010 --- The document is publicly available and will be accessible via the public web site Electronic Reading Room in the Agency Document Access and Management System (ADAMS),
http://www.nrc.gov/reading-rm/adams.html
To access this document use ADAMS Accession No. ML093200423
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Perry Inspection Report 2009 404 - Cover Letter Only
The document is publicly available and will be accessible via the public web site Electronic Reading Room in the Agency Document Access and Management System (ADAMS), http://www.nrc.gov/reading-rm/adams.html
To access this document use ADAMS Accession No. ML093210311
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Beaver Valley Power Station, Unit No. 2 - Verbal Authorization of an Alternative Weld Repair Method. The document is publicly available and will be accessible via the public web site Electronic Reading Room in the Agency Document Access and Management System (ADAMS), http://www.nrc.gov/reading-rm/adams.html
To access this document use Adams Accession No. ML093210282
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PDF version of Information Notice 2009-27, Revised International Nuclear And Radiological Event Scale User's Manual, dated November 13, 2009 (ML092510055), that has been posted to the NRR GCC Web, along with the URL for Web access to generic communications files on the NRC Homepage:
http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/2009/.
*****
Perry Summary of November 12, 2009 Public Meeting - ---
The document is publicly available and will be accessible via the public web site Electronic Reading Room in the Agency Document Access and Management System (ADAMS), http://www.nrc.gov/reading-rm/adams.html
To access this document use the ADAMS number ML093220409
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Beaver Valley Power Station, Unit No. 2 - Steam Generator Tube Inspections (Tac No. ME2316). The document is publicly available and will be accessible via the public web site Electronic Reading Room in the Agency Document Access and Management System (ADAMS), http://www.nrc.gov/reading-rm/adams.html
To access this document use ADAMS Accession: ML093140728
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PDF version of Information Notice 2009-30, Findings From The NRC Initiative To Assess Materials Licensees' Compliance With The NRC Decommissioning Requirements, dated November 6, 2009 (ML090920401), that has been posted to the NRR GCC Web, along with the URL for Web access to generic communications files on

the NRC Homepage:
http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/2009/.
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PDF version of the Draft Regulatory Issue Summary 2009-XX, Inservice Inspection and Testing Requirements of Dynamic Restraints (Snubbers) (ML091660539), the Comment Period ending January 11, 2010, that has been posted to the NRR GCC Web, along with the URL for Web access to generic communications files on the NRC
http://www.nrc.gov/reading-rm/doc-collections/gen-comm/docs4comment.html
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PDF version Information Notice 2009-29, Potential Failure Of Fire Water Supply Pumps To Automatically Start Due To A Fire, dated November 24, 2009 (ML091880072), that has been posted to the NRR GCC Web, along with the URL for Web access to generic communications files on the NRC Homepage:
http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/2009/.
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PDF version Information Notice 2009-28, Summary Of Fitness For Duty Program Performance Reports For Calendar Year 2008, dated November 24, 2009 (ML092650761), that has been posted to the NRR GCC Web, along with the URL for Web access to generic communications files on the NRC Homepage:
http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/2009/.
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PDF version Information Notice 2009-19, Hostile Action-Based Emergency Preparedness Drills, dated November 24, 2009 (ML092260360), that has been posted to the NRR GCC Web, along with the URL for Web access to generic communications files on the NRC Homepage:
http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/2009/.
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NUCLEAR POWER: Bingaman set to introduce bill on small reactors (11/17/2009)

Katherine Ling, E&E reporter
The chairman of the Senate Energy and Natural Resources Committee plans to introduce legislation to establish public-private partnership to license two small modular nuclear reactors, the latest in a series of pro-nuclear bills in the past three weeks.
The bill would require the Energy Department to fund applications for design certification by 2018 and an operating license by 2021 for two reactors each with a capacity of less than 350 megawatts, Sen. Jeff Bingaman (D-N.M.) told the American Nuclear Society yesterday.
"Having certified and licensable designs for small modular nuclear reactors would be a significant boost to the field of nuclear power, and would help nuclear energy be a cost-effective contender for a broader array of carbon-free electric generation needs in the future," Bingaman said.
Bingaman's small reactor bill is the latest nuclear-related bill that has surfaced since the Nuclear Energy Institute laid out its legislative priorities last month. NEI called for $100 billion in clean energy technology loan guarantees, additional tax credits, a more efficient licensing process and funding for research on spent nuclear fuel and small modular reactor designs (E&ENews PM, Oct. 26).

