To: Jim Mehl, ERU Supervisor

From: Zack Clayton, Rad Coord

Subject: March Monthly Report

Date: April 6, 2010

Beans:

Training:	3
Drills	0
Meetings:	4
Technical Assistance:	3
Public Assistance:	12

Web Page Hits: There were 34 page views for March

Coming Attractions:

4/5	DB Dry Run
4/6	Working Group
4/11	URSB
4/18	CMMRS meeting
4/28	NEPAC
4/29	NAS-T Exercise Planning
5/4	Working Group
5/10	Davis-Besse Evaluated Exercise
5/16-19	Shaken Horizon Exercise

Facility Updates:

Davis Besse Nuclear Power Station

Davis Besse operated at full power in March.

While testing fire systems on March 3, 2011 at 1:53 PM a technician keyed his radio too close to a safety systems panel causing momentary false signals in all trains of the Emergency Feed water system. The signals caused a loss of emergency feedwater for about two minutes. Since the plant was in normal operation this had no immediate adverse affect on the plant. The fire system testing has been completed, and a sign has been placed reminding workers that no radio usage is permitted inside the room where these panels are located. See Event Number: 46653.

On Tuesday, March 29, Davis-Besse discovered a leak in a temporary line from the

condenser sump pump to the settling ponds. The leak was minor but chemistry samples did indicate water from the leak contained approximately 7,340 picocuries per liter of tritium. This is above the threshold to contact the state but below the 20,000 picocuries/liter that is the federal standard for drinking water. The pipe has been repaired and the leak stopped. The temporary line was in use during repair of the permanent underground pipe when the leak was discovered.

Perry Nuclear Power Plant

Perry entered March in coast down for its refueling outage and operated in that status for the month.

On Friday, March 25, trace amounts of Iodine 131 were discovered in an electrical manhole by plant chemistry. Iodine 131 was also discovered in standing water on-site. Research is currently being conducted to determine actual source of the Iodine 131. Other plants in the region have found this and USEPA monitoring stations have observed elevated levels of Iodine 131 in rain samples in Ohio and neighboring states.

Beaver Valley Power Station

On Sunday afternoon, March 20, an oil pipeline upstream of Shippingport, PA had a major break. The water intakes for the Beaver Valley Power Station were unaffected. The plant initiated a "watch" to ensure the intakes remained unaffected and no oil sheen on the river was observed near the plant.

Beaver Valley Unit I

Beaver Valley Unit I operated at full power for March.

Beaver Valley Unit II

Beaver Valley Unit II operated at full power until March 6 when it shut down for refueling at midnight.

On March 25, Train B emergency diesel generator (EDG) was inoperable and unavailable due to maintenance. At 2:00 p.m. train A EDG was declared inoperable but available due to uncertainty about the fuel injection line. This put the plant into a Technical Specification that halted the refueling outage. At about 1:00 a.m. on 3/27/2011 the A train EDG was declared operable. See NRC Event 46700.

Operable means the equipment is known to be available for reliable service. Available means the equipment does not meet certain specified requirements for operation but there is no indication that it is not functional and would work.

Fermi II

Fermi II operated at full power for the month of March.

Portsmouth Gaseous Diffusion Plant

There were no reports for Portsmouth in March.

Out of Ohio but generating public interest: Fukushima Daichi

From NRC Information Notice 2011-05

Units 1 through 3, which had been operating at the time of the earthquake, scrammed automatically, inserting their neutron absorbing control rods to ensure immediate shutdown of the fission process. Following the loss of electric power to normal and emergency core cooling systems and the subsequent failure of back-up decay heat removal systems, water injection into the cores of all three reactors was compromised, and reactor water levels could not be maintained. Tokyo Electric Power Company (TEPCO), the operator of the plant, resorted to injecting sea water and boric acid into the reactor vessels of these three units, in an effort to cool the fuel and ensure the reactors remained shutdown. However, the fuel in the reactor cores became partially uncovered. Hydrogen gas built up in Units 1 and 3 as a result of exposed, overheated fuel reacting with water. Following gas venting from the primary containment to relieve pressure, hydrogen explosions occurred in both units and damaged the secondary containments. It appears that primary containments for Units 1 and 3 remain functional, but the primary containment for Unit 2 may be damaged. TEPCO cut a hole in the side of the Unit 2 secondary containment to prevent hydrogen buildup following a sustained period when there was no water injection into the core.
In addition, Units 3 and 4 have low spent fuel pool (SFP) water levels. Efforts continue to supply seawater to the SFPs for Units 1 through 4 using various methods. At this time, the integrity of the SFPs for Units 3 and 4 is unknown.
Fukushima Daiichi Units 4 through 6 were shutdown for refueling outages at the time of the earthquake. The fuel assemblies for Unit 4 had been offloaded from the reactor core to the SFP. The SFPs for Units 5 and 6 appear to be intact, but the temperature of the pool water appears to be increasing. Emergency power is available to provide cooling water flow through the SFPs for Units 5 and 6.
The Japanese Government ordered an evacuation out to 20 km for the area surrounding Fukushima Daiichi. Residents out to 30 km were ordered to shelter in place.
The damage to Fukushima Daiichi nuclear power station appears to have been caused by initiating events outside of the design basis for the facilities.

