

UTILITY RADIOLOGICAL SAFETY BOARD

MEETING MINUTES

JULY 8, 2013

Ms. Nancy Dragani, Ohio Emergency Management Agency, called to order the July 8, 2013 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 Lori Osborne.

Guests: Mr. Ricky Collings, Supervisor of Fleet Emergency Preparedness for First Energy Nuclear Operating Company.

I. ROLL CALL

EMERGENCY MANAGEMENT AGENCY  
DEPARTMENT OF HEALTH  
DEPARTMENT OF AGRICULTURE  
PUBLIC UTILITIES COMMISSION  
ENVIRONMENTAL PROTECTION AGENCY  
DEPARTMENT OF COMMERCE  
ATTORNEY GENERAL'S OFFICE

MS. NANCY DRAGANI  
MR. MICHAEL SNEE  
MR. CHUCK KIRCHNER  
MR. DAN FISHER  
MR. KEVIN CLOUSE  
MR. DEAN JAGGER  
MS. HILARY DAMASER

A quorum was declared.

II. READING OF THE APRIL 15, 2013 MINUTES (ADOPTED)

The board dispensed with the reading of the April 15, 2013 Minutes. Ms. Nancy Dragani, Ohio Emergency Management Agency, asked for additions, corrections or deletions to the minutes. Ms. Dragani asked for a motion to approve the minutes. Mr. Michael Snee, Ohio Department of Health, moved to adopt the minutes and Mr. Dan Fisher, Ohio Public Utilities Commission, seconded. The motion carried.

III. OLD BUSINESS

A. URSB Working Group Report

Mr. Michael Bear, Ohio Emergency Management Agency, reviewed the URSB Snapshot spreadsheet, which is a roll-up of the snapshots that are sent out to the URSB Statutory members monthly after the URSB Working group meetings.

B. Midwestern Committee Report

Mr. Michael Snee, Ohio Department of Health, reported that there was not an update from the Midwestern Committee. The National Transportation Safety Forum meeting took place in Buffalo in May. There is nothing new to report since the last meeting. The next meeting is scheduled for October.

#### IV. NEW BUSINESS

##### A. URSB WG Quarterly Reports

Each of the participating URSB agencies provided a report of their respective state agency activities. 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. Each agency's report is available on request from the URSB Secretary.

##### B. URSB and Working Group Initiatives Discussion

Mike Bear asked if there any changes that anyone wanted made to the spreadsheet. He also asked if there were any new initiatives that anyone wished to pursue that were not on the list. There were none.

##### C. URSB Approval of Comments on U.S. EPA Protective Action Guidelines Manual

No update at this time. This will be updated at the next meeting.

##### D. URSB Annual Report

This will be discussed at the next meeting. A first draft should be ready in early August and available for comment with a final draft ready for the next meeting in October. If you have any suggestions for the cover, please e-mail them to Mike Bear.

##### E. Streamlining of Power Plant Notification Process

This is an issue that came up during the last exercise. How quickly can we get this information to the Assessment Room and Executive Room? At the present time, we are approximately a half hour behind. There was a lot of confusion in the Toledo JIC during the exercise. Nancy is interested in the Kaizen process to help with the streamlining, and would like FENOC to be involved in these discussions.

##### F. Nuclear Regulatory Commission

Mr. Allan Barker of the Nuclear Regulatory Commission reported on the following topics: Oversight of the First Energy Nuclear Operating Company Plants, PNPP Dry Cask Storage of Spent Fuel, and Risk-Informed and Performance-Based Oversight. Mr. Barker's report is attached at the end of the Board-approved minutes.

##### G. Utility Reports

Lauren Worth reported on Social Media. First Energy has started incorporating social media as a whole. Twitter accounts have been set up for each of the three nuclear operating companies in the event of an emergency. They have a dedicated staff member in Akron who has the responsibility of tweeting on those accounts and keeping them up-to-date as well as news links being put on the website. Two external media reporting sources are also used.

Mr. Ricky Collings of the First Energy Nuclear Operating Company provided the utility report on the following topics: Beaver Valley Power Station Unusual Event of June 14, 2013, Davis-Besse May 14, 2013 Evaluated Exercise Result, Steam Generator Replacement project - DBNPS vs. San Onofre, Status of MIDAS Implementation, Perry Nuclear Power Plant Refueling Outage of March 18 – May 16, 2013, and Perry Nuclear Power Plant Shutdown of June 2013. Mr. Collings report is attached at the end of the Board-approved minutes.

## V. MISCELLANEOUS

### A. Questions from the Public

1. Pat Marida, Ohio Sierra Club: Stated that it was the public understanding that the steam generators at Davis-Besse were supposed to undergo replacement by Southern California Edison. She was given the impression that it did not undergo a full review and this was how things got into trouble at San Onofre. She had questions about why this comparison is being done. Said there was one small change, but in a webinar that was given, several changes were mentioned. She was wondering if it would be prudent for FENOC to undergo a full review with a public hearing as to any changes that would be made in the steam generator. She was told that the replacement generators are the same as were put in originally.
2. Lee Blackburn, Ohio Sierra Club – Is there any concern about cutting into the containment building in order to replace the steam generators given that cracks have been found in the containment building? He was told that the cracks have been contained. Cutting is not done in the same place every time. The cracks were architectural and not structural. Post maintenance testing is done. The same criteria must be passed as in the initial testing.

## VI. ADJOURNMENT

Ms. Nancy Dragani, Ohio Emergency Management Agency, asked if there was a motion to adjourn the meeting. Mr. Chuck Kirchner, Ohio Department of Agriculture, made a motion to adjourn and Mr. Kevin Clouse, Ohio Environmental Agency, seconded the motion. The meeting was adjourned.

