

UTILITY RADIOLOGICAL SAFETY BOARD
MEETING MINUTES
April 16, 2014

Mr. Michael Snee, Ohio Department of Health, called to order the April 16, 2014 meeting of the Utility Radiological Safety Board at 1:30 p.m. at the Ohio Emergency Management Agency.

The first order of business from the agenda was the roll call taken by Melissa Wulliger.

I. ROLL CALL (Board Members)

EMERGENCY MANAGEMENT AGENCY	MS. NANCY DRAGANI
DEPARTMENT OF HEALTH	MR. MICHAEL SNEE
ENVIRONMENTAL PROTECTION AGENCY	MR. KEVIN CLOUSE
DEPARTMENT OF AGRICULTURE	MR. CHUCK KIRCHNER
PUBLIC UTILITIES COMMISSION	MR. DAN FISHER
DEPARTMENT OF COMMERCE	MR. DEAN JAGGER

A quorum was declared.

Other Notable Attendees:

Ms. Hiliary Damaser, Attorney General' Office
Mr. Allan Barker, NRC
Mr. Rick Collings, First Energy
Mr. Terry Brown, Perry Nuclear Power Plant's PI Director
Mr. Eric Denison, Ohio Dept. of Health
Mr. Tim Clark, Emergency Management Agency

II. READING OF THE JANUARY 13, 2014 MINUTES (ADOPTED)

The board dispensed with the reading of the January, 2014 meeting minutes. Mr. Snee, Ohio Department of Health, asked for additions, corrections or deletions to the minutes. There were none. Mr. Jaggar, Department of Commerce, made the motion to approve the minutes, and Mr. Fisher, Public Utilities Commission, seconded the motion. None opposed and the motion carried.

III. OLD BUSINESS

A. URSB Working Group Report

The URSB rules are coming up on the required five-year rule review. It will be requested that Rule 4937-1-02, which governs the Citizen's Advisory Council, be rescinded. Ms. Damaser and Ms. Welch will oversee this process.

It was requested that the Zack Clayton update the Board regarding the URSB work group activities. The AG brochure has been completed for 2014. IZRRAG Activities have been completed. The field teams are in the process of testing RadResponder Pro. Mr. Clayton briefly explained how RadResponder Pro works. Tim Clark will give a presentation on RadResponder Pro later in the meeting. During the upcoming dry run, we will determine if

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we want to evaluate it or not. Emergency Worker KI project date has passed. Some of the KI has been extended for emergency workers until the end of April. Supply was delivered to ODH warehouse. The packets will be converted to a five-day supply verses the seven day due to integrity of packaging. The general public KI is due to expire in October. Delivery is expected August, 2014.

IV. NEW BUSINESS

A. URSB Working Group Quarterly Reports

The Ohio Emergency Management Agency, the Ohio Environmental Protection Agency, the Ohio Department of Health and the Ohio Department of Agriculture all provided quarterly reports. The following are the updates:

ODA

- Mr. Kirchner reported that in addition to attending the monthly working group meetings, he attended a NEPAC meeting in January. He, the ODA field sampling teams and senior management also attended training here at EMA on utilization of the WebEOC. There were about 71 participants in the training. Mr. Kirchner was pleased that senior management participated. He suggested that a drill be completed a couple times a year. Mr. Kirchner solicited questions, and there were none.

EPA

- Mr. Clayton reported that in addition to EPA's agency updates, they are working on the report proposed rule changes which will be presented later in the meeting. The Radiation Assessment team training is scheduled for June 4 and 5 and other agencies are invited. Changes to EPA assessment procedures will be made. To obtain an accurate record, it is suggested that information not be recorded on a white board. Mr. Clayton will change the language to reflect that suggestion. Mr. Clayton solicited questions, and there were none.

OEMA

- The Beaver Valley dry-run took place on April 1st and was based on a Hostile Action scenario. The scenario unfolded much more rapidly than traditional exercises and several potential changes were identified. Columbiana County will be conducting a county tabletop so they can review their processes again. The second dry-run is scheduled for June 3rd. Mr. Bear reported that EMA is going to support from the assessment. The URSB working group wants Dose Assessment to practice utilizing the telephones and simulating the timing so to clarify the process for waiting a few minutes until assessment comes up with recommendations.
- The state's new eight year exercise cycle will commence with the 2015 Davis-Besse hostile action based exercise scenario. FEMA V provided a spreadsheet that laid out a

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potential exercise schedule. This document will be reviewed as the radiological branch works with our state and county partner agencies to develop an exercise cycle that meets their needs.

Mr. Bear will seek draft approval soon.

- Conference calls amongst EMA, ODH, the counties and the NRC regarding the Davis-Besse's void in the concrete wall have resolved all issues regarding the void.
- Mr. Clark will be presenting RadResponder data collection software.
- Ms. Chubb is revising the training modules and updating the material to make it fresh.
- Mr. Bear reviewed all of the unusual events for Beaver Valley and Perry, and added that he was in California attending the Naval Postgraduate Schools REP Executive Education Class which was very helpful –pretty proactive discussions. Mr. Bear was in the pilot program for the course. If interested reach out to Mike for more information. A mobile half-day work shop for executive level personnel has been developed.