In response to the accident, an industry group, the Nuclear Energy Institute, has tasked each operating plant to answer the following items within four weeks:

1. verification of the capability to mitigate conditions that result from severe adverse events, including the loss of significant operational and safety systems due to natural events, fires, aircraft impact and explosions
2. verification of the capability to mitigate a total loss of electric power to a nuclear power plant
3. verification of the capability to mitigate flooding and the impact of floods on systems inside and outside the plant
4. identification of the potential for loss of equipment functions during seismic events appropriate for the site and the development of mitigating strategies to address

potential vulnerabilities

Activity:

3/8 URSB Working Group

3/9-11 RAT Training DHS PER-240

3/15 DB EAL training for off site response agencies.

3/18 DB Assessment Tabletop a training exercise for dose assessment.

3/18 Final Emergency Phase SOP review. Ingestion Phase SOP review will be started after the May Davis-Besse exercise.

3/21 FENOC briefing on the Fukushima Daichi reactor situation.

3/23 NAS-T TTX Planning – a set up meeting for a Franklin Country radiological table top exercise later in the year.

Office Issues:

3/23 DERR Staff meeting

NRC Reports and Statistics:

operating power levels

Date	BV1	BV2	DB	Fermi2	Perry	
1	100	100	100	100	94	Perry in coastdown to refueling outage
7	100	0	100	100	93	BV2 in refueling outage 3/6
14	100	0	100	100	94	
21	100	0	100	100	93	
28	100	0	100	100	90	
31	100	0	100	100	89	

Information Notices

The 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/2010/.
To access these documents use the ADAMS Accession number listed with the title.

This is in the format of : ML #########
*****
Davis-Besse: Request for Additional Information for the Review of the Davis-Besse Nuclear Power Station – Section 2.4 (TAC No. ME4640)
ADAMS Accession No. ML110420597
*****
Davis-Besse: Environmental Site Audit Regarding Davis-Besse Nuclear Power Station, Unit 1, License Renewal Application
ADAMS Accession No. ML110190113
*****
Braidwood Station, Units 1 and 2 and Byron Station, Unit Nos. 1 and 2 - Relief Request from ASME Code Case N-729-1 requirements for examination of reactor vessel head penetration welds – ADAMS Accession no. ML110560694
*****
RIS 2011-03, Issuance of SFST-14, “Acceptance Review Process”, dated March 3, 2011
ADAMS Accession No. (ML103230018),
*****
Fermi 2 - Request for Additional Information - Cyber Security Plan
ADAMS Accession Number: ML110620081
*****
BEAVER VALLEY POWER STATION: NRC EMERGENCY PREPAREDNESS ANNUAL INSPECTION REPORT AND NRC SECURITY ANNUAL INSPECTION REPORT
ADAMS ACCESSION NO: ML110630230
*****
Davis-Besse Annual Assessment Letter Unit 1 (Report 05000346/2011001)
Adams number ML 110620142
*****
Annual Assessment Letter for Beaver Valley Units 1 and 2 (Report 05000334/2010001 and 05000412/2010001)
ADAMS Accession No. ML110620054
*****
Fermi Annual Assessment Letter Unit 2 (Report 05000341/2011001)
Adams number ML 110620306
*****
Perry Annual Assessment Letter Unit 1 (Report 05000440/2011001)
Adams number ML 110260306
*****
Summary of February 9, 2011, Meeting with the Nuclear Energy Institute and Licensees on Transitioning to National Fire Protection Association Standard 805
ADAMS Accession No.: ML110590918
*****
Beaver Valley Power Station, Unit Nos. 1 and 2 – Request for Additional Information Regarding the Request for Approval of the Cyber Security Plan License Amendment Request (TAC Nos. ME4383 and ME4384)