A significant nuclear title is also on the negotiating table for the Senate climate and energy bill currently being hashed out by Sens. John Kerry (D-Mass.), Joe Lieberman (I-Conn.) and Lindsey Graham (R-S.C.).
Bingaman's small reactor bill would "complement" a bill introduced by Sen. Mark Udall (D-Colo.) two weeks ago, he said. Udall's bill S. 2052, would authorize DOE to conduct research into modular and small-scale reactors, licensing issues, enhanced proliferation controls and cost-efficient manufacturing and construction. Bingaman is a co-sponsor on that bill.
Both bills address the issue of the costs for the "first movers" of new build construction -- the key for moving forward on nuclear energy, Bingaman said.
"Even though nuclear energy is able to compete in a cap-and-trade context, the issue comes back to motivating the first builders of these plants, who will bear the most risk," Bingaman said. "On this issue, I believe that we in Congress should promote policies to help buy down some of the first-mover risk associated with nuclear energy," he said.
Sens. Jim Webb (D-Va.) and Lamar Alexander (R-Tenn.) also unveiled nuclear-related legislation yesterday. The bill aims to double nuclear production in 20 years by providing $2.5 billion over 10 years to support license reviews for "Generation IV" reactor designs and small modular designs, nuclear work force education and research into current reactor lifetime extensions and efficiency.
The bill would also provide $100 billion in loan guarantee authority for clean energy technology -- including nuclear energy -- and pour almost $8 billion into "mini-Manhattan" projects including a project to reprocess and recycle spent nuclear fuel without creating a separate plutonium stream (E&ENews PM, Nov. 16).

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NUCLEAR POWER: New reactors 'a foolish investment,' enviro group says (11/17/2009)

Katherine Ling, E&E reporter
A new fleet of U.S. nuclear reactors cannot be built quickly enough to help avoid the most catastrophic impacts of global warming and would tie up billions of dollars needed for other energy needs, an environmental group said in a report today.
Building 100 new nuclear reactors in 20 years would only cut 12 percent of total U.S. greenhouse gas emissions, according to the Environment America **report**. That reduction is not enough to keep global temperatures from rising to dangerous levels, the report says, citing the work of the Intergovernmental Panel on Climate Change.
"When it comes to global warming, time and money are of the essence and nuclear power will fail America on both accounts," Anna Aurilio, director of Environment America's Washington office, said in a statement. "With government dollars more precious than ever, nuclear power is a foolish investment that will set us back in the race against global warming."
Building 100 nuclear power plants would cost $600 billion at current mid-range prices for new reactor construction, $6,500 per kilowatt-hour, the group said.
But investing $600 billion in energy efficiency and renewable energy could reduce 24 percent of total U.S. greenhouse gas emissions, produce as much energy as 170

reactors and yield a net savings in electricity costs by 2030, the report says. Investing $590 billion in just energy efficiency could reduce electricity consumption by 25 percent below consumptions under a "business as usual" scenario, it says.
The report also disputes the need for nuclear power because it is the only current emissions-free "base load" power source. Energy efficiency, combined heat and power, biomass, geothermal and solar thermal power with heat storage could also be available at all times, the report notes. The loss of nuclear power also causes enormous strain on the system that smaller, more locally distributed sources would not, according to the report.
"Because nuclear reactors provide power in massive, inflexible, all-or-nothing blocks, they often produce large amounts of power at times when few people need it," the report says. "Moreover, when a reactor fails, it can have dramatic and widespread consequences for the availability of electricity."
There has been a recent surge of interest in nuclear power on Capitol Hill. Sens. Jim Webb (D-Va.) and Lamar Alexander (R-Tenn.) introduced a bill yesterday that aims to double nuclear production in 20 years and provide $2.5 billion over 10 years to support license reviews of "Generation IV" and small modular reactor designs, nuclear work force education, and research into current reactor lifetime extensions and efficiency.
A spokesman for the Nuclear Energy Institute said "a host of recent analyses" including U.S. EPA and the National Academies of Science have concluded more nuclear energy is needed to meet rising electricity needs while meeting emission reduction targets, and the Energy Information Administration's cost estimates conclude that nuclear is competitive with other technologies.
Plus a "myriad of independent analyses make it clear that you won't have sufficient renewable on the grid in 'the critical next decade,'" NEI's John Keeley said.
Click here to view the report.

