To: Jim Mehl, ERSIS Manager

From: Zack Clayton, Rad Coordinator

Subject: April Monthly Report

Date: May 3 , 2016

Beans

Training:	0
Drills:	0
Meetings:	4
Technical Assistance:	4
Public Assistance:	1

Web Page Views: There were 31 page views in April.

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

Coming Attractions

5/4	IREP Power Group
5/4	IREP Intermediate Phase Planning
5/5	IREP Technical Group
5/13	FMT Controller Training
5/17	Beaver Valley Full Scale Dry Run
6/14	Beaver Valley Full Scale Evaluated Exercise

Facility updates

Davis-Besse Nuclear Power Station

Davis-Besse started and ended April in its refueling outage, which began March 26.

On March 30, 2016, at 1715 EDT, with the Unit shutdown and in Mode 6 for refueling, evidence of leakage was identified on a 3/4-inch flexible braided piping connection on Reactor Coolant Pump (RCP) 1-1, and this issue was determined to be reactor coolant system pressure boundary leak. In Mode 6 the Technical Specification Limit for this issue does not apply. The cause and resolution of the leakage are under evaluation. See Event 51837.

Perry Nuclear Power Plant

Perry operated at full power for the month.

Between 2009-2010 Allen Bradley made a design change in a timing relay without changing the part number of the commercial relay or providing any documented evidence of a design change. The manufacturer specification data sheets maintain the classification that the relays are 'solid state', which would imply that there are no digital devices installed in the relay. However, after inspection of the internals of the timing relay (Figure 2), it has been identified that the unit does contain a CPLD which meets the definition of a digital device under the guidance of NEI 01-01. Perry has some of these relays. See Event 51030.

Beaver Valley Power Station

Beaver Valley Unit I

Unit I operated at full power for the month.

Beaver Valley Unit II

Unit II operated at full power for the month.

DTE

Fermi II

Fermi II operated at full power until the 18th when it down powered to 62% power for four days. It finished April at full power. No information is available on the down power.

Fermi III

Fermi III submitted information for the plant discharge permit. There was no other activity reported for Fermi III

Portsmouth Enrichment Plant

There was no activity reported for the Portsmouth site.

Activity

4/6	Power Plant Committee – The two plant exercises for this year were discussed.

4/11 URSB – The new Director's designee, Marcus Glasgow, Chief of the Division of Environmental Response Investigation and Enforcement, attended the meeting. Agencies provided updates on current activities and IREP nuclear power related initiatives. The NRC provided a report on plant regulatory status, and FENOC gave a detailed report on the individual power plants.

4/12-14 RAT Training At Lake County - RAT field training of PER-240, Responder Operations Course for Weapons of Mass Destruction. This is refresher training with current operations concepts from the course offered 5 years ago.

4/13 IREP -- The participating agencies provided status reports, The standing committees reported progess and provided Goals and objectives for 2016. The Group decided to move to a quarterly meeting schedule with committees continuing to meet monthly. The next IREP meeting is scheduled for June 8.

4/27 IREP Non-Power Group – Col Brickler from ONG attended and will be a group member ongoing. The main item of work was revision of the ESF-10 annex to the State Emergency Plan. There are several agencies that may be affected by these changes. The group decided to iron out the ODH and OEPA roles and then submit the document with those changes as a template for the other agencies to use as they see fit.

Office Issues

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

Statistics, NRC Reports, News, and ADAMS References

Operating Power Levels

April

Date	BV1	BV2	DB	Perry	Fermi2
1	100	100	0	100	100
4	100	100	0	100	100
11	100	100	0	100	100
18	100	100	0	100	62

22	100	100	0	100	93
25	100	100	0	100	100
30	100	100	0	100	100

Event Reports

Power Reactor	Event Number: 51837
Facility: DAVIS BESSE Region: 3 State: OH Unit: [1] [ ] [ ] RX Type: [1] B&W-R-LP NRC Notified By: BILL RAYBURN HQ OPS Officer: DONG HWA PARK	Notification Date: 03/31/2016 Notification Time: 00:14 [ET] Event Date: 03/30/2016 Event Time: 17:15 [EDT] Last Update Date: 03/31/2016
Emergency Class: NON EMERGENCY 10 CFR Section: 50.72(b)(3)(ii)(A) - DEGRADED CONDITION	Person (Organization): PATTY PELKE (R3DO)

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

Event Text

DEGRADED CONDITION DUE TO DISCOVERY OF PRESSURE BOUNDARY LEAKAGE

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

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

*****

!!!!! THIS EVENT HAS BEEN RETRACTED. THIS EVENT HAS BEEN RETRACTED !!!!!	
Power Reactor	Event Number: 51712
Facility: BEAVER VALLEY Region: 1 State: PA Unit: [1] [2] [ ]	Notification Date: 02/05/2016 Notification Time: 03:49 [ET] Event Date: 02/05/2016

RX Type: [1] W-3-LP,[2] W-3-LP NRC Notified By: JAMES SCHWER HQ OPS Officer: JOHN SHOEMAKER	Event Time: 01:09 [EST] Last Update Date: 04/04/2016
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
1	N	Y	100	Power Operation	100	Power Operation
2	N	N	0	Hot Standby	0	Hot Standby

Event Text

EXCESSIVE CONTROL ROOM IN-LEAKAGE IDENTIFIED

"On February 5, 2015 at 0109 EST, the Control Room Emergency Ventilation System (CREVS) was declared inoperable due to a higher than allowed identified in-leakage rate for the Control Room Envelope (CRE) when in the Normal Operating Mode. Unit 1 remains at 100 percent power and Unit 2 remains in Mode 3 for an unrelated planned maintenance outage. Unit 1 and Unit 2 share a common CRE.