ADAMS Accession No.: ML110630455
*****
Perry Nuclear Power Plant, Unit No. 1 - Request for withholding information from public disclosure –
ADAMS Accession no. ML110550090
*****
Davis-Besse Inspection Report 2011403 - Cover Letter Only
ADAMS Accession No. ML110670346
*****
Perry Nuclear Power Plant, Unit No. 1 - Request for additional information related to the license amendment request for approval of the Perry Cyber Security Plan –
ADAMS Accession no. ML110670597
*****
Davis-Besse Nuclear Power Station, Unit No. 1 - Request for additional information related to the license amendment request for approval of Davis-Besse Cyber Security Plan –
ADAMS Accession no. ML110670546
*****
PERRY: NRC INSPECTION REPORT NUMBERS 072-00069/11-002(DNMS); 050-00440/11-010 - DRY FUEL STORAGE STACK-UP OPERATIONS AT THE PERRY NUCLEAR POWER PLANT
ADAMS Accession No. ML110700566
*****
FERMI: NRC INSPECTION REPORT NOS. 07200071/2009001(DNMS) AND 05000341/2009009(DNMS); FERMI POWER PLANT, UNIT 2 DRY FUEL STORAGE ACTIVITIES
ADAMS Accession No. ML110740802
*****
Davis-Besse Nuclear Power Station, Unit 1 - Correction letter for license amendment no. 282 regarding request to incorporate the use of alternative methodologies for the development of reactor pressure vessel pressure-temperature limit curves –
ADAMS Accession no. ML110460485
*****
Davis-Besse: Request for Additional Information on the Reactor Vessel Surveillance Aging Management Program and Time-Limited Aging Analysis for Neutron Embrittlement for the Review of the Davis-Besse Nuclear Power Station (TAC No. ME4640)
ADAMS Accession No. ML110680172
*****
Davis-Besse: Request for Additional Information for the Review of the Davis-Besse Nuclear Power Station- Section2.2 &2.3)Tac No. ME4640)
ADAMS Accession No. ML110700732
*****
Perry: NRC Security Baseline Inspection Report 2011403 - Cover Letter Only
ADAMS Accession No. ML110760484
*****

Davis-Besse: Request For Additional Information For The Review Of The Davis-Besse Nuclear Power Station – Section 4.7 (TAC Number ME4640)
ADAMS Accession Number: ML11068A000
*****
REVISED Information Notice 2011-05, Tohoku-Taiheiyou-Oki Earthquake Effects On Japanese Nuclear Power Plants, dated March 18, 2011,
ADAMS number (ML110760432),
*****
Beaver Valley Power Station, Unit Nos. 1 and 2 – Relief Request RI-ISI-1 and RI-ISI-2 Regarding the Fourth and Third Risk-Informed Inservice Inspection Intervals (TAC Nos. ME4104 and ME4105)
ADAMS Accession No.: ML110630403
*****
Davis-Besse: Environmental Site Audit Regarding Davis-Besse Nuclear Power Station, Unit Number 1, License Renewal Application
ADAMS Accession Number: ML110190113
*****
DAVIS-BESSE INSPECTION REQUEST FOR INFORMATION 03/24/2011 LETTER ADAMS ACCESSION# ML11083A080.
*****
Fermi: NRC Security Baseline Inspection Report 2011403 - Cover Letter Only
ADAMS Accession No. ML110880433
*****
Davis-Beese: Request for Additional Information for the Review of the Davis-Besse Nuclear Power Station-Section 2.1 (TAC No. ME4640)
ADAMS Accession No. ML110820624
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NATURAL GAS: Pa. finds no signs of radioactivity in rivers (03/07/2011)

Water samples taken downriver from Pennsylvania sewage treatment plants that handle wastewater from natural gas drilling showed no problems with radioactivity, the state Department of Environmental Protection said today.
All of the samples, which were taken in November and December, showed levels at or below the normal naturally occurring background levels of radioactivity, according to the agency. They also showed levels for radium-226 and -228 that were below the federal drinking water standard.
The DEP did not immediately release the actual results, nor did it say what the tests revealed about other gas-drilling related pollutants, if anything.
The department said the sampling stations were put in place last fall to monitor the impact of Marcellus Shale gas drilling on water quality.
High-volume hydraulic fracturing, or fracking, produces large amounts of chemically tainted and sometimes radioactive water. Some of that wastewater is sent to sewage treatment plants that are not equipped to remove all of the pollutants from the wastewater. Those plants then discharge into waterways that also supply drinking water.