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NUCLEAR POWER: As reactor fleet ages, engineers ask, 'Is 80 the new 40?' (11/20/2009)

Paul Voosen, E&E reporter
Could nuclear power plants last as long as the Hoover Dam?
Increasingly dependable and emitting few greenhouse gases, the U.S. fleet of nuclear power plants will likely run for another 50 or even 70 years before it is retired -- long past the 40-year life span planned decades ago -- according to industry executives, regulators and scientists.
With nuclear providing always-on electricity that will become more cost-effective if a price is placed on heat-trapping carbon dioxide emissions, utilities have found it is now viable to replace turbines or lids that have been worn down by radiation exposure or wear. Many engineers are convinced that nearly any plant parts, most of which were not designed to be replaced, can be swapped out.
"We think we can replace almost every component in a nuclear power plant," said Jan van der Lee, director of the Materials Ageing Institute (MAI), a nuclear research facility inaugurated this week in France and run by the state-owned nuclear giant EDF.

"We don't want to wait until something breaks," he said. By identifying components that are wearing down and replacing them, he said, suddenly nuclear plants will find that "technically, there is no age limit."

Indeed, as U.S. regulators begin considering the extended operations of nuclear plants -- the Nuclear Regulatory Commission (NRC) expects the first application for an 80-year license could come within five years or less -- perhaps the largest lingering question is one of basic science: How do heavy doses of radiation, over generations, fundamentally alter materials like steel and concrete?

"It's taken many years for us to understand the problem," said Gary Was, the director of the University of Michigan's Phoenix Energy Institute and an expert in aging materials. "Thirty years ago, we didn't have techniques to see these changes."

Until recently, such research has not been a priority. But within the past few years, the Department of Energy began a program looking at "long-term operations," as it is known in the industry. And provisions in the Senate's climate bill call for DOE to increase these investigations in the hope of extending plant lives "substantially beyond the first license extension period."

DOE collaborates in this research with France's MAI and the U.S.-based Electric Power Research Institute (EPRI), a nonprofit funded by many nuclear utilities. U.S. leadership in the field is natural, given the sheer age of America's reactors, many of which are already coming close to exceeding their intended operating lives.

The oldest commercial plants in the United States reached their 40th anniversary this year, and the average plant has operated for 30 years. Already, more than half of the nation's more than 100 reactors have seen their initial licenses extended for an additional two decades. Nearly all the country's plants are expected to eventually win such extensions.

As companies have encountered few hurdles toward ensuring 60 years of operation, according to one 2007 survey, a majority of executives say that it is very likely their plants will operate for 80 years or longer. It is a fairly natural progression, according to Was.

"If they last till 60, maybe they can last to 80," Was said. "Heck, maybe 100?"

Many believe that these extended life spans -- longer than almost any coal-fired plant and rivaling hydroelectric projects like the Hoover Dam -- are a necessity at a time when the vast majority of the United States' energy is generated from carbon-intensive fossil fuels. Nuclear power supplies some 20 percent of the nation's electricity.

Without the recent extensions, the electricity market would have faced a severe shortage of supply that would have been "nothing short of catastrophic" and resulted in more coal- or gas-fired power plants being built and increased greenhouse gas emissions, Was said.

"Without relicensing, we go off a cliff five years from now," Was said.

While much debate in Washington focuses on the construction of new nuclear power plants, these plants will only replace the electricity produced by existing facilities unless further extensions are sought, according to Ronald Szilard, the technical director of DOE's Light-Water Reactor Sustainability Program at Idaho National Laboratory.

"The focus right now is very intense on building new nuclear power plants, because we have come to realization that [reducing] greenhouse gas emissions in the future cannot be achieved without pushing nuclear further," he said. "Both existing and new plants will

have to contribute."
The original 40-year licensing period for power plants in the United States was never a question of the technical life of the plant, added John Gaertner, the lead technical manager on EPRI's long-term operations project.
"The engineers didn't throw up their hands and say, 'That's the lifetime I can get out of these things,'" he said. "It wasn't a technical reason."
Engineers have learned much about how to operate plants, reducing the time reactors remain offline during routine operations. And, while it varies on a case-by-case basis, the "assumption is generally correct that it is getting more cost-effective" to replace plant parts, said Scott Brooks, a spokesman for the Tennessee Valley Authority, which operates several nuclear sites.
"With 30 years of operating experience, we feel we can reassess a lot of the original assumptions" involved in running plants, Gaertner said.