"This in-leakage was detected during additional testing following the event documented in EN #51584.

"At the time of discovery, there is a reasonable expectation this condition could prevent the fulfillment of the safety function of a system that is required to mitigate the consequences of an accident, thus satisfying the reporting criteria for 10CFR50.72(b)(3)(v)(D).

"Actions to implement mitigating actions were immediately initiated in accordance with Technical Specification 3.7.10. CREVS has been placed in Recirculation Ventilation Mode, isolating the control room from outside air.

"The NRC Senior Resident Inspector has been notified of the condition."

* * * RETRACTION FROM DAVID HELD TO VINCENT KLCO AT 1411 EDT ON 4/4/16 * * *

"Following the 8-hour 10 CFR 50.72 notification made on 02/05/2016 (EN 51712) regarding the Control Room Emergency Ventilation System (CREVS) inoperability, further engineering evaluation has determined the identified in-leakage does not result in exceeding the design criteria for dose to the control room personnel. Therefore the degraded Control Room Emergency Ventilation System remained operable with the identified air in-leakage as determined by the Control Room Envelope Habitability Program. As such, the safety function was never lost and the event notification is being retracted as it is not reportable pursuant to 10 CFR 50.72(b)(3)(v)(D).

"The NRC Resident has been notified."

Notified the R1DO (Jackson).

*****

Agreement State	Event Number: 51839
Rep Org: OHIO BUREAU OF RADIATION PROTECTION Licensee: ACUREN INSPECTION, INC. Region: 3 City: DAYTON State: OH County: License #: 03320 99 0006 Agreement: Y Docket: NRC Notified By: STEPHEN JAMES HQ OPS Officer: VINCE KLCO	Notification Date: 03/31/2016 Notification Time: 14:07 [ET] Event Date: 03/30/2016 Event Time: [EDT] Last Update Date: 03/31/2016
Emergency Class: NON EMERGENCY 10 CFR Section: AGREEMENT STATE	Person (Organization): PATTY PELKE (R3DO) NMSS_EVENTS_NOTIFICA (EMAI)

Event Text

AGREEMENT STATE REPORT - RADIOGRAPHY CAMERA STUCK SOURCE

The following information was received from the State of Ohio by email:

"On March 30, 2016 at approximately [1250 EDT] the Bureau of Environmental Health and Radiation Protection (BEHRP) received a phone call from licensee's RSO that an industrial radiography crew working on a water tank construction job in Groveport, Ohio had a source stuck in the guide tube of a QSA Model 880D camera and were unable to retrieve the back into the camera. The source in use was 75 Curies of Iridium-192. The incident occurred at approximately [1225 EDT]. The stuck source was discovered after a shot time had ended and the radiography crew attempted to crank the source back in to the camera. The radiography crew conducted surveys of the area and moved boundaries out 2 mR/hr or less. The cause of the stuck source was due to a magnetic stand becoming dislodged during radiography operations, which fell onto the guide tube, crimping it, and preventing retraction of the source."

* * * UPDATE:FROM STEPHEN JAMES TO VINCE KLCO ON 3/31/2016 AT 1631 EDT VIA EMAIL * * *

"A BEHRP inspector was immediately dispatched to the job-site and arrived there at approximately [1320 EDT]. The inspector met with the licensee's customer and reviewed the actions taken by the radiography crew to establish new barriers and prevent access to the site. The licensee's trained retrieval personnel dispatched to the site arrived a short time later. After a thorough review of the incident and work area, the licensee's response team was able to retrieve the source, which was completed at approximately [1600 EDT] that afternoon. The maximum dose received by any individual involved in the recovery effort was 50 mR. The camera and guide tube will be returned to manufacturer for repair.

"QSA Global Camera,Serial Number-D8042; Source Serial Number-29222G.

"Ohio Event- OH160002"

Notified the R3DO (Pelke) and the NMSS Events Notification via email.

*****

Part 21	Event Number: 51030
Rep Org: AZZ/NLI NUCLEAR LOGISTICS, INC Licensee: ALLEN BRADLEY Region: 4 City: Fort Worth State: TX County: License #: Agreement: Y Docket: NRC Notified By: TRACY BOLT HQ OPS Officer: DANIEL MILLS	Notification Date: 05/01/2015 Notification Time: 13:32 [ET] Event Date: 04/30/2015 Event Time: [CDT] Last Update Date: 04/08/2016
Emergency Class: NON EMERGENCY 10 CFR Section: 21.21(d)(3)(i) - DEFECTS AND NONCOMPLIANCE	Person (Organization): MEL GRAY (R1DO) FRANK EHRHARDT (R2DO) ROBERT ORLIKOWSKI (R3DO) GEOFFREY MILLER (R4DO) PART 21/50.55 REACT (EMAI)

Event Text

POTENTIALLY UNQUALIFIED COMPONENT IN CERTAIN ALLEN BRADLEY TIMING RELAYS

The following is an excerpt from a document received from the licensee via email:

"Report of potential 10 CFR Part 21, Allen Bradley Timing Relay Model 700RTC

"Pursuant to 10 CFR 21.21(d)(3)(ii), AZZ/NLI is providing written notification of the identification of a potential failure to comply.

"On the basis of our evaluation, it is determined that AZZ/NLI does not have sufficient information to determine if the subject condition would, or has, created a Substantial Safety Hazard or would have created a Technical Specification Safety Limit violation as it relates to the subject plant applications.