Until new regulations were imposed in August, Pennsylvania had been the only state to allow most of this wastewater to be released into waterways after only partial treatment. Other states required most or all of the water to be injected deep underground (Marc Levy, AP/Yahoo News, March 7). **-- AS**
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NUCLEAR WASTE: Utility regulators sue DOE to halt Yucca fee collection (03/07/2011)

Hannah Northey, E&E reporter

State utility regulators sued the Department of Energy today in an effort to stop the collection of fees associated with the now-abandoned nuclear waste repository in Yucca Mountain, Nev.

The National Association of Regulatory Utility Commissioners (NARUC) filed a petition in the U.S. Circuit Court of Appeals for the District of Columbia, challenging DOE's collection of about $770 million a year for the Nuclear Waste Fund.

The fund was established under the 1982 Nuclear Waste Policy Act that authorizes DOE to charge nuclear power companies fees for the development of spent-fuel storage facilities, namely Yucca Mountain. Those costs are then passed on to electric customers, NARUC said.

But the Obama administration ended the Yucca Mountain program and DOE filed a motion with the Nuclear Regulatory Commission last year to withdraw the license application for the waste repository.

NARUC says DOE has failed to fulfill its legal duty to conduct an annual assessment to determine whether "excess or insufficient revenues" are being collected.

The department instead issued an eight-page "determination" last November that "shares little of the approach, intellectual rigor, content or empirical support that characterizes all previous fee assessments," NARUC said. That document, signed by Energy Secretary Steven Chu, found "no reasonable basis" to adjust the fee -- a tenth of a cent per kilowatt-hour -- and it would remain as is until the next annual review.

NARUC challenged the department's fee collection last year, but a federal appeals court dismissed the petition, stating DOE had acted in accordance with the Nuclear Waste Policy Act (*E&ENews PM*, Dec. 13, 2010).

But the court order left open the possibility that NARUC could challenge the government's most recently adopted fee assessment, advice the group followed up on today.

In a statement, NARUC President Tony Clark said it is past time for DOE to suspend its collection of fees for the fund, stating that "consumers for 30 years have faithfully contributed more than $31 billion to pay for a program that was supposed to be operational 13 years ago, and now may very well never be operational."

DOE should halt its collection program, Clark said, until a solution to the storage of spent nuclear fuel is found.

NARUC had also asked DOE to suspend the fee program in 2009 after the Obama administration and DOE cut all funding and support for the Yucca Mountain project, but the agency denied the group's request because it had not completed the mandatory assessment.

The group is asking the court to find that DOE's "determination" failed to meet the requisites of the law to order the agency to suspend its fee collection.
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Double attack on US nuclear waste fees
10 March 2011

American utilities and regulators have both filed lawsuits against the Department of Energy (DoE) for continuing to charge for the halted Yucca Mountain project.

Funding for Yucca Mountain has come from a levy of 0.1 cents per kWh of nuclear power, which currently adds up to about $770 million per year. Nuclear utilities - and therefore their customers - have now paid a total of over $31 billion into the Nuclear Waste Fund.

The government was supposed to use this money to create a permanent nuclear waste disposal site by 1998. Around $7 billion was spent and much progress made, but Yucca was cut off from funding in May 2009 by President Barack Obama and energy secretary Stephen Chu. Spending on Yucca is now set at the absolute minimum level, while the $24 billion balance of the fund remains with the US Treasury earning substantial compound interest of over $1 billion per year.

This week, the Nuclear Energy Institute (NEI) and the National Association of Regulatory Utility Commissioners (NARUC) acted on behalf of their respective members with a lawsuit each to end the collection of fees, at least until the DoE has an alternative plan. The NEI is the trade association for the nuclear power industry in America and joined in the lawsuit by 16 members companies, while NARUC represents the public service commission of every US state.

"It is past time for the DoE to suspend consumer payments in the Nuclear Waste Fund," said NARUC president Tony Clark. "We want to work with the DoE to find a solution to the nation's nuclear waste problem, but consumers should be given a break until such a solution is found."

An earlier lawsuit from NARUC was based on the DoE's failure to produce an annual assessment of the adequacy of waste fees for the needs of the program. This was rejected by the court after the DoE submitted a late justification for the continued collection of fees. NARUC is now challenging the veracity of that, as it was given the right to do by the court.