Cracks kill

It has been nearly 70 years since the world's first artificial fission reaction, created by Enrico Fermi and collaborators beneath abandoned athletic-field stands at the University of Chicago. In that time, scientists have come to understand much about how neutrons -- the uncharged particles that provide ballast to the atom's nucleus -- alter the composition of materials.
Neutrons are effectively the trigger for nuclear power. Each time uranium splits in a nuclear reactor, neutrons are shot out at high energies. These neutrons in turn cause more uranium splits, resulting in a self-sustaining reaction. But while causing these divides, the neutrons also relentlessly pummel the steel and other metals that enfold the nuclear reactor, known as the pressure vessel.
"From a physicist's standpoint, [neutrons] are like bowling balls," Gaertner said.
"There are millions of millions of millions of impacts per year. At some point, it begins to impact the reactor vessel," he added.
After some time, decades or more, the radiation causes changes to the microstructure of metals, Was said. The relentless bombardment creates minute flaws, such as dislocation loops or precipitates, that "tend to harden the material," Was said. "When it gets hard, the trade-off is ductability -- the ability to transform."
As metals lose this plasticity, they lose the ability to give way, turning brittle and becoming a breeding ground for cracks and fissures. And when it comes to nuclear power plants, cracks kill.
"Cracking, the failure of the pressure vessel, has always been one of the major issues that can limit the life of the plant," Was said. "If you can't demonstrate its integrity, you're dead in the water in terms of life extensions."
In ways not yet understood, the corrosion that eventually accompanies the pristine water used in nuclear reactors interacts with and exacerbates incipient breaks in metal alloys. Such cracks are among the primary concerns of NRC when considering the future of U.S. reactors, according to Scott Burnell, an agency spokesman.
This cracking, which can affect core components down to baffle bolts, has been studied for 30 years and has still defied explanation, scientists say. In the meantime, it has cost the U.S. nuclear industry some $10 billion due to forced outages, increased inspection requirements, component replacements and increased regulatory scrutiny, according to EPRI.

Getting a handle on age-induced cracking will be one of the principal missions of nuclear scientists and engineers over the next decade, as U.S. regulators are expected to become much more stringent for extensions to 80 years, requiring models that will predict when cracks will occur, Gaertner said.

Since it is hardly time-effective to reproduce 60 years of natural neutron exposure, scientists instead use test reactors to expose steel and other alloys -- up to 25 varieties of metals can be found in reactor systems -- to higher energy radiation that simulates the plant's conditions.

Once the simulations are complete, high-powered imaging is applied to the metals. For this reason, France's MAI has one of the world's most powerful electron microscopes. Such imaging and vast increases in computing power now allow scientists to reconstruct the millions of individual atoms boiled off the surface of a metal into something similar to a photograph. The resolutions achieved allow unprecedented insights into cracking metals, Was said.

"We have a better understanding of how they form and why they form," Was said. "Once we know that, we can use that knowledge to predict into future how hardening will occur and what potential risks are."

Unanswered questions

There are also risks that could be wholly unanticipated, or other materials to investigate, such as the long-term effect of radiation on concrete, which is poorly understood, DOE's Szilard said.

"We'll be looking for mechanisms that have perhaps not manifested itself up to now," he said.

The industry has become skilled at replacing even large, expensive components like reactor heads and steam turbines -- in overhauls that can cost several hundred million dollars. Once flaws are identified, nearly any structural problem can be solved.

"Today, virtually every component in a reactor plant has been replaced at one point," said Tiffany Edwards, a DOE spokeswoman. "The exceptions are the reactor pressure vessel and the concrete [containment] structures. However, even those could be considered."

The pressure vessel remains the largest challenge for scientists as they try to determine which types of vessel might not make it to 80 years. If underlying flaws are found, there is the possibility that a metallurgical technique called annealing, employed in the past on nuclear reactors in Russia but never in the United States, could be used.

Put simply, annealing requires heating the metal of the pressure vessel to remove the damage created by radiation, possibly restoring it close to its original condition. "It's a very big job and very challenging," Was said.

"There are questions of how quick the damage will come back," he said. "Not all of these questions have been answered, but there's encouragement that even the pressure vessel could be replaced."