"The specific part which fails to comply or contains a defect:

"As of 2009-2010, Allen Bradley relays base model 700RTC, contain an unevaluated CPLD (Complex Programmable Logic Device). This was an unpublished design change that was implemented to replace an obsolete integrated circuit chip. The undocumented design change did not result in a part number change from Allen-Bradley. There was no change to the appearance of the relay that would identify any design changes were made to the relay configuration. Therefore, NLI qualification/dedication of the relays after 2009 have not included additional testing for the new CPLD component.

"The timing relay model 700RTC has been dedicated/qualified for multiple applications for various plants.

"Between 2009-2010 Allen Bradley made a design change without changing the part number of the commercial relay or providing any documented evidence of a design change. The

manufacturer specification data sheets maintain the classification that the relays are 'solid state', which would imply that there are no digital devices installed in the relay. However, after inspection of the internals of the timing relay (Figure 2), it has been identified that the unit does contain a CPLD which meets the definition of a digital device under the guidance of NEI 01-01."

Potentially affected plants include Browns Ferry, Ginna, Millstone, Nine Mile Point, North Anna, Ft. Calhoun, **Perry**, River Bend, South Texas Project, and St. Lucie.

* * * UPDATE FROM TRACY BOLT TO JOHN SHOEMAKER AT 1744 EDT ON 4/8/16 * * *

AZZ/NLI Nuclear Logistics provided additional information regarding Part 21 Report No: P21-04302015, Rev. 1.

Notified R1DO (Rogge), R2DO (Nease), R3DO(Skokowski), R4DO (Kellar), and PART 21/50.55 REACTORS via email.

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News

ToledoBlade.com
OHIO ENERGY MARKETS
PUCO backs utilities' rate lock-in plan
New costs for FirstEnergy, AEP customers uncertain
4/1/2016
BY JIM PROVANCE
BLADE COLUMBUS BUREAU CHIEF

COLUMBUS —State regulators on Thursday approved rate plans locking in markets for power generated by nuclear and coal-fired plants that have struggled to compete amid low natural gas prices.

In cases watched nationally, the Public Utilities Commission of Ohio unanimously adopted modified plans that guarantee profits for Akron-based FirstEnergy —the parent company of Toledo Edison —and Columbus-based American Electric Power.

It was unclear how changes made by the commission might affect what customers will pay. Court challenges are likely.

FirstEnergy had previously said its typical residential customer using 750 kilowatt hours a month would be expected to pay about $3.25 more a month for the first year beginning June 1.

"We expect to file new rates on May 2 after we complete a series of power auctions next month," FirstEnergy spokesman Doug Colafella said.

"Based on the low prices for electricity right now, we may see lower total bills, including with this new [power purchase agreement] provision" Mr. Colafella said.

The utilities had argued Ohio can't afford to let plants such as FirstEnergy's **Davis-Besse** nuclear power plant near Oak Harbor close if it wants to guarantee reliable and affordable power generation within its borders.

They've argued the plants will become more economically competitive as, among other things, the dust around new federal pollution standards settles and natural gas prices rise.

Critics, however, have called the two plansa combined $5.9 billion bailout for the utilities, forcing customers to pay more when they could purchase cheaper and cleaner sources through the multistate regional grid.
“I believe that the free open market competition is not compromised with this order ...,” Commissioner Lynn Slaby said.
“There are times when we at the Public Utilities Commission make difficult decisions to assure consumers have adequate, safe, and reliable utility services at a fair price. In order to accomplish this mission, we must also ensure financial integrity and service reliability in the Ohio utility industry,” he said.
The dispute pitted traditional utilities against competing electricity marketers. It created splits between major industrial users eager to lock down long-term reliable sources of power against other manufacturers who believe they can do better in a competitive market.
The deals divided environmentalists, as some were wooed by commitments to reduce carbon emissions and move toward cleaner energy.
Among other things, the commission added provisions requiring utilities to submit plans to modernize the aging electricity grid, invest in more renewable power, and provide greater assistance to low-income customers.
“We think the decision [Thursday] is saddling customers not only with high costs for the next eight years, but with old coal plants that should be on their way to retirement...,” said Trish Demeter of the Ohio Environmental Council.
“Let’s be clear. Day one, the utilities, both AEP and FirstEnergy, are getting everything they want, which is a profit guarantee and seven coal plants that will stay on-line for at least eight years,” she said.
The FirstEnergy deal faced more of a backlash than AEP’s smaller plan. The FirstEnergy deal locks in a market for Davis-Besse, the W.H. Sammis coal plant near Steubenville, Ohio, and the utility’s share of the Ohio Valley Electric Corp. units in Gallipolis, Ohio, and Madison, Ind.
The federal government recently extended the operating license for Davis-Besse through 2037.
“The [plan] will help ensure the continued operation of the Davis-esse nuclear power plant, which employs more than 700 people with an annual payroll of approximately $65 million,” the International Brotherhood of Electrical Workers said. “FirstEnergy is the largest taxpayer in Ottawa County and pays over $7 million in annual property taxes to local jurisdictions.”
Guy L. Parmigian, superintendent of the Benton-Carroll-Salem Local School District, pointed to the $22 million in local tax revenue Davis-Besse generates.
“In fact, the plant’s recent steam generator replacement and refueling project will more than double the plant’s economic impact this year compared to a typical year,” he said. “Last but not least, the plant provides a carbon-free, long-term source of power for our region and our state.”
The utility conceded this year that customers would pay more during the first four years, but would save $560 million over the course of the full eight years. The PUCO’s final order predicts a net credit of $256 million for customers over that period.
Part of the promised savings for customers would be up to $100 million in credits during the second half of the plan in case the utility’s projections that the new plants would become more economically competitive don’t pan out.
“This is just another corrupt scheme for big energy to raid consumer pockets for their own benefit,” state Rep. Teresa Fedor (D., Toledo) said. “It is time for utilities to start living in the 21st Century and making real investments in advanced energy sources that will save consumers money and power our future.”
The Oregon Clean Energy Center is building a new cycle gas turbine energy plant in the Toledo suburb, which is expected to feed 860 megawatts of power into the grid.
“This bailout for aging and inefficient power plants sends the wrong message to investors and companies looking at Ohio,” said Peter Rigney, director for the $800 million-plus project. “These