"The agency has supplied no proof in its adequacy assessment that charging the fee is necessary, given all the steps the government has taken to essentially cancel the Yucca Mountain project without coming up with an alternative," said NARUC.

Current, future policy unknown

Having submitted an 8600-page application to build Yucca Mountain under President George Bush and his energy secretary Sam Bodman, the DoE under direction from Chu

and Obama moved to withdraw it in May.

This, however, was rejected by the Nuclear Regulatory Commission's independent Atomic Safety and Licensing Board (ASLB). The DoE had no right to substitute its own ideas in place of those legislated by Congress, said the ASLB, and is bound by law to complete its work at Yucca Mountain unless Congress acts to supercede the previous legislation.

Nevertheless, the politically appointed NRC Commissioners that control the body have not reached a concensus on what to do. The options of turning attention back to the application or granting the withdrawal request both remain before them.

In the meantime, Obama has created a 'Blue Ribbon' commission on radioactive waste management. It is hearing evidence from a range of stakeholders on waste management methods including reprocessing, recycling and the use of burner reactors as well as the widely accepted geologic disposal method as proposed for Yucca Mountain.

Researched and written
by World Nuclear News
http://www.world-nuclear-news.org/WR_Double_attack_on_US_nuclear_waste_fees_1003111.html
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NUCLEAR CRISIS: Chu, industry oppose U.S. licensing halt; lawmakers launch reviews (03/15/2011)

Hannah Northey, E&E reporter
The United States should approve construction licenses for new nuclear reactors, even though looming revelations from Japan's crisis could shed light on those decisions, Energy Secretary Steven Chu said today.
Chu told reporters after a House Appropriations subcommittee hearing that he does not support halting regulatory approvals as the United States tries to learn from the crisis at the Fukushima Daiichi nuclear plant, where there have been multiple explosions and fires and radiation releases since a devastating earthquake and tsunami Friday.
The Nuclear Regulatory Commission's permitting reviews are thorough, multi-year processes, Chu said. The secretary said he has asked the agency to follow the events unfolding in Japan carefully and provide public reports to Congress on whether current standards for reactors are sufficient or should be altered.
"I think if you look at the process in which the NRC approves going forward with new construction projects and nuclear reactors, it's a thoughtful process," Chu said. "We will learn a lot in the coming weeks and months about what's going to happen, and having learned all those things, we will actually look to our own currently operating reactors and any we are wanting to build and see that if we were exposed as what happened."
NRC said it is reviewing 12 applications for 18 proposed nuclear reactors. The Nuclear Energy Institute (NEI) said NRC has already renewed 63 licenses for the country's nuclear fleet.
NEI Senior Vice President Anthony Pietrangelo said the status of the existing U.S. reactors has already been thoroughly studied. Concerns over those reactors are not

relevant to the Japan crisis, he said, although the industry will take "lessons learned" there and apply them.
But Senate Democrats are urging caution in regulatory reviews for new plants.
Senate Majority Leader Harry Reid (D-Nev.) said the United States has "a little timeout here" with the crisis in Japan still developing. He said he expects there will be hearings on what is happening in Japan and what regulators and lawmakers can learn.
"I don't think there should be a mad rush to say that nuclear power generation is bad," Reid said. "I think we need a timeout and take a look at it, and I'm sure we'll have the experts tell us some things that could have been done better."
Senate Environment and Public Works Chairwoman Barbara Boxer (D-Calif.) has scheduled a full committee hearing tomorrow to review the Japan crisis.
Although NRC says U.S. reactors are safe, Boxer said, she has concerns about the safety of nuclear plants in California and whether regulators thoroughly tested the structures' seismic endurance, even when new information came to light in reference to fault lines.
When asked about supporting a pause in approving new nuclear reactor licenses, Boxer said she is "working on what I think we ought to do now, and I want to base it on facts."
Sen. Mary Landrieu (D-La.) said that while nuclear must be a key part of the nation's energy portfolio, a review could ensure the country is prepared to prevent a crisis. "I hope this is slowing down and checking the safety," she said. "You know, tapping the brakes, not slamming on them."
While not in full support of a moratorium halting nuclear power prospects, House Minority Whip Steny Hoyer (D-Md.) said he is in support of safety and design reviews of existing facilities, namely of the status of safety of existing plants and the design of new plants.
"I've been and continue to be a proponent of nuclear power," Hoyer said. "If we're going to reach energy independence, it's absolutely essential."
Some Republicans, on the other hand, say the nuclear industry has already seen enough stagnation surrounding permitting of new plants and that no decision to halt such projects should be made mid-crisis.
"There's been a pause for 15 years now, and I think it's time to continue on," said Sen. James Inhofe (R-Okla.). "We are going to have to have nuclear power, nuclear energy development, and right now we have some applications going. ... I think we should continue with those."
Senate Minority Leader Mitch McConnell (R-Ky.) said Congress should not make U.S. energy policy in the wake of the catastrophe in Japan, noting that similar discussions on the appropriateness of drilling in the Gulf of Mexico surfaced last year during the BP PLC oil spill.
"I just don't think we ought to, in the wake of crisis, be making long-term decisions about" the country's energy policy, McConnell said.
Reporters Katie Howell, Sarah Abruzzese, Jeremy P. Jacobs and Emily Yehle contributed.
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NUCLEAR CRISIS: Earthquake risks must be reanalyzed for U.S. reactors (03/24/2011)