The United States has been well served by the caution of engineers who built the country's first generations of nuclear power plants, as seen in the ability of its plants to seamlessly cross the 40-year mark, MAI's Lee said.

"We know that with the margins that have been taken into account, they were so much over-designed that it is no problem to go beyond 40 years," Lee said.

While ultimately the decision of when to extend the lives of nuclear power plants will

come down to utilities, Gaertner expects that those decisions will not be held back by structural problems.
"We feel pretty confident that there are technical solutions to all the issues," he said, "and that the cost will probably be worth it."

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NUCLEAR POWER: Regulators to examine recent Three Mile Island leak (11/23/2009)

During a maintenance operation at Three Mile Island, a leak on Saturday exposed 20 workers to increased levels of radiation.
"It happened when workers were cutting through pipes and also using a vacuum type device that may have blown radioactive particles up into the air," Exelon Energy spokesman Ralph DeSantis said.
The nuclear power plant was shut down and some 150 employees were sent home. Twenty of them have tested positive for exposure to radiation, with the worst exposure measured at the equivalent of about three X-rays. Officials said that employees could be back at work as early as today.
Members of the Nuclear Regulatory Commission will be investigating what caused the minor leak in the Unit 1 reactor on site today.
Thirty years ago, the Unit 2 reactor had a partial meltdown that was considered the worst accident in U.S. power plant history (Muir/Netter, ABC News, Nov. 23) **-- DFM**

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NUCLEAR WASTE: NEI seeks delay in Yucca licensing hearings (11/23/2009)

The lobbying arm of the nuclear power industry is seeking to suspend hearings on a license to bury high-level radioactive waste at Nevada's Yucca Mountain, saying that for now only technical studies should be completed for the site.
Lawyers from Nevada urged the Nuclear Regulatory Commission not to act on the request from the Nuclear Energy Institute, made earlier this month. Yucca opponents argue that suspending the hearings would deny them the opportunity to offer evidence that the repository site is fatally flawed.
The Nevada lawyers "missed the point" of NEI's letter, said Steven Kraft, the institute's senior director of used fuel management.
"We're saying, 'Why don't you hold up on the hearings for now?' ... There's absolutely no hint in our letter about denying anybody" due process, Kraft said. "We think there is value in completing the technical review."
Energy Secretary Steven Chu said earlier this year that Yucca is not an option for disposing nuclear waste. Chu is expected to launch a panel next year that will look at how to deal with the country's waste stockpile (Keith Rogers, *Las Vegas Review-Journal*, Nov. 23). **-- PV**

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NUCLEAR POWER: Three Mile Island operations resume (11/24/2009)

Following a weekend radiation leak at Three Mile Island nuclear power plant (*Greenwire*, Nov. 23), Pennsylvania Gov. Ed Rendell has criticized plant leaders for failing to involve emergency officials for five hours after knowing of the contamination. The plant resumed full operations yesterday. "Things are back to normal," said site vice president Bill Noll.

No contamination was identified outside the plant, where 20 workers tested positive for exposure to radiation, the worst of which was roughly equivalent to about two dental X-rays, say officials. The event did not pose a risk to the public, company and federal officials said yesterday.

The leak probably stemmed from ventilation fans that caused the release of a small amount of radiation inside one plant on Saturday, plant officials say. The problem has since been fixed. "This seems to be the most probable reason," said John White, the U.S. Nuclear Regulatory Commission's regional supervisor for radiation protection and inspection, though he says the agency will continue to investigate the incident.

Last month the NRC approved Exelon's request for a two decade extension of its license to operate the Three Mile Island plant. Just two days before the incident Exelon announced its intention to begin replacing all 96 emergency sirens within a 10-mile radius of the site, a $2.2 million project (Cattabiani/Avril, *Philadelphia Inquirer*, Nov. 24)

-- DFM

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General Information or Other	Event Number: 45477
Rep Org: FLOWSERVE Licensee: FLOWSERVE Region: 1 City: RALEIGH State: NC County: License #: Agreement: Y Docket: NRC Notified By: ROBERT BARRY HQ OPS Officer: ERIC SIMPSON	Notification Date: 11/06/2009 Notification Time: 11:34 [ET] Event Date: 11/06/2009 Event Time: [EST] Last Update Date: 11/06/2009
Emergency Class: NON EMERGENCY 10 CFR Section: 21.21 - UNSPECIFIED PARAGRAPH	Person (Organization): MICHAEL KUNOWSKI (R3DO) JOHN THORP (e-mail) () O.TABATABAI (e-mail) ()

Event Text

PART 21 REPORT - POTENTIAL FAILURE OF BONNET VALVE

The following is quoted selectively from the text of the original Part 21 notification received from Flowserve via fax:

"On September 8, 2009, Flowserve Corporation was notified by Exelon-LaSalle

Nuclear Power Station of a failure which occurred and was initially communicated via Flowserve Complaint Report #4914.