bad agreements take us two steps backward and jeopardize the gains made in securing Ohio's energy future."
The Ohio Consumers' Counsel, the state's watchdog for residential consumers, has argued that FirstEnergy's pricing estimates were based on outdated data. It contends FirstEnergy's plan would cost customers an extra $3.9 billion and AEP's plan $2 billion over eight years.
The PUCO estimates AEP customers will see a net credit of $214 million. The order limits increases in customers' bills during the first two years to no more than 5 percent annually. Customers would pay the extra costs on the distribution side of their monthly bills, regardless of whether they shop around to buy their electricity from other marketers.
Contact Jim Provance at: jprovance@theblade.com or 614-221-0496.
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Japan prepares for release of tritium from Fukushima plant

AP
YURI KAGEYAMA
April 12, 2016

TOKYO (AP) — To dump or not to dump a little-discussed substance is the question brewing in Japan as it grapples with the aftermath of the nuclear catastrophe in Fukushima five years ago. The substance is tritium.
The radioactive material is nearly impossible to remove from the huge quantities of water used to cool melted-down reactors at the Fukushima Dai-ichi plant, which was wrecked by the massive tsunami in northeastern Japan in March 2011.
The water is still accumulating since 300 tons are needed every day to keep the reactors chilled. Some is leaking into the ocean.
Huge tanks lined up around the plant, at last count 1,000 of them, each hold hundreds of tons of water that have been cleansed of radioactive cesium and strontium but not of tritium.
Ridding water of tritium has been carried out in laboratories. But it's an effort that would be extremely costly at the scale required for the Fukushima plant, which sits on the Pacific coast. Many scientists argue it isn't worth it and say the risks of dumping the tritium-laced water into the sea are minimal.
Their calls to simply release the water into the Pacific Ocean are alarming many in Japan and elsewhere.
Rosa Yang, a nuclear expert at the Electric Power Research Institute, based in Palo Alto, California, who advises Japan on decommissioning reactors, believes the public angst is uncalled for. She says a Japanese government official should simply get up in public and drink water from one of the tanks to convince people it's safe.
But the line between safe and unsafe radiation is murky, and children are more susceptible to radiation-linked illness. Tritium goes directly into soft tissues and organs of the human body, potentially increasing the risks of cancer and other sicknesses.
"Any exposure to tritium radiation could pose some health risk. This risk increases with prolonged exposure, and health risks include increased occurrence of cancer," said Robert Daguillard, a spokesman for the U.S. Environmental Protection Agency.
The agency is trying to minimize the tritium from U.S. nuclear facilities that escapes into drinking water.
Right after the March 2011 disaster, many in Japan panicked, some even moving overseas although they lived hundreds of miles (kilometers) away from the Fukushima no-go zone. By

now, concern has settled to the extent that some worry the lessons from the disaster are being forgotten.
Tritium may be the least of Japan's worries. Much hazardous work remains to keep the plant stabilized, and new technology is needed for decommissioning the plant's reactors and containing massive radioactive contamination.
The ranks of Japan's anti-nuclear activists have been growing since the March 2011 accident, and many oppose releasing water with tritium into the sea. They argue that even if tritium's radiation is weaker than strontium or cesium, it should be removed, and that good methods should be devised to do that.
Japan's fisheries organization has repeatedly expressed concerns over the issue. News of a release of the water could devastate local fisheries just as communities in northeastern Japan struggle to recover from the 2011 disasters.
An isotope of hydrogen, or radioactive hydrogen, tritium exists in water form, and so like water can evaporate, although it is not known how much tritium escaped into the atmosphere from Fukushima as gas from explosions.
The amount of tritium in the contaminated water stored at Fukushima Dai-ichi is estimated at 3.4 peta becquerels, or 34 with a mind-boggling 14 zeros after it.
But theoretically collected in one place, it would amount to just 57 milliliters, or about the amount of liquid in a couple of espresso cups — a minuscule quantity in the overall masses of water.
To illustrate that point, Shunichi Tanaka, chairman of the Nuclear Regulation Authority, showed reporters a small bottle half-filled with blue water that was the equivalent of 57 milliliters.
Public distrust is running so high after the Fukushima accident that Tokyo Electric Power Co., or TEPCO, the utility that operates the Fukushima plant and oversees its decommissioning, has mostly kept quiet about the tritium, pending a political decision on releasing the water.
Privately, they say it will have to be released, but they can't say that outright.
What will be released from Fukushima will be well below the global standard allowed for tritium in the water, say Tanaka and others favoring its release, which is likely to come gradually later this year, not all at once.
Proponents of releasing the tritium water argue that tritium already is in the natural environment, coming from the sun and from water containing tritium that is routinely released at nuclear plants around the world.
"Tritium is so weak in its radioactivity it won't penetrate plastic wrapping," said Tanaka.
Follow Yuri Kageyama on Twitter at: https://twitter.com/yurikageyama
Her work can be found at http://bigstory.ap.org/content/yuri-kageyama
Source: https://www.yahoo.com/news/japan-prepares-release-tritium-fukushima-plant-050935788.html?nhp=1
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The Blade

‘BIGGEST IMPROVEMENT’ SINCE IT WAS BUILT

Upgrade in progress at Davis-Besse plant

4/19/2016
BY TOM HENRY
BLADE STAFF WRITER

OAK HARBOR, Ohio —Even with Davis-Besse’s fate in limbo less than three weeks ago, FirstEnergy Corp. was moving forward with a multimillion-dollar project that signals the utility’s faith in getting more years of service from its 39-year-old nuclear plant.
Crews began pouring tons of concrete and building a new structure called an emergency feedwater facility about the same time the Public Utilities Commission of Ohio was poring over

final details of a controversial rate plan to guarantee at least eight more years of steady cash flow for Davis-Besse in Ottawa County and FirstEnergy's coal-fired Sammis plant in southeast Ohio.