Hannah Northey and Anne C. Mulkern, E&E reporters

All of the nation's 104 nuclear reactors will need to undergo analysis using cutting-edge technology and the most recent data to assess how well they can withstand earthquakes, the Nuclear Regulatory Commission says.

Plant operators will be required to study the safety of their facilities using a new seismic risk model created by the NRC, Electric Power Research Institute (EPRI) and U.S. Geological Survey, which should be available later this year.

The modeling is expected to give clearer indications of the risks facing each of the plants, providing details on the ground shaking that plant operators can expect at any given site, NRC spokesman Scott Burnell said. Plant operators must then show the commission their facilities are equipped to handle the worst-case scenarios the model generates.

The NRC will likely start with 27 reactors in the eastern and central United States. Data in past USGS reports for those facilities have shown the "largest increase in seismic risk," Burnell said, while acknowledging the risk is slight and still covered by the plants' designs. Using the new model for those facilities is expected to show "areas where the plants can improve what is already an acceptable response to seismic events," he said.

"There's been some talk about these being the first 27," NRC spokeswoman Beth Hayden said. "But we may just look at all of them."

But even as it analyzes risks at nuclear plants, the NRC acknowledges it has challenges in identifying the risks that reactors face from seismic activity, which cannot always be pinpointed to a fault line or seismic region. It's particularly difficult in the eastern and central United States, the NRC and geologists say, because quakes are less frequent there than on the West Coast.

"One of the questions which has come up repeatedly is which of the plants are near faults or how many plants are in moderate or high seismicity regions," Annie Kammerer, senior seismologist and earthquake engineer in the NRC's Office of Nuclear Regulatory Research, told the commission at a meeting Monday.

"That's a very challenging question to answer because these seismic zones are not well-defined boundaries."

The review was proceeding before safety concerns were piqued in the wake of the March 11 earthquake and tsunami that crippled a nuclear plant in northeast Japan. Burnell said the review is "in no shape or form a response" to events in Japan.

27 reactors

The NRC will first review the following plants: Farley 1 and 2 in Alabama; Crystal River 3 and St. Lucie 1 and 2 in Florida; Dresden 2 and 3 in Illinois; Duane Arnold in Iowa; Wolf Creek in Kansas; River Bend in Louisiana; Seabrook in New Hampshire; Indian Point 2 and 3 in New York; **Perry 1 in Ohio**; Limerick 1 and 2 and Peach Bottom 2 and 3 in Pennsylvania; Oconee 1, 2 and 3 and Summer in South Carolina; Sequoyah 1 and 2 and Watts Bar 1 in Tennessee; and North Anna 1 and 2 in Virginia.

The NRC has been reviewing the strength of plants since 2005, and in 2008 the commission began applying new seismic information from EPRI into the design of new nuclear power plants, as well as USGS findings for existing eastern and central reactor sites. Western reactors, the NRC said in 2008, had already taken into account the greater seismic activity within that region.

The USGS in its 2008 report, which updated a 2002 report, presented updated

information on how ground shaking is likely to be as a result of earthquakes. Because temblors of different magnitudes generate different amounts of force, the USGS presents the potential movement as g force, or acceleration relative to free fall.
The USGS report estimates the likelihood that a particular amount of force will happen over a certain time period. In a region, for example, it might warn that there is a 10 percent chance of getting a force equal to 20 percent of g or larger over the next 50 years, said Arthur Frankel, a USGS research seismologist.
The 2008 report included new information on faults and earthquakes developed since the USGS's 2002 analysis. Because there are not many quakes in the eastern and central United States, USGS also used models, Frankel said. There were new models created between 2002 and 2008, he said.