"The Referenced Complaint Report describes an anomaly with a Size 3/4 Figure 848Y bolted bonnet valve at the LaSalle Nuclear Power Station.

"The subject valve was in service at the time of disassembly. The disassembly revealed that the disk nut, which captures the valve stem in the valve main disk, had separated from the main disk.

"The valve in question is a manually operated, non-active valve. The safety function of this valve is to retain system pressure. This safety function was not affected by separation of the stem nut from the valve disk.

"However, other Figure 848 valves may have different safety related functions that could be affected by this type of failure.

"[Flowserve has determined that] the Nuclear Industry needs to be notified concerning the potential defect and encouraged to inspect the operation of their valves, especially if they have a safety-related function in the plant that may be adversely affected.

"The valves affected are Size 2 and smaller Edward Figure 848 valves manufactured by Rockwell International at the Sulphur Springs, Texas, and the Raleigh, North Carolina, manufacturing facilities prior to 1991. These valves may be tagged 'Rockwell', 'Rockwell Edward' or 'Edward'. The valves affected have the old design stem/disk assembly.

"Valves with Figure Number A848 incorporate the new design stem/disk connection and are not affected. The total number of valves affected and their installed locations are not known."

The original report contains more technical details and information.

* * * UPDATE FROM ROBERT BERRY TO PETE SNYDER AT 1454 ON 11/24/09 * *

"Upon further investigation, Flowserve has become aware that additional Figure Numbers, 849, 828, and 829 may also be affected by the deviation reported herein, as they share the OLD Stem/Disk Assembly Design."

Notified R1DO (Ferdas), R2DO (Sykes), R3DO (Peterson), and R4DO (O'Keefe).

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General Information or Other	Event Number: 45500

Rep Org: WARTSILA FRANCE S.A.S Licensee: WARTSILA FRANCE S.A.S Region: City: State: County: License #: Agreement: N Docket: NRC Notified By: DANIEL DIETRICH HQ OPS Officer: MARK ABRAMOVITZ	Notification Date: 11/16/2009 Notification Time: 14:27 [ET] Event Date: 11/16/2009 Event Time: [EST] Last Update Date: 11/16/2009
Emergency Class: NON EMERGENCY 10 CFR Section: 21.21 - UNSPECIFIED PARAGRAPH	Person (Organization): RAYMOND MCKINLEY (R1DO) ERIC DUNCAN (R3DO) PART 21 GROUP ()

Event Text

PART 21 NOTIFICATION - POTENTIAL FAILURE IN EMERGENCY DIESEL GENERATOR BEARINGS

The following report was received via facsimile:

"PART 21 involving Wartsila type SACM UD45 Emergency Diesel Generating [EDG] set big end bearings installed in the US nuclear power stations of Constellation Energy at Calvert Cliffs and Xcel Energy at Prairie Island.

"COMPONENT: Big end bearing DLT141885 all batches & DLT123351 batches A2, F2, J2 on Wartsila type SACM UD45 [EDG] sets.

"DISCUSSION: Three of four incidents which have been reported to Wartsila France are related to UD45 diesel engines operating at 1500 rpm in nuclear installations. Big end bearing damage can result in non-availability of the diesel engine. Wartsila France has been working on the root cause analysis after the first reported failure and has given an overall recommendation in October 2009 regarding the risks of using the above mentioned big end bearings on diesel engines running at 1500 rpm (50 Hz applications). An additional technical evaluation has been issued in November 2009 after testing a new big end bearing. The evaluation has determined that this is potentially a reportable defect as defined by 10CFR21.