The rate plan, scorned by critics as a bailout, was approved March 31 by the utilities commission.

That action followed the U.S.Nuclear Regulatory Commission's Dec. 8 approval of a 20-year extension of Davis-Besse's operating license, ending more than five years of debate. Originally set to expire April 22, 2017, the extension allows Davis-Besse to operate through April 22, 2037.

The new construction at Davis-Besse is in response to lessons learned from Japan's Fukushima Daiichi disaster on March 11, 2011, when an earthquake triggered a 45-foot tsunami and led to an unusual one-two punch that knocked out power to four of the site's six reactors. At least three overheated and melted.

The tsunamis in Japan prompted the nuclear industry to think more creatively about how safety margins can be expanded, a lesson reinforced by recent earthquakes in southern Japan.

A year after the Fukushima Daiichi disaster, in March, 2012, the NRC ordered all U.S. nuclear plants to install site-specific improvements by the end of 2016 that would go beyond their original design.

Because each plant is designed somewhat differently, those engineering needs vary.

"This is the biggest improvement we've made since the original construction," Jon Hook, FirstEnergy design engineering manager, told The Blade on Monday.

A FirstEnergy employee walks by the new emergency feedwater facility, left, being built at the Davis-Besse nuclear power plant. The new feedwater facility will provide water to cool the reactor and two steam generators if the site ever loses off-site power.

Travis Olson, Project Manager at FirstEnergy, stands on the ground floor inside the Emergency Feedwater Facility at the Davis-Besse Nuclear Power Station.

Davis-Besse's new emergency feedwater facility will provide 290,000 gallons of water to cool the plant's reactor and two steam generators if the site ever loses off-site power. It was built to be independent from Lake Erie and the regional electric grid, Mr. Hook said. It would provide about 24 hours of protection with huge diesel-powered generators and pumps.

No exact dollar amount for the project was given.

Doug Saltz, Davis-Besse plant manager, said the new facility will make it possible to draw water from area streams and ponds with portable generators and pumps.

"We will be able to draw water from anywhere," Mr. Hook said.

Larry Rushing, FirstEnergy special projects director, said the goal is to create more flexibility in backup safety systems.

The structure has walls four-feet wide, and it is built to withstand an earthquake. Its steel door is einforced with so much Kevlar that engineers claim it can withstand a car, utility pole, or otherlarge airborne projectile striking it at speeds as fast as 300 mph if a tornado or hurricane rips across the site, Mr. Hook said.

In addition to addressing scenarios beyond the plant's original design, the improvements will bring Davis-Besse into compliance with industry fire codes, officials said.

The emergency feedwater facility is the biggest project of Davis-Besse's current refueling-and-maintenance outage, which began in late March.

Fuel is expected to be loaded into the reactor this weekend, Mr. Saltz said.

The restart date is not announced in advance, but Mr. Saltz acknowledged that fuel loading is one of the final tasks.

Nuclear plants are refueled every 18 to 24 months, depending on the concentration of uranium in their fuel mix.

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

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Chernobyl

The Columbus Dispatch

Environment

Testing finds high levels of Chernobyl residue in Belarus milk

By YURAS KARMANAU

Associated Press

Monday April 25, 2016 8:21 PM

GUBAREVICHI, Belarus —On the edge of Belarus' Chernobyl exclusion zone, down the road from the signs warning "Stop! Radiation," a dairy farmer offers his visitors a glass of freshly drawn milk.

Associated Press reporters politely decline the drink but pass on a bottled sample to a laboratory, which confirms it contains levels of a radioactive isotope at levels 10 times higher than the nation's food safety limits.

That finding on the eve of the 30th anniversary of the world's worst nuclear accident indicates how fallout from the April 26, 1986, explosion at the plant in neighboring Ukraine continues to taint life in Belarus. The authoritarian government of this Agriculture-dependent nation appears determined to restore long-idle land to farm use —and in a country where dissent is quashed, any objection to the policy is thin.

The farmer, Nikolai Chubenok, proudly says his herd of 50 dairy cows produces up to two tons of milk a day for the local factory of Milkavita, whose brand of Parmesan cheese is sold chiefly in Russia.

Milkavita officials called the AP-commissioned lab finding "impossible," insisting their own tests show their milk supply contains traces of radioactive isotopes well below safety limits.

Yet a tour along the edge of the Polesie Radioecological Reserve, a 2,200 -square-kilometer (850-square-mile) ghost landscape of 470 evacuated villages and towns, reveals a nation showing little regard for the potentially cancer-causing isotopes still to be found in the soil. Farmers suggest the lack of mutations and other glaring health problems mean Chernobyl's troubles can be consigned to history.

"There is no danger. How can you be afraid of radiation?" said Chubenok, who since 2014 has produced milk from his farm just 45 kilometers (28 miles) north of the shuttered Chernobyl site, and two kilometers (a mile) from the boundary of a zone that remains officially off-limits to full-time human habitation.

Chubenok says he hopes to double his herd size and start producing farmhouse cheese on site.