DEPARTMENT OF COMMERCE

- There were no updates to report at this time.

ODH

- Mr. Snee reported that ODH observed three JIOP inspections, and attended the NEPAC meeting in January, 2014.
- Ms. Hintz attended training in Albuquerque on TurboFRMAC FRMAC software.
- The new shipment of KI for emergency workers will be delivered April, 2014. NRC got FDA to extend the expiration for six months to accommodate delivery schedule. General public KI expires October, 2014 which will be a separate delivery.
- ODH is in the process of reviewing all Nuclear Power Plant procedures per the annual review requirement.
- MIDAS, common Does Assessment software has been chosen by the utility. It has taken quite a bit of time to implement at all the FENOC plants. BVPS 2014 exercise will be the first exercise to utilize the software.

PUCO

- Has been participating in the URSBWG meetings. Nothing to report at this time.

B. URSB Rule Review

It is time for the five-year rule review. Ms. Damaser will look at these rules for us and all will be filed according to the ORC. The rule for the Citizen's Advisory Council will be rescinded. A packet of the new rules and rescinded ones will be presented at the next statutory board meeting.

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C. Proposed Changes to U.S. EPA Environmental Radiation Protection Standards for Nuclear Operation – Zack Clayton, Ohio EPA and Eric Denison, Ohio Department of Health

Mr. Clayton reports on the Advance Notice of proposed Rulemaking. “This Advance Notice of Proposed Rulemaking,” (ANPR) requests public comment and information on potential approaches to updating the Environmental Protection Agency's “Environmental Radiation Protection Standards for Nuclear Power Operations” (40 CFR part 190). These standards, originally issued in 1977, limit radiation releases and doses to the public from normal operation of nuclear power plants and other uranium fuel cycle facilities--that is, facilities involved in the milling, conversion, fabrication, use and reprocessing of uranium fuel for generating commercial electrical power. These standards were the earliest radiation rules developed by EPA and are based on nuclear power technology and the understanding of radiation biology current at that time. The Nuclear Regulatory Commission (NRC) is responsible for implementing and enforcing these standards.”

So the current version of 40 CFR 190 is based on a 1970s understanding of radiation biology and attendant technology. It has not been updated.

Comments on this proposed rulemaking must be received on or before June 4, 2014.

The proposed revisions are for normal nuclear power operations, but will use improved intake data and physiological modeling to set new standards. Specifically, they will address age and gender specific intake risk factors based on nuclide ingestion. This specificity is important in public protection for Dose Assessment and advisory recommendations. So although the revisions do not address accidental releases of radioactive material, the data used to develop the rules will be useful in accident scenarios and should be in alignment with EPA *Federal Guidance Report No. 13* and ICRP 103.

The current rules do not address groundwater contamination. The revisions account for observations of groundwater contamination and EPA is considering whether and how to develop a ground water provision. Long lived nuclides and water transportable nuclides present a unique hazard on which 40 CFR 190 is silent. Many communities depend on groundwater for the public drinking supply. This is an issue which should be addressed in the rule.

If the EPA decides to revise the existing standards, then the Agency would follow the procedures outlined in the AEA and the Administrative Procedure Act (APA) and publish a proposed rule in the Federal Register. Comments received on the ANPR will inform the

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development of a proposed rule and be used by the Agency to provide a clearer understanding of science, technology and other concerns and perspectives of stakeholders.

Section A

Regarding movement to a risk based standard, the National Academy of Sciences in its 1995 report, *Technical Bases for Yucca Mountain Standards* recommended that EPA adopt a standard expressed as risk for two reasons. First, a risk standard is advantageous relative to a dose-based standard because it represents a societal judgment regarding health impacts and therefore ``would not have to be revised in subsequent rulemakings if advances in scientific knowledge reveal that the dose-response relationship is different from that envisaged today. "Second, a standard in the form of risk more readily enables the public to comprehend and compare the standard with human-health risks from other sources.

Dose would be based in the rule on risk. Currently the rule specifies dose. To change dose requires a rules change. If the understanding of biological risk alters the exposure associated with the chosen risk, the rule does not need to be altered, and the calculated dose will change outside of rulemaking based on the new knowledge.

Concurrent with the discussion of using risk is the question of what risk factor to use, morbidity or mortality? Other risk standards (chemical and waste for example) are based on morbidity or health effects. Using this would bring the models and rationale for health risk rules into alignment. This also negates needing to rewrite rules as health outcomes change with lower mortality for a given exposure due to improving health care.

Section B

An issue with ICRP 60 and 103 is that public exposure should be limited based on all man-made sources of radiation regardless of the environmental sink they end up in. This is inconsistent with other EPA rules and regulations which set limits on effluent for a plant. For example, mercury emissions from coal burning plants are set and are not modified because a new plant is built somewhere. The risk assessment and contaminant level for a brown field release in Cleveland is not contingent on how much the level was set for in Cincinnati. Limits should be set based on affected population.

Section C

Currently emissions are regulated by a radioactivity release per total gigawatt-year with specific radionuclides and generic alpha emitting transuranics called out with individual allowed limits. These limits are based on collective dose and not on affected individuals. (It is not specifically stated, but this appears to be the basis of the ICRP limit for all man-made

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sources.) Current risk assessment methodologies consider individual dose to be a more accurate assessment of risk.