"AFFECTED USERS: UD45 engines

"CORRECTIVE ACTION: Being unable to predict the occurrence of such a random event, Wartsila France has advised its customers to: identify the [EDG] sets equipped with big end bearings above referenced in COMPONENT, stop the utilization of big end bearings above referenced in COMPONENT, replace all above referenced in COMPONENT big end bearings by a new reference PAAG129161 which has been qualified after extensive running tests on a 1500 rpm engine. Wartsila has not

recorded such a situation on other UD45 diesel engines running at a lower speed of 1200 rpm (60 Hz applications) which are installed as Emergency Generating sets in nuclear power plants. Nevertheless Wartsila France recommendation if components have also been identified in 1200 rpm units installed in US nuclear power plants or if such components are held in stock, is to replace them with the new reference big end bearing PAAG129161."

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Power Reactor	Event Number: 45512
Facility: FERMI Region: 3 State: MI Unit: [2] [ ] [ ] RX Type: [2] GE-4 NRC Notified By: GREGG MILLER HQ OPS Officer: VINCE KLCO	Notification Date: 11/21/2009 Notification Time: 05:58 [ET] Event Date: 11/21/2009 Event Time: 05:00 [EST] Last Update Date: 11/22/2009
Emergency Class: NON EMERGENCY 10 CFR Section: 50.72(b)(3)(xiii) - LOSS COMM/ASMT/RESPONSE	Person (Organization): ERIC DUNCAN (R3DO)

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

Event Text

TECHNICAL SUPPORT CENTER OUT OF SERVICE DUE TO PLANNED ELECTRICAL MAINTENANCE

"On November 21, 2009, Fermi 2 [removed] the Technical Support Center (TSC) from operation to facilitate maintenance on the facilities' 480-volt AC power supply. This work affects TSC lighting, computers, and ventilation. During this work, which is expected to last over 8 hours, the TSC will be unavailable. In the event TSC activation is necessary, the Emergency Operations Facility (EOF) will be used for the TSC function. Activation and use of the EOF as a backup for the TSC is included in Fermi 2's Radiological Emergency Response Preparedness Plan. The Emergency Call Out System (ECOS) is designed to facilitate contacting TSC personnel to respond directly to the EOF in the event of an emergency. Fermi 2 is making this notification in accordance with 10 CFR 50.72(b)(3)(xiii). Fermi 2 will notify the NRC upon completion of this work. Fermi 2 will notify the NRC Resident Inspector."

* * * UPDATE FROM GREG MILLER TO VINCE KLCO ON 11/22/2009 AT 0036 EST * * *

The planned maintenance has been completed and the TSC has been restored as an Emergency Response Facility. The licensee will notify the NRC Resident Inspector.

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Power Reactor	Event Number: 45517
Facility: BEAVER VALLEY Region: 1 State: PA Unit: [ ] [2] [ ] RX Type: [1] W-3-LP,[2] W-3-LP NRC Notified By: DAN SCHWER HQ OPS Officer: VINCE KLCO	Notification Date: 11/24/2009 Notification Time: 03:40 [ET] Event Date: 11/24/2009 Event Time: 03:05 [EST] Last Update Date: 11/24/2009
Emergency Class: UNUSUAL EVENT 10 CFR Section: 50.72(a) (1) (i) - EMERGENCY DECLARED	Person (Organization): RAYMOND MCKINLEY (R1DO) SAM COLLINS (RA1) ERIC LEEDS (NRR) SAMSON LEE (NRR) BRIAN McDERMOTT (IRD) JOHN FROST (DHS) WILLIAM BORDAN (FEMA)

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

Event Text

UNUSUAL EVENT - REACTOR COOLANT SYSTEM LEAKAGE GREATER THAN 25 GPM

"Beaver Valley Unit 2 declared an unusual event due to reactor coolant system unidentified leakage greater than 25 GPM into the pressurizer relief tank. Leakage occurred during shutdown of the residual heat removal system Train-A. The Train-A suction relief valve lifted due to pressure from the in-service Train-B residual heat [removal] system. The leakage has been stopped by isolating Train-A RHR from Train-B RHR. The duration of relief valve lifting was about 9 minutes. The pressurizer relief tank remained intact. All other systems functioned as designed and the plant is stable. Containment was closed at time of the event. No radioactive release occurred."

The licensee terminated the unusual event at 0404 EST.

The licensee notified the NRC Resident Inspector.

* * * UPDATE BY DAVID HASER TO VINCE KLCO ON 11/24/2009 AT 0707* * *

Licensee clarified that the event was due to identified leakage not unidentified leakage as stated in the paragraph above.

Notified R1DO.

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