Calculating risks

Ninety percent of all the earthquakes occur at the boundaries of the Earth's tectonic plates, said Christopher Scholtz, a professor of geophysics at Columbia University. One of the best-known of those areas is between the West Coast of the United States and the east coast of Asia.
"Most of the earthquakes occur in the places where we expect them to occur," which are the areas with active faults, said Larry Ruff, a professor in University of Michigan's geological sciences department.
But three major earthquakes in the range of magnitude 7 in the early 1800s struck near the town of New Madrid, Mo. The epicenter of that quake has never been located, the NRC said.
A fault line responsible for a magnitude 7.3 quake in Charleston, S.C., in 1886 also has never been located, several geology experts said.
There also is the risk posed by undiscovered faults in earthquake-prone areas. In California, the 1994 Northridge and 1987 Whittier Narrows quakes both happened on fault lines that were mostly undiscovered. They occurred on "blind thrust" faults, which are buried beneath the top layers of rock in the Earth's crust, so there is no evidence on the surface that they exist.
Because there are fewer quakes in the eastern and central United States than on the West Coast, there is less opportunity to gather information about faults, experts said. Quakes help scientists study the potential for new temblors.
"There's probably places where there's faults lurking ... where there are large faults we don't know about yet," said Frankel of USGS.
Experts disagreed about the chances for a major quake on an unknown fault in the country's central-eastern region.
A major quake would need to happen on a large fault line, and those would be visible, Ruff said.
The magnitude 9.5 earthquake in Chile in 1960 happened on a fault equal in size to the area of California, Ruff said.
"That's not something you hide in the San Fernando Valley," Riff said, referring to a region of Southern California known for earthquakes.
"It's easy to hide, and therefore have an unknown fault, something that's small," Ruff said. "It's hard to hide a fault that's as large as you need to have a magnitude 9."
Scholtz disagreed. The New Madrid quake of 1811, he said, happened on a fault line unknown at that time. And even though today's technology is far more advanced, "we

wouldn't have any special reason to make a study of them to know there was a fault there unless there was an earthquake," Scholtz said. "It's an unlikely place to look."
USGS in its seismic hazards report tries to account for the uncertainty posed by unknown faults, Frankel said. It also studies potential evidence of past earthquakes like sand deposits in the ground. Those indicate there were New Madrid quakes in A.D. 1450 and 900, he said.
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NUCLEAR CRISIS: U.S. plants face risk of core damage from extended blackouts (03/29/2011)

All of the 104 nuclear plants in the United States are at risk of leaking radioactive material from a sustained blackout, some more than others.
U.S. regulators have known for years that a days-long power failure at a plant can cause core damage and radioactive leaks, even before the events in Japan.
In 2009 for example, the U.S. Nuclear Regulatory Commission presented a simulation of a power failure at the Peach Bottom Atomic Power Station in Pennsylvania, a plant with the same type of reactors as Japan's Fukushima Daiichi plant. If power is knocked out by an earthquake, flood or fire, radiation would start leaking in less than a day after battery power runs out.
"We didn't address a tsunami and an earthquake, but clearly we have known for some time that one of the weak links that makes accidents a little more likely is losing power," said Alan Kolaczkowski, a retired nuclear engineer.
But risk analyses have shown such natural disasters to be uncommon, so the commission has required plans for dealing only with short power failures, assuming that power would be restored quickly in the event of a blackout. So far, a blackout has not harmed a nuclear power plant in the United States.
However, a 2003 NRC analysis showed that for 39 of the country's reactors, the risk of core damage following a blackout was greater than 1 in 100,000. The **Beaver Valley Power Station, Unit 1**, in Pennsylvania had the greatest risk.
It was a power failure in Japan that shut down Fukushima Daiichi's cooling systems, leading to the release of radioactive material into the environment. Backup battery power ran out quickly.
"Clearly the coping duration is an issue on the table now," said Biff Bradley, director of risk assessment for the Nuclear Energy Institute. "The industry and the Nuclear Regulatory Commission will have to go back in light of what we just observed and rethink station blackout duration" (Dina Cappiello, AP/Yahoo News, March 29). **-- AP**