It does not appear to be justifiable to apply an industry-wide limit for material releases, but limits on effluent for individual plants and radionuclide specific limits do appear tenable. These limits should be based on public exposure risk for a maximally exposed individual as is used for other risk assessments. In a risk based dose limit scenario all radionuclides will need to be evaluated and assigned a limit.

Section D

The current regulations do not address groundwater contamination. Evaluation in the 1970's indicated the dose from water effluent or contamination would be negligible compared to gaseous releases. At the time there was no documented instance of a greater than 1 mRem dose offsite via a water pathway.

In the past decade there have been several instances of groundwater releases that exceed the maximum concentration limit (MCL) for tritium. "EPA has the authority under the Atomic Energy Act to promulgate generally applicable environmental standards to limit radioactive materials in the general environment outside the facility. Thus, any ground water standard that would be promulgated as part of a revision of 40 CFR part 190 would be limited to application of these limits outside the facility boundary." If EPA includes groundwater release criteria in the new rules it would be consistent with other regulations regarding effluent and discharges. This would ensure that appropriate limits are set to keep offsite contamination below the maximum contaminate limit, "MCL."

The plants in the fuel cycle are already under the National Pollutant Discharge Elimination System (NPDES). The only radionuclides in the fuel cycle that are addressed in the fuel cycle are Uranium, Radium, and Vanadium in the "Ore mining and Dressing Point Source" category of 40 CFR 440 subpart C. They are not addressed in permitting for power plants. The governing design and operating principles in NRC regulations 10 CFR part 50 give a numeric [sic] guidance of As Low as Reasonable Achievable. (ALARA). Since all NPDES regulations are numerical in terms of part per million and MCLs are listed in ppm or picoCi/liter it would aid consistency to have radioactive releases from the plant measured and regulated with actual numerical units.

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Section E

Ohio has no specific stake in Spent Nuclear Fuel and High-Level Radioactive Waste Storage, other than an interest in the federal government taking possession of spent fuel. Radioactive material stored onsite should fall under the existing permits and regulations for releases discussed in prior sections.

Section F

This ANPR is the result of a failure to include evolving knowledge and practice into the existing regulation. Any rule or regulation that comes out of this must include mechanisms to update the rules and/or adhere to the five-year review plan that was originally intended for 40 CFR 190. A proactive approach to this issue is advisable.

This rule only applies to a uranium plant.

Mr. Clayton asked Eric Denison, Ohio Department of Health, to present his points regarding 40 CFR 190, Environmental Radiation Protection Standards for Nuclear Power Operations:

40 CFR 190 is titled "Environmental Radiation Protection Standards for Nuclear Power Operations." As Zack mentioned, it was enacted in 1977, became effective in 1979, and has not been updated since that time, despite significant advances in radiation science. 190 covers planned releases of radioactive material to the environment from all points in the uranium fuel cycle milling, chemical conversion, isotopic enrichment, fuel fabrication, use of fuel in power generation by light-water reactors, and reprocessing of spent fuel. It is surprisingly short for a regulation with such a significant scope•• only two pages, with half of that being definitions. 190 has a very short list of specific limits•••• dose equivalent limits to individual members of the public for whole-body, thyroid, and "any other organ" and activity release limits for Kr-85, I-129, and combined alpha-emitting transuranics. The activity limits apply in aggregate to all facilities involved in the entire fuel cycle.

In the Advance Notice of Proposed Rulemaking, US EPA lists six reasons for reviewing 190. Four of them appear to be of no direct relevance to the Board at this time. The remaining two reasons, advances in radiation protection and dosimetry science, and advances in radiation risk science, are of interest, as they could drive changes to routine Environmental Monitoring activities. Nothing in 190 directly impacts emergency Dose Assessment activities, but if there are significant changes to 1 'JO, they could drive changes in EPA 400 that would then impact our emergency Dose Assessment program.

US EPA has requested public comment on six special issues. I have provided summary outlines for all six, but would like to briefly discuss the three that seem to be of most direct relevance.

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First is the consideration of changing from a dose-based limit to a risk-based limit. Dose-based limits are based on the actual amount of radiation energy absorbed by the individual, while risk-based limits are based on the probability that the exposed individual will suffer a particular negative outcome.

There are several potential benefits to moving to a risk-based model. Most of these involve public perception, but there is also the fact that if future data shows a change in the dose-to-risk relationship, the regulatory agencies and the industry can adapt their programs without additional legislative input.

There are also potential complications with moving to a risk-based model. These include significant questions on which type of risk to consider where to set the risk limit, and what dose-to-risk relationship to use when converting to practical limits that the industry can use.

The second issue that USEPA asks commenters to consider is the evolution of dosimetry methodology. 190 are based on the 1959 ICRP 2 report, which uses a critical-organ concept that is sorely outdated by most modern standards. Practically every other internal dosimetry model and method, including all of the other USEPA regulations, uses a TEDE concept such as that found in ICRP 60.

ICRP 60 methodology is well-established, but somewhat dated. The most recent methodology, ICRP 103, is not complete yet, as ICRP has not released all of the appendices and tables necessary to fully implement. USEPA asks for input on whether to require ICRP 60, require ICRP 103, or allow agencies and licensees the flexibility to choose for themselves and update as possible without further legislative action.