His milk is part of the Milkavita supply chain for making Polesskiye brand cheese, about 90 percent of which is sold in Russia, the rest domestically. The World Bank identifies Russia as the major market for Belarusian food exports, which represent 15 percent of the country's export economy.

Since rising to power in 1994, President Alexander Lukashenko —the former director of a state-owned farm —has stopped resettlement programs for people living near the mandatory exclusion zone and developed a long-term plan to raze empty villages and reclaim the land for crops and livestock. The Chernobyl explosion meant 138,000 Belarusians closest to the plant had to be resettled, while 200,000 others living nearby

left voluntarily. Mikhail Kirpichenko is the director of an experimental farm in the village of Vorotets, about 25 miles north of the Chernobyl nuclear power plant in Ukraine.
One of the most prominent medical critics of the government's approach to safeguarding the public from Chernobyl fallout, Dr. Yuri Bandazhevsky, was removed as director of a Belarusian research institute and imprisoned in 2001 on corruption charges that international rights groups branded politically motivated. Since his 2005 parole he has resumed his research into Chernobyl-related cancers with European Union sponsorship.
Bandazhevsky, now based in Ukraine, says he has no doubt that Belarus is failing to protect citizens from carcinogens in the food supply.
"We have a disaster," he told the AP in the Ukraine capital, Kiev. "In Belarus, there is no protection of the population from radiation exposure. On the contrary, the government is trying to persuade people not to pay attention to radiation, and food is grown in contaminated areas and sent to all points in the country."
The milk sample subjected to an AP-commissioned analysis backs this picture.
The state-run Minsk Center of Hygiene and Epidemiology said it found strontium-90, a radioactive isotope linked to cancers and cardiovascular disease, in quantities 10 times higher than Belarusian food safety regulations allow. The test, like others in resource-strapped Belarus, was insufficiently sophisticated to test for heavier radioactive isotopes associated with nuclear fallout, including americium and variants of plutonium.
The Belarusian Agriculture Ministry says levels of strontium-90 should not exceed 3.7 becquerels per kilogram in food and drink. Becquerels are a globally recognized unit of measurement for radioactivity.
The Minsk lab informed the AP that the milk sample contained 37.5 becquerels. That radioactive isotope is, along with cesium-137, commonly produced during nuclear fission and generates most of the heat and penetrating radiation from nuclear waste. When consumed, scientists say strontium-90 mimics the behavior of calcium in the human body, settling in bones.
Milkavita chief engineer Maia Fedonchuk rejected the findings.
"It's impossible. We do our own testing. There must have been a mix-up," she said, adding they test samples from every batch of milk they receive from Chubenok and do an "in-depth" analysis every six months. She said the plant's own lab analysis indicates its overall milk supply contains an average of 2.85 becquerels per kilogram.
A person who answered the telephone at the press office of the Belarusian Emergency Situations Ministry, which is tasked with dealing with the fallout of the nuclear disaster, said they would not comment on the AP's findings.
Health officials say the danger level posed by low levels of radioactive isotopes depends greatly on length of exposure and individual physiology. Notably, the regional free-trade bloc that includes Belarus and Russia permits higher levels of strontium-90 in goods of up to 25 becquerels per kilogram, still lower than that detected in the AP-commissioned test.
The question is whether anyone in authority is positioned to identify the true level of risks in produce from farms on the frontier of Belarus' prohibited zone.
The deputy director of Belarus' Institute of Radiobiology, Natalya Timokhina, said Belarus permits food producers to conduct their own food safety monitoring and lacks the lab equipment necessary to identify the presence of americium, which is estimated

to be present in about 2 percent of Belarus' top soil and is expected to remain a health risk for another 270 years.
"One-time ingestion of contaminated food is not very dangerous," Timokhina said. "What's dangerous is the accumulation of radionuclides in the body."
Ausrele Kesminiene, a doctor in the cancer research unit of the World Health Organization, said the consumption of radioactive food is linked chiefly to the development of cancer in the thyroid, a gland in the neck that produces body-regulating hormones. Thyroid cancer is typically not fatal if diagnosed early.
WHO officials say they are dependent on reports from sister agencies in Belarus to alert them to cancer clusters or other signs of unresolved Chernobyl-related dangers. Greg ory Hartl, a WHO spokesman in Geneva, said the agency had no authority to regulate or oversee food safety —even products exported to other countries —because that is a domestic responsibility.
"Radiation effects and the development of cancers and the effects on the region are something which go on over a long, long period. So we haven't seen the end of it," Hartl said. "Undoubtedly there is going to be some increase in cancers."
Hartl said WHO officials have not received "any red flags" from Belarus.
Environmentalists critical of Belarus' Chernobyl cleanup record says that's hardly surprising, since the government has funded no machinery to scrutinize corrupt practices in the food industry. As a result, they say, no Belarusian food maker has ever been prosecuted for using ingredients or producing goods containing excessive levels of radioactive materials.
Irina Sukhiy, founder of the Belarus ecological group Green Network, said workers in food-industry factories have confidentially told her that ingredients and products are blended to dilute the impact of potentially radioactive ingredients from Belarusian suppliers bordering Ukraine. Such alleged mixing, she said, reduces the level of potentially carcinogenic isotopes in dairy products and processed meat below "the allowable dose, but it is still hazardous to health."
The division of the Belarusian Emergencies Ministry responsible for cleaning up the consequences of Chernobyl says that the rate of thyroid cancer in children runs 33 times higher than befo
re the nuclear blast. It says thyroid cancer rates run several times higher in adults.
Farmers working both on the edge of, and inside, the prohibited zone say they see no obvious signs of nuclear dangers, have been given no guidelines on reducing the risk of permitting radioactive isotopes into the food chain, and aren't worried about this.
Chubenok, the dairy farmer, said he had never heard of the sorbent substance Ferocin, known as Prussian Blue, which farmers in Ukraine feed their cattle to accelerate the removal of the cesium-137 isotope from their digestive tracts.
A tractor driver on one of his neighboring farms, where an abandoned village has been demolished to make way for fields of grain, says he's never seen an official testing for radiation levels in the soil. But Leonid Kravchenko said there was no reason for alarm. "Nobody's in danger," he said.
Driving toward Chernobyl and into the nearby Radioecological Reserve required AP journalists to negotiate painstaking government permission. Inside the zone, Belarus has authorized an experimental farm to operate for the past decade. Today it contains 265 horses, 56 cows and apiaries buzzing with honey bees.