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Power Reactor	Event Number: 46653
Facility: DAVIS BESSE Region: 3 State: OH Unit: [1] [ ] [ ] RX Type: [1] B&W-R-LP NRC Notified By: TOM COBBLEDICK HQ OPS Officer: JOHN KNOKE	Notification Date: 03/03/2011 Notification Time: 20:11 [ET] Event Date: 03/03/2011 Event Time: 13:53 [EST] Last Update Date: 03/03/2011

Emergency Class: NON EMERGENCY 10 CFR Section: 50.72(b)(3)(v)(A) - POT UNABLE TO SAFE SD 50.72(b)(3)(v)(B) - POT RHR INOP	Person (Organization): KENNETH RIEMER (R3DO)

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

Event Text

TEMPORARY LOSS OF EMERGENCY FEEDWATER TRAINS

"While testing fire detection systems, a radio was keyed in the vicinity of the Auxiliary Shutdown Panel. Control Room alarms that occurred at the same time led to a review of plant data. This review revealed two momentary events (approximately 8 and 19 seconds) over an approximate two minute period that caused momentary reductions in the control signals to the Auxiliary Feedwater Pump and Motor-Driven Feedwater Pump discharge control valves. These momentary signal reductions resulted in all trains of Emergency Feedwater being inoperable for approximately two minutes, pending further evaluation.

"With all trains of Emergency Feedwater inoperable, this event is being reported in accordance with 10 CFR 50.72(b)(3)(v) as a momentary loss of safety function for equipment needed to (A) shut down the reactor and maintain it in a safe shutdown condition and to (B) remove residual heat.

"Fire detection testing has been completed, and a sign placed on the Auxiliary Shutdown Panel Room door stating that no radio usage is permitted inside the room."

All trains of Emergency Feedwater are now operable.

The licensee has notified the NRC Resident Inspector.

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Power Reactor	Event Number: 46700
Facility: BEAVER VALLEY Region: 1 State: PA Unit: [ ] [2] [ ] RX Type: [1] W-3-LP,[2] W-3-LP NRC Notified By: DANIEL SCHWER HQ OPS Officer: BILL HUFFMAN	Notification Date: 03/25/2011 Notification Time: 21:35 [ET] Event Date: 03/25/2011 Event Time: 14:00 [EDT] Last Update Date: 03/27/2011
Emergency Class: NON EMERGENCY 10 CFR Section: 50.72(b)(3)(v)(D) - ACCIDENT MITIGATION	Person (Organization): JOHN ROGGE (R1DO)

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

Event Text

BOTH TRAINS OF EMERGENCY DIESEL GENERATORS ARE INOPERABLE

"On March 25, 2011, the Train B emergency diesel generator (2EGS-EG2-2) was inoperable and unavailable due to being out of service for scheduled maintenance. At 1400 hours, the Train A emergency diesel generator (2EGS-EG2-1) was declared inoperable, but available, after questions were raised about the adequacy of the assembly method for fuel injection line compression fittings by the manufacturer. Without assurance that the fittings meet full qualification requirements, the Train A emergency diesel generator was declared inoperable.

"The Unit is currently in Mode 6 with fuel loaded and the upper internals installed in the reactor vessel. The reactor vessel head is removed with 23 feet of water in the cavity, two Operable Residual Heat Removal trains one of which is in operation. With both emergency diesels inoperable, the safety functions needed for accident mitigation could be impaired in the event of a loss of off-site power. Actions are currently in progress to restore one emergency diesel generator to an Operable status.

"This event is reportable pursuant to 10 CFR 50.72(b)(3)(v)(D) due to both emergency diesel generators being inoperable. This event will be evaluated for 10 CFR Part 21 applicability."

The licensee is in Technical Specification 3.8.2. With both diesels declared inoperable, they have to suspend all core alterations and possible reactivity additions and return an EDG to service. The licensee plans to return the B train EDG an available status (but not Operable per Technical Specification) by tomorrow. The licensee will then replace the discrepant fuel injector line compression fittings on the A train and return it to Technical Specification Operable status.

The licensee has notified the NRC Resident Inspector.

* * * UPDATE AT 0226 ON 3/27/11 FROM DANIEL SCHWER TO MARK ABRAMOVITZ * * *

"Following replacement of the questionable fuel injection line compression fittings and successful surveillance and post maintenance testing, the Train A emergency Diesel Generator (2EGS-EG2-1) was declared OPERABLE at 0058 hours on 3/27/2011. One Diesel Generator was maintained available at all times while the issue was being addressed."

The licensee notified the NRC Resident Inspector.

Notified the R1DO (Rogge).

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