The third issue commenters have been asked to consider is radionuclide release limits. There are a number of problems with continuing to use the existing limits. First, they are based on the concept of collective dose, which has fallen out of favor in most other areas of science.

Second, they are aggregate national limits for total releases from all facilities involved in the fuel cycle. This means that if a new facility opens, the effective limits for all previously-existing facilities have to be tightened to maintain the national limit.

Third, they are based on the state of the art in control technology from 1977. This resulted in limits for Kr-85 and I-129 that might be easy to meet today and no official limits for tritium and C-14, because there was no commercially available control technology.

Last, but not least, the existing regulation sets limits for only alpha-emitting transuranics and two gaseous fission products. This means that though they nominally apply to every facility

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in the uranium fuel cycle, they effectively apply only to nuclear power plants and any reprocessing facilities that might open in some wished-for future.

As I noted earlier, there are three other issues that EPA opened for public comment. Summary information is in your hand-outs, but I wasn't planning to discuss them today.

Does anyone have any questions? I believe this leaves the Board with three questions. First is whether or not to submit comments on the Proposed Rulemaking. Second is what to say if submitting comments. Third is whether the group should submit one set of comments or if individual agencies should each submit their own.

Mr. Clayton continues by adding:

a. Should the Agency express its limit for the purpose of this regulation in terms of radiation risk or radiation dose?

EPA should follow the recommendations from the NAS 1995 report, *Technical Bases for Yucca Mountain Standards* recommending that a risk standard should be adopted for the reasons enumerated in the ANPR. Also, if the understanding of biological risk alters the exposure associated with the chosen risk, the rule does not need to be altered; the calculated dose will change outside of rulemaking based on the new knowledge.

b. Should the Agency base any risk standard on cancer morbidity or cancer mortality? What would be the advantages or disadvantages of each?

A morbidity based risk standard should be used. Other risk standards (chemical and waste for example) are based on morbidity or health effects. Using this would bring the models and rationale for health risk rules into alignment. This also negates needing to rewrite rules as health outcomes change with lower mortality for a given exposure due to improving health care.

c. How might implementation of a risk limit be carried out? How might a risk standard affect other federal regulations and guidance?

A Risk Limit should be carried out consistent with other EPA standards for public health protection. This would be consistent with other regulations and guidance.

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II.B.

a. If a dose standard is desired, how should the Agency take account of updated scientific information and methods related to radiation dose--such as the concept of committed effective dose?

A dose based standard is not desirable. Changing a standard inside a regulation is inefficient. The dose should be based on the risk factor set as an acceptable limit and the dose can then evolve with increased understanding of radiation biology.

b. In updating the dose standard, should the methodology in ICRP 60 or ICRP 103 be adopted, or should implementation allow some flexibility? What are the relative advantages or disadvantages of not specifying which ICRP method be used for the Dose Assessment?

An issue with ICRP 60 and 103 is that public exposure should be limited based on all man-made sources of radiation regardless of the environmental sink they end up in. This is inconsistent with other EPA rules and regulations which set limits on effluent for a plant. For example, mercury emissions from coal burning plants are set and are not modified because a new plant is built somewhere

Limits should be set based on affected population, or the nearest sensitive receptor.

II.C.

a. Should the Agency retain the concept of radionuclide-specific release limits to prevent the environmental build-up of long-lived radionuclides? What should be the basis of these limits?

The concept of collective dose is antiquated. A more rational approach would be the maximally exposed receptor based on a 70 year lifetime exposure. This would be factored by radionuclide into the assigned risk.

b. Is it justifiable to apply limits on an industry-wide basis and, if so, can this be reasonably implemented? Would facility limits be more practicable?

The concept of collective dose is antiquated. It cannot be reasonably implemented. EPA has experience and expertise in establishing facility limits.

c. If release limits are used, are the radionuclides for which limits have been established in the existing standard still appropriate and, if not, which ones should be added or subtracted?

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The existing release limits are based on old calculations and the suite of radionuclides is limited. Much of the work in existence for the FDA accident ingestion guidance could be implemented without a complete rework of the research. The nuclides of concern should encompass the ones released in the fuel cycle and in spent fuel inventory.

I.I.D.

a. If a ground water protection standard is established in the general environment outside the boundaries of nuclear fuel cycle facilities, what should the basis be and how should it be implemented?

The basis should be established the way any other groundwater discharge is established based on the nuclide, or risk group (in the case of transuranic alpha emitters) These are commonly based on some function of the MCL.

b. Are additional standards aimed at limiting surface water contamination needed?

The NPDES permit should be expanded to include radionuclide discharges from fuel cycle facilities. This should include all radionuclides discharged from the facility.

Mr. Snee asked Mr. Clayton who recommended the report on these levels? Mr. Clayton responded that the above are his thoughts and comments. These thoughts or recommendations did not come from EPA. When asked if the working group has worked on these recommendations/thoughts, Mr. Clayton responded by saying that this was brought up at the last working group meeting. Mr. Denison and Mr. Clayton were tasked with getting something drafted and presented. Board members made it clear that voting on this issue would not happen at this meeting-too many issues and unknowns. It was suggested that the working group get together on this issue and other qualified people in Ohio. It was also recommended that Mr. Clayton's agency collaborate with him so that the recommendations are sent out under an agency.