The farm director, Mikhail Kirpichenko, said he's permitted to pursue commercial ventures, including the sale last year of 100 horses to a Belarusian manufacturer of kumys, a popular beverage in swathes of Eastern Europe and Central Asia. Kumys is produced from fermented mares' milk.
"We're not afraid of radiation. We've already gotten used to it," said Kirpichenko, who suggested that his horses had to pass a basic eyesight test to confirm their good health. "Horses aren't being born with two heads or without legs. There are no such mutations," he said. "This Chernobyl syndrome passed long ago."
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Worker detonates water bottle bomb in radioactive warehouse

Hannah Hess, E&E reporter
Published: Monday, April 25, 2016

Investigators believe a disgruntled Department of Energy employee, mad about broken showers in the men's locker room, built and detonated an improvised explosive device in a Pike County, Ohio, warehouse that contained 55-gallon drums of low-level radioactive waste.
The device -- a water bottle spiked with hydrochloric acid -- created an explosion described by one witness as "louder than a 20 gauge shotgun," according to an investigative report by DOE's Office of Inspector General that was not disclosed to the public.
Only the employee believed to be behind the stunt was injured in the blast, which occurred shortly after 10 a.m. Aug. 7, 2014, in the controlled access area of the Portsmouth Gaseous Diffusion Plant.
Co-workers found the unidentified suspect splattered in "wet liquid" near a toolbox, acting calmly, with no complaints of injuries, according to the OIG documents, obtained under the Freedom of Information Act.
"I am not burning," he announced to a supervisor, who went to investigate after hearing the "loud bang" from the waste recycling warehouse.
The employee, who had previously been singled out for "erratic" and "childish" behavior, such as throwing things at his colleagues, was escorted to the medical unit. Health workers there examined him and cleared him to return to work.
On a personal statement form submitted after the accident to Fluor-BWXT Portsmouth LLC -- the DOE contractor in charge of decontamination, decommissioning and remediation -- the employee reported he felt a "concussion and blast" on the left side of his head and body that affected his left ear.
When asked for lessons learned from the event, he responded: "Need more safety showers and building water for the showers NOTE! Our shower water has been out since June 11, 2014 -- C'mon man it's a sanitary H2O line. I though we had real engineers this time span tells me the system is broke -- So fix it get personnel in that can fix it like hourly maintenance," according to the report.
The employee, who co-workers said was "extremely upset" over a broken shower in the building, was the only person in the area at the time of the explosion, said the OIG report.
An employee of Wastren-EnergX Mission Support LLC, the contractor in charge of facility support services at Portsmouth, filed a complaint about the incident with the OIG the day after the blast.

Three days later, the FBI got involved.
Investigators collected DNA and fingerprints from the scene, took photographs and started interviewing witnesses. They learned other employees had requested not to work with the suspect, and that he had been in trouble before for violating the dress code.
"You can change my clothes but not change the boy," one employee recalled him stating loudly that spring. The suspect had just returned to work after being disciplined for wearing improper attire.
Employees told the OIG that they heard the man talking about making explosive devices "when he was in high school." One co-worker recalled an encounter with the suspect at a Waverly, Ohio, Wal-Mart where he seemed "extremely pumped up" when talking about the explosion. The man allegedly bragged the stunt was "just one more thing" he would "get away with."
Attempts to prosecute the suspect failed.
Fingerprints and swabs from the water bottle did not provide enough forensic evidence for the Ohio Bureau of Criminal Identification and Investigation, state Fire Marshal Laboratory, or Oak Ridge Police Department in Oak Ridge, Tenn., to further the probe.
The OIG marked the case as closed last year, when the U.S. Attorney's Office in Cincinnati and the Pike County district attorney both declined prosecution.
The report does not say whether the suspect was disciplined for the incident. DOE referred the question to Fluor.
A spokesman for the company told *E&ENews PM* that the person involved in the incident was "no longer with the company."
Twitter: @ha_nah_nah Email: hhess@eenews.net
Source: http://www.eenews.net/eenewspm/2016/04/25/stories/1060036216
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Information Notices

Unless otherwise noted, these are ADAMS Accession documents, are publicly available, and will be accessible via the public web site Electronic Reading Room in the Agency Document Access and Management System (ADAMS),
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Part 21 and Miscellaneous

Information Notice 2016-04, “ANSI N14.5-2014 Revision and Leakage Rate Testing Considerations”, dated March 28, 2016
ADAMS Accession No.: ML16063A287
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Generic Letter 2016-01, “Monitoring of Neutron-Absorbing Materials in Spent Fuels,” dated April 7, 2016