D. RadResponder Presentation – Tim Clark, Ohio EMA

- What is RadResponder? It is a software application Internet Web Page Applications Android Apple iOS RadResponder Pro. What does RadResponder do? Provides rapid and accurate data collection during radiological incidents via a centralized location; More Data; Better Data (improve accuracy); Receive Data Faster. RadResponder Design Principles; Free with no startup costs; Always available & controlled by end users; Works with whatever equipment users already have; Easy to deploy, learn, and maintain.

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- Incorporate training and support from the beginning; Stay focused on data sharing and partnerships; Provide open device and integration options; Employ Standard formats and terminology; Tightly integrate with existing federal capabilities.

Mr. Snee asked that we take a break for ten minutes right after Tim Clark's presentation. After a short break, Mr. Snee called the meeting to order at 3:15.

E. Nuclear Regulatory Commission

The Nuclear Regulatory Commission representative, Mr. Allan Barker, read from prepared notes. NRC completed its end-of-cycle performance review of all three sites on February 12, 2014.

- **Davis-Besse Nuclear Power Station**

The NRC reviewed the most recent quarterly performance indicators (PIs) in addition to inspection results and enforcement actions from January 1, 2013 through December 31, 2013. The NRC determined the performance at Davis-Besse during the most recent quarter was within the Regulatory Response Column of the NRC's Reactor Oversight Process (ROP) Action Matrix because of one or more greater-than-green Security Cornerstone inputs described in NRC inspection reports dated November 8, 2012, and September 7, 2012. In response to these Action Matrix inputs, the NRC identified that a supplemental inspection would be required.

NRC Inspection Report 05000346/2013408, dated December 19, 2013, identified that the supplemental inspection was satisfactorily completed and that the NRC determined that completed or planned corrective actions were sufficient to address the performance that led to the one or more greater-than-green Security Cornerstone inputs. As a result, the NRC determined that the inputs would be closed and the performance issues would not be considered as Action Matrix inputs as of December 19, 2013. Thus, the NRC determined the performance at Davis-Besse to be in the Licensee Response Column of the ROP Action Matrix as of December 19, 2013.

Selected upcoming inspections from the 2014/2015 inspection schedule were identified.

- **Perry nuclear Power Plant and**

On February 12, 2014, the NRC completed its end-of-cycle performance review of Perry. The NRC reviewed the most recent quarterly PIs in addition to inspection results and enforcement actions from January 1, 2013, through December 31, 2013. The NRC determined that overall, Perry operated in a manner that preserved public health and safety and met all cornerstone objectives. The NRC determined the performance at Perry during the most recent quarter was within the Licensee Response Column of the ROP Action Matrix because all inspection findings had very low (i.e., Green) safety significance, and all PIs indicated that performance was within the nominal, expected range (i.e., Green).

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As discussed in the previous mid-cycle assessment letter dated September 3, 2013, performance at Perry during the first and second quarters of 2013 was within the Degraded Cornerstone Column of the ROP Action Matrix because of greater than green issues in the Occupational Radiation Safety Cornerstone. In the third quarter of 2013, with the change of the Occupational Exposure Control Effectiveness PI from yellow to green and the successful completion of Supplemental Inspection Procedure 95002 in the Occupational Radiation Safety area, the NRC assessed the performance at Perry to be in the Licensee Response Column of the ROP Action Matrix.

Selected upcoming inspections from the 2014/2015 inspection schedule were identified

- **Beaver Valley Power Station:**

Beaver Valley NRC overall power plant one and two both health and safety met all cornerstones.

On February 12, 2014, the NRC completed its end-of-cycle performance review of Beaver Valley Power Station, Unit Nos. 1 and 2. The NRC reviewed the most recent quarterly PIs in addition to inspection results and enforcement actions from January 1, 2013 through December 31, 2013. The NRC determined that overall, Beaver Valley Power Station, Unit Nos. 1 and 2 operated in a manner that preserved public health and safety and met all cornerstone objectives. Beaver Valley Power Station, Unit Nos. 1 and 2 were in the Regulatory Response Column of the ROP Action Matrix until the third quarter of 2013, due to one or more greater-than-green security cornerstone inputs. The NRC determined that Beaver Valley Power Station, Unit Nos. 1 and 2 returned to the Licensee Response Column in the third quarter of 2013 because a supplemental inspection was successfully completed for the greater-than-green security inputs on May 31, 2013. Subsequently, Beaver Valley Power Station, Unit Nos. 1 and 2 remained in the Licensee Response Column because all inspection findings had very low (i.e., Green) safety significance and all PIs demonstrated that performance was within the nominal, expected range (i.e., Green).

Selected upcoming inspections from the 2014/2015 inspection schedule were identified.

- **Potassium Iodide**

Prior to this meeting, the KI batch delivery schedule was communicated by the NRC to the Ohio Department of Health. The batches are for emergency workers and members of the public. The first batch will be shipped in April 2014. The second batch should arrive in the summer of 2014.

Mr. Barker reported on the Inspection/Activity Plan for plants. For information on this report and the schedule, please contact the URSB secretary for a copy.

F. Utility Reports

First Energy, Mr. Rick Collings, introduces the new Performance Improvement director at Perry Nuclear Power Plant. His name is Terry Brown. Mr. Collings started his report with Beaver Valley.

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- **Beaver Valley Power Station:**

March 1st Unusual Event

On Saturday, March 1, 2014, 2056 hours, the Unit 1 Control Room was adding water to a Safety Injection Accumulator. A relief valve opened releasing approximately 45 gallons of water into the Containment Sump.

At 2120 hours, a Containment Residual Heat Removal (RHR) smoke alarm was received in the Control Room. Using available Control Room indications (i.e. Containment temperature, containment pressure, dew point, etc.) the Control Room crew concluded that the Containment RHR smoke alarm was due to the relief valve opening providing a spurious smoke alarm and that there was not an actual fire and therefore, the alarm was not valid. At 2135 the Shift Manager determined that the RHR smoke detectors were non-functional and unreliable.

Two conference calls were conducted with the Control Room, BVPS Management and Fleet personnel to discuss plant conditions and the validity of the smoke detector alarm. The first call was initiated on 3/1/14, at 2200 hours and the second call initiated on 3/1/14, at 2345 hrs. Near the conclusion of the second conference call, at approximately 0010 hours (3/2/14), the Shift Manager determined that the Emergency Plan entry criteria was required to be reassessed and left the conference call.

An Unusual Event was declared on 3/2/14, at 0013 hours based on EAL HU4, "FIRE within the PROTECTED AREA not extinguished within 15 minutes of detection".

a. Opportunities for improvement

1. The emergency classification was accurate but declared late due to the U1 Shift Manager believing that the Containment RHR smoke alarm was invalid (lifting of the relief valve while filling the SI Accumulator and water affecting the smoke alarm sensor). (CR-2014-04517)

Lessons Learned:

- "... An alarm is assumed to be an indication of a FIRE unless it is disproved within the 15 minute period by personnel dispatched to the scene. In other words, a personnel report from the scene may be used to disprove a sensor alarm if received within 15 minutes of the alarm, but shall not be required to verify the alarm."
- This EAL is specific that the Alarm must be assumed to be valid unless a person on scene can disprove the alarm within 15 minutes of indication.

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2. The offsite notification was accurate and initiated within 15 minutes, but was not completed within 15 minutes due to Beaver County Emergency Management Agency (BCEMA) and Columbiana County Emergency Management Agency (CCEMA) not answering the Initial Notification Conference call (CR-2014-04518).

Lessons Learned:

- Columbiana County EMA was already responding to an emergency and by the time they picked up the call, the call was over.
- Beaver County EMA struggled to locate the bridge line passcode -The passcode has since been permanently attached to the 911 dispatcher's terminals. (CR-2014-04519).

b. Planned Outage Activities

Unit 2 begins their 1h refueling outage @ 00:00 on 4/19/2014. Scope Includes:

- Refueling
 - Rx Vessel Head Inspection
 - Steam Generator Tube Eddy Current
 - Exit Core Thermocouple Replacement
 - Fukushima Plant Modifications
 - Preventive Maintenance and Surveillance Tests
- **Davis-Besse Nuclear Power Station:**
 - a. Outage Summary**

The steam generator replacement project during 18RFO was the largest undertaking at Davis-Besse since the plant's construction. Approximately 3,200 supplemental workers were brought in for the generator replacement, compared to 1,500 for a normal refueling outage. The project is estimated to have a total economic impact of \$500.7 million on the region. The new steam generators and hot legs were manufactured by Babcock & Wilcox Canada and transported by ship across Lake Erie to the Port of Toledo, where each 72-foot-long, 12-foot-wide, 470-ton generator was loaded onto two railway cars for transport to Davis-Besse. First, the two old generators were rigged, lifted and moved out and sealed inside the Old Steam Generator Storage Facility.

After moving in the new steam generators the hot leg piping was welded into place from the outside. Workers then went inside the piping to begin welding support activities. Inside, the pipe is 36 inches wide, narrowing to 31 inches in the flow element section, and contains a 180-degree turn for access to the lower weld area. Despite the cramped working conditions, extensive training in a full-scale mockup of the hot leg access system prevented any significant injuries during this welding.

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Once the new generators were partially welded into place, two refurbished reactor coolant pump (RCP) motors were installed, ensuring proper alignment with the cold leg piping that feeds the pumps. Two old RCP motors were removed from Containment to be shipped off for refurbishment and reinstallation during the 191h Refueling Outage.

Two rebuilt RCP seals were installed after meeting all critical acceptance criteria. Each seal is a mechanical device with three different sections (stages) used to minimize leakage from the pumps and aid in the breakdown of the reactor coolant system (RCS) pressure between the seal stages.

18RFO included extensive work on the Main Turbine and its control system. The Main Turbine consists of the high-pressure turbine, two low-pressure turbines, main generator and exciter. 184 first-stage first stage rotor buckets and covers on the high-pressure turbine and the main generator rectifiers and voltage regulation systems were replaced. A new digital electro-hydraulic control (DEHC) system, a state-of-the art control system, was installed to control Main Turbine speed and load. With the old analog system, one trip could cause the entire system to be de-energized; the new DEHC has triple redundant systems to prevent such failures, and can easily store diagnostic information.