ADAMS Accession No.: ML16097A169
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Regulatory Issue Summary 2016-03, “10 CFR 50.59 Issues Identified in NRC’s San Onofre Steam Generator Tube Degradation Lessons Learned Report,” dated April 13, 2016 ADAMS Accession No.: ML15196A575
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Regulatory Issue Summary 2016-04, “Clarification of 10 CFR 50.46 Reporting Requirements and Recent Issues with Related Guidance Not Approved for Use,” dated April 19, 2016 ADAMS Accession No.: ML15324A296
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Information Notice 2016-5, “Operating Experience Regarding Complications from a Loss of Instrument Air,” dated April 27, 2016
ML6028A308
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FirstEnergy

Summary of March 30, 2016, Meeting with FirstEnergy Nuclear Operating Company on its Draft Probabilistic Risk Assessment RAI Related to its License Amendment Request to Adopt NFPA Standard 805 (CAC Nos. MF3301 and MF3302)
ADAMS Accession No.: ML16105A008
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Davis-Besse

Davis-Besse Nuclear Power Station, Unit 1 - Relaxation of the Schedule Requirements for Order EA-12-049, "Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events"
ADAMS Accession No. ML16077A370
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NUREG-2193, Vol. 2, "Safety Evaluation Report Related to the License Renewal of Davis-Besse Nuclear Power Station. Docket Number 50-346, FirstEnergy Nuclear Operating Company Sections 4 to 6 Appendices."
ADAMS Accession No.: ML16104A301
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NUREG-2193, Suppl 1, "Safety Evaluation Report Related to the License Renewal of Davis-Besse Nuclear Power Station. Docket Number 50-346, FirstEnergy Nuclear Operating Company."
ADAMS Accession No.: ML16140A350
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ADAMS Accession No.: ML16104A207
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DAVIS-BESSE NUCLEAR POWER STATION NRC INTEGRATED INSPECTION REPORT 05000346/2016001 AND ASSESSMENT FOLLOWUP LETTER
ADAMS Accession Number ML16118A435
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Perry

NRC Security Baseline Inspection Report 05000440/2016403 (Cover Letter Only)
ADAMS Accession Number: ML16097A621
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Ltr 04/19/16 Perry RPM RAI (JGC)
ADAMS Accession Number: ML16110A423
*****

Order Approving Direct Transfer of License and Conforming Amendment Related to Perry Nuclear Power Plant, Unit No. 1 (CAC No. MF6412).
ADAMS Accession No.: ML16078A092
*****

Order Approving Direct Transfer of License and Conforming Amendment Related to Perry Nuclear Power Plant, Unit 1 (CAC No. MF6412).
ADAMS Accession No.: ML16078A092
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Perry - Revision of Flood Hazard Reevaluation Report in Response to NRC Request for Additional Information, per 10CFR50.54(f) Regarding the Flooding Aspects of Recommendation 2.1 of the Near-Term Task Force (NTTF) Review of Insights From the Fukushima Dai-ichi Accident (TAC No. MF6099)
ADAMS Accession No.: ML16084A871
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Beaver Valley

Beaver Valley Power Station, Units 1 and 2 - Request for Additional Information Regarding License Amendment Request to Adopt National Fire Protection Association Standard 805 (CAC Nos. MF3301 and MF3302)
ADAMS Accession No.: ML16071A122
*****

NUCLEAR REGULATORY COMMISSION PLAN FOR THE AUDIT OF FIRST ENERGY NUCLEAR OPERATING COMPANY'S FLOOD HAZARD REEVALUATION REPORT SUBMITTAL RELATING TO THE NEAR-TERM TASK FORCE RECOMMENDATION 2.1-FLOODING FOR BEAVER VALLEY POWER STATION, UNITS 1 AND 2 (CAC NOS. MF3286 AND MF3287)
ADAMS Accession No. ML16105A211
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Region I Operator Licensing Exam Schedule from 04012016 to 04302018.
ADAMS Accession No.: ML166120A191
*****

Beaver Valley, Unit 2 - Transmittal of 180-Day Steam Generator Tube Inspection Report - Technical Specification 5.6.6.2.
ADAMS Accession No.: ML16097A452
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Beaver Valley, Units 1 and 2 - Discharge Monitoring Report for February 2016.
ADAMS Accession No.: ML16088A138
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IR 05000334/2015004 & 05000412/2015004 - Beaver Valley Power Station - Integrated Inspection Report (October - December 2015).

ADAMS Accession No.: ML16088A388
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Portsmouth Facilities

NRC Response on Updated Foreign Ownership, Control, or Influence Information for the United States Enrichment Corporation.
ADAMS Accession No.: ML16092A061
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Fermi 1

No reports

Fermi 2

Project Manager Assignment
ADAMS Accession No. ML16089A175
*****
Issuance of Amendment to Revise License Amendment Request to Revise Technical Specification Section 3.5.1, "Emergency Core Cooling System - Operating" Report (CAC No. MF6757)
ADAMS Accession No.: ML16064A637
*****
Ltr. 04/08/16 Fermi Power Plant, Unit 2 - Request for Information for an NRC Triennial Baseline Component Design Bases Inspection; Inspection Report 05000341/2016007
ADAMS Accession Number ML160099A305
*****
Issuance of Amendment RE: Technical Specifications to Adopt Technical Specifications Task Force - 523, "Generic Letter 2008-01, Managing Gas Accumulation" (CAC No. MF6756)
ADAMS Accession No.: ML16069A006
*****
Submittal of Revision 46 to the Fermi 2 Radiological Emergency Response Preparedness (RERP) Plan.
ADAMS Accession No.: ML16081A356
*****
Revision 41 to EP-101, Classification of Emergencies and Revision 26 to EP-545, Protective Action Recommendations.
ADAMS Accession No.: ML16036A051
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Fermi 3

Submittal of Application for Renewal of the National Pollutant Discharge Elimination System (NPDES) Permit.
ADAMS Accession No.: ML16089A011
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