Also installed was a new automatic voltage regulator (AVR) for the generator rectifier-which ensures a consistent generator output to the electrical distribution system - and a Turbine Supervisory Instrumentation (TSI) monitoring system for vibration, temperatures, rotational speed, etc.

Two new Turbine Plant cooling water heat exchangers were installed. (A third was replaced last May.) The heat exchangers use water from Lake Erie to transfer and remove heat from the water that keeps non-safety Turbine Plant equipment at normal operating temperatures.

Davis-Besse also installed some new radiation monitors for greater reliability and more accurate Dose Assessment for safe operation. The new monitors are made by Mirion replacing the obsolete Kaman monitors. During normal plant operation, the radiation monitors take samples. If the station vent radiation monitors detect radiation, for example, they automatically switch Control Room ventilation to the Control Room Emergency Ventilation System.

More than 1000 feet of service water piping was replaced during the outage. The service water system uses water from Lake Erie to cool plant components before dissipating the heat into the environment.

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About 45 feet of feed water piping in the Turbine Building was replaced due to flow accelerated corrosion (FAC) that had resulted in the thinning of the pipe walls. The FAG-affected piping was replaced with piping with a higher chromium content to prevent FAC in the future.

During 18RFO, Davis-Besse commissioned the new Ohio Edison Beaver 345-kilovolt (kV) to Davis-Besse Line and Breaker 65, completing a major milestone in a complex, multi-year project that will increase the safety and reliability of the site's Switchyard.

b. Shield Building Void

On February 13, 2014 during the eighteenth refueling outage (18R) a concrete void was discovered along the top of the 2011 construction opening of the shield building on the annulus side when removing the blast shields left in-place as the form for a concrete placement in the mid-cycle outage (17M). The size of the void was approximately 25 feet long (the entire top of the access opening) x 3" average height x 9" average depth with a maximum depth of 24". The shield building wall is 30" thick. This condition resulted in an Eight Hour NRC reportable condition for an Unanalyzed Condition that Significantly Degraded Plant Safety.

Engineering performed a past operability evaluation of the concrete void along the top of the shield building construction opening and determined the condition did not prevent the shield building from performing all of its design functions. These design functions are:

- Provide environmental protection of the containment vessel
- Biological Shielding
- Provide for a controlled release of the annulus atmosphere under accident conditions

The NRC Eight Hour notification was retracted upon Operation's acceptance of the past operability evaluation.

The interior forms were intentionally not removed in 2011 since the forms were also designed to be used as blast shields for the 2014 hydro demolition at the beginning of the 18RFO (2014). Because the forms were left in place, it prevented the inspection of the condition of the concrete pour back on the interior wall.

Investigation concluded the void was caused by a stiff concrete at the point of placement which prevented proper placement throughout the wall. The void area has been chipped back to solid concrete and repaired on March 14, 2014 using structural concrete.

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As a result of the concrete placement in 17Mid-cycle outage (2011), a focus team was assembled to review the concrete operation. These lessons learned were incorporated into the shield building concrete placement during 18 RFO. The shield building opening concrete pour-back was completed on April 5, 2014. Concrete forms have been removed and the concrete placement is acceptable to with no voids.

c. License Renewal Update

Background

The original operating license for Davis-Besse will expire on April 22, 2017. FirstEnergy Nuclear Operating Company (FENOC) submitted an application for license renewal to extend the facility operating license to April 22, 2037. As part of this application, FENOC has developed programs to monitor the aging of structures and passive components and will conduct inspections, many of which involve additional internal inspections and additional non-destructive examinations of these structures.

The renewed license approval is dependent on Nuclear Regulatory Commission (NRC) issuance of a final Safety Evaluation Report (SER) (received by FENOC on September 3, 2013) and a final site-specific Supplemental Environmental Impact Statement (SEIS). Several Intervener groups oppose the issuance of the renewed license and had filed contentions before the NRC's Atomic Safety and Licensing Board (ASLB). The original 4 contentions were evaluated and closed by the ASLB. One additional contention pertaining to the issue of permanent storage of radioactive waste remains open for Davis-Besse, but it is held in abeyance pending NRC's generic determination regarding the environmental impacts of storing spent nuclear fuel beyond the licensed life for operation of a nuclear power plant (i.e., Waste Confidence Rule).

Current Schedule: The current schedule for review of the Davis-Besse application by the NRC can be found on the NRC website at www.nrc.gov/license_renewal/plant_status/Davis-Besse. The draft SEIS was issued on February 24, 2014, and a Public Meeting was held March 25, 2014, at the Camp Perry Conference Center in Port Clinton, Ohio, to gather public comments on the DSEIS. The DSEIS comment period ends April 21, 2014. The final SEIS is projected to be issued by the NRC in September 2014. At this time the public meeting schedule for review by the Advisory Committee on Reactor Safeguards is still "to-be-determined" by the NRC staff.

Future Activities:

1. FENOC further evaluation and resolution of the Shield Building is required before Davis-Besse license renewal can move forward.
2. Submittal of the 2014 annual update to the License Renewal Application.

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3. FENOC or industry events that originate new regulatory requirements: Significant industry events, such as the Crystal River, Seabrook, or Davis-Besse structure- related issues, are often the origin of regulatory changes. Utilities must remain cognizant of current industry events and adjust aging management programs accordingly. For those applications under review, approval schedules may be affected by additional NRC requests or other regulatory actions.

4. NRC's resolution of the Waste Confidence issue, targeted for October 2014. A draft Waste Confidence Rule was issued for comment by the NRC in September 2013. The public comment period on the draft rule ended December 20, 2013, and over 30,000 comments were submitted. All US domestic new and renewed license applications are on hold pending resolution of the Waste Confidence issue. Additional information related to the Waste Confidence issue can be found on the NRC website at <http://www.nrc.gov/waste/spent-fuel-storage/wcd/schedule.html>.

Additional information related to license renewal can be found on the NRC website.

- **Perry Nuclear Power Plant:**

- a. Update on Plant Activities 2013 Achievements
 - Perry employees worked more than 2.8 million hours without a lost-time accident and had no FENOC OSHA recordable injuries.
 - The Joint Information Center was moved from Lakeland Community College to more modern and spacious facilities at the Auburn Career Center.
 - Perry successfully met the objectives of the 95002 Inspection, returning Perry to Column 1 of the NRC Reactor Oversight Process.
 - The Institute of Nuclear Power Operations recognized Perry for improved performance.

Unusual Event declared due to a refrigerant (TCE) leak on April 2, 2014.

- Occurred during maintenance activities; valve packing replacement was in progress on four valves in the Off-Gas Brine Cooling System.
- Air samples indicated TCE levels were high enough to prevent normal access to the Off-Gas building
- Unusual Event was declared at 1401
- A vendor was contracted to perform clean-up the material from the Off-Gas building
- Unusual Event exited on April 5 at 0059

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b. Tritium leakage that was detected in late January
On January 20, 2014, analyses of a sample taken from Auxiliary Building groundwater sample point confirmed the presence of tritium at a concentration of 46,200 picocuries per liter (pCi/L). The discovery was made following a notification of a feed water leak from a feed water system venture. The concentration was above the 20,000 pCi/L threshold for voluntarily reporting for a non-drinking water pathway. On January 21, 2014, Perry notified the following agencies: Ohio Emergency Management Agency, Lake County Emergency Management Agency, Ashtabula County Emergency Management Agency, Geauga County Department of Emergency Services, and NEI. A 10CFR50.72 (b) (2) (xi) report was made to the Nuclear Regulatory Commission (NRC) as a result of the State and Local notifications. PNPP repaired the feed water leak on January 21, 2014.

Monitoring of the station's groundwater monitoring wells near the site boundary indicates that tritium in the groundwater has not migrated off the plant property. Accordingly, there is no public exposure and no estimated annual dose to any member of the public via a groundwater pathway. PNPP will continue to monitor the event and will initiate additional corrective actions as needed.

- **FENOC Fleet**

- **a. Status of Central Joint Information Center (JIC)**

The facility is receiving a new roof. Additional renovations are scheduled for 2016 based on revised Capital budgets for the FirstEnergy Corporation. The new Standard Emergency Plan that is in development establishes a standard approach for FENOC's Joint Information function. The three stations will have the same organizational structure, duties and responsibilities and procedures. Closer alignment with FirstEnergy Corporate communications is also included. This approach will still use individual JICs until the central facility is completed in 2016. Transition to the Central facility will be simpler because the three stations will already have the same organization, training and procedures.

- **b. Status of Ring Down Telephone Line Upgrade**

A design approach has been selected to replace the existing 4/5 way (ringdown) telephone system used at Davis-Besse and Perry. The project is fully funded for 2014. The primary system will be housed at the West Akron Campus and the backup system will be in the new Distribution Center. Both facilities provide UPS and backup power. The system will use the FirstEnergy intranet backbone to connect to the three power stations. Connection to the ORO's will be through the public telephone network as primary with cellular phones and satellite phones as backups. Equipment at the ORO's will be directly provided or included as part of grants. Calls will be initiated with preprogrammed simultaneous dialing from the phone bridge. Calls received by the ORO's will have identification verified by passcode.

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Installation is tentatively scheduled for August and testing in September with the system running in parallel with the existing systems at PY and DB for a period of time.

c. Status of Offsite Agency Satellite Phone Project

A purchase order has been issued to an installer who will start installation work in May.

The tentative schedule and status is:

- Hancock County EMA - May
- Columbiana County EMA - May
- Beaver Valley Emergency Operations Facility- May
- Ashtabula County EMA - June
- Geauga County EMA- June
- Lake County -Installation complete
- Perry Emergency Operations Facility- June
- Ohio EMA- TBD- projected June
- Ottawa County EMA - July
- Lucas County EMA - July
- Davis Besse Emergency Operations Facility- July.

V. MISCELLANEOUS

A. Questions

- Financial Disclosure deadline is May 15, 2014
- No questions were presented to the board from the public

VI. ADJOURNMENT

- Dan Fisher, PUCO, asked for a motion to adjourn the meeting and Mr. Clouse, EPA, seconded the motion. The motion passed and the meeting was adjourned at 4:05 p.m.