# NRC Report to the Board

Good Afternoon -----

I will update the board on the NRC oversight activities at Davis-Besse, Perry and Beaver Valley.

In addition, I will summarize the inspection oversight of Perry's Dry Cask Storage and the study on RERP oversight in terms of the potential to risk inform and performance base regulations.

## Davis-Besse Nuclear Power Plant

On April 22, 2013, the first quarter integrated inspection report for Davis-Besse was issued. Based on the results of this inspection, one NRC-identified finding and one self-revealed finding of very low safety significance (Green) were identified. The findings are as follows:

- The inspectors identified that the licensee failed to maintain normally energized medium voltage cables in an environment consistent with the cable design. The cables, which are output cables for the station blackout diesel generator (SBODG) were not designed for long-term water submergence, and were in an electrical manhole that was flooded for a period of several months, perhaps as long as a year or more. The licensee's procedures and programs for medium voltage cables did recognize the issue and provided a sump pump to address water intrusion into the electrical manhole, but did not provide for any preventative maintenance or operational checks of the sump pump. The inspectors determined that the finding was of very low safety significance because it was not a deficiency affecting the design or qualification of the SBODG and there was no loss of any system or function due to the flooded conditions of the cables. The finding was determined to have a cross-cutting aspect in the area of human performance, work control, because the licensee failed to schedule and coordinate the appropriate preventive maintenance for the pump.
- A self-revealed finding was identified for the licensee's failure to properly implement the procedure for the Hydrogen Dilution System Train 1 quarterly surveillance test. Specifically, a non-licensed operator inadvertently repositioned the incorrect motor-operated valve and caused an unplanned entry into Technical Specifications (TS) for an inoperable component cooling water containment isolation valve. Upon identification, the valve was tested and returned to operable status within the TS allowable time. This finding had a cross-cutting aspect in the area of human performance, work practices, because personnel failed to use human error prevention techniques to ensure that work was performed safely.

On February 15, 2013, the NRC completed an inspection which covered the interim cyber security Milestones 1 – 7 of the NRC security cornerstone. The inspection examined activities conducted under your license as they relate to cyber security through implementation of the licensee's cyber security plan which has NRC approval.

Five NRC-identified findings of very low security significance (Green) were identified during this inspection. However, in accordance with the Security Issues Forum Charter, the NRC can

exercise enforcement discretion during inspection of the interim cyber security measures for licensees who demonstrate a “good-faith interpretation and attempt to implement” Milestones 1 – 7.

## **Perry Nuclear Power Plant**

On June 28, 2013, the NRC completed the supplemental 95002 inspection at Perry. The results of the inspection are currently pre-decisional, and are in Region III management review. The inspection report will be issued publically 45 days from the completion date. Perry will be notified by the NRC of Perry’s location in the NRC’s ROP Action Matrix as a result of the 95002 inspection.

On May 10, 2013, the first quarter integrated inspection report for Perry was issued. There were four self-revealed findings of very low safety significance (Green) that were identified. The findings are as follows:

- A self-revealed finding for the licensee’s failure to implement recommended preventive maintenance on a balance-of-plant (BOP) inverter and static transfer switch. Specifically, the licensee failed to implement vendor-recommended preventive maintenance requirements to replace circuit cards in both a BOP inverter and an associated static transfer switch every twelve and ten years, respectively. The finding has a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action program. The licensee had previously identified the reliability of the BOP inverter and static transfer switch as the cause for previous feedwater-related events but failed to implement recommended corrective actions to prevent future events.
- A self-revealed finding for the licensee’s failure to establish and maintain a correct surveillance inspection procedure for high-pressure core spray (HPCS) emergency core cooling systems integrated testing. The surveillance procedure used for the HPCS, safety-related electrical bus, EH13, testing during refueling outage 14, directly resulted in an unplanned outage of the bus for nearly 4 hours. The finding has a cross-cutting aspect in the area of human performance, work control, in that, the development of a new surveillance procedure did not correctly predict the plant response for the safety-related system test lineup and resulted in an unplanned loss of the EH13 safety-related electric bus.
- A self-revealed finding was identified for the licensee’s failure to correctly implement a surveillance procedure for calibration of a scram discharge volume (SDV) level detector. Specifically, licensee technicians failed to open and lock open, with independent verification, the lower isolation valve to an SDV level detector. The finding has a cross-cutting aspect in the area of human performance, work practices, in that the independent verifier found the valve in an unexpected condition with a locking device already installed, did not stop the process and question the valve position, but proceeded in the face of uncertainty.
- A self-revealed finding was identified when the licensee failed to correctly implement prerequisite steps in a surveillance instruction, causing the standby liquid control (SLC) pump 'A' plunger pot drain valves to be left open, contrary to procedure. The finding has a cross-cutting aspect in the area of human performance, work practices, in that licensee personnel failed to use human error prevention techniques, such as holding a pre-job

briefing, self and peer checking, and proper documentation of activities.

The NRC issued preliminary notification, PNO-III-13-005 on June 18, 2013, for an unplanned shutdown of Perry due to a pressure boundary leak. On June 16, 2013 at 0200 hours, Perry commenced a controlled plant shutdown. Perry reduced power to around 8 percent on Friday, June 14, 2013, to make a drywell entry and investigate an increasing drywell leakage trend. The leak was identified on June 15, 2013 at 2250 hours, when steam was observed coming from a three-quarter inch vent line off the top of the 'B' Reactor Recirculation Flow Control Valve. The licensee evaluated the leak rate as approximately 0.3 gpm and it appeared to be coming from a weld flaw on the inlet to the inboard vent valve. The leak was subsequently determined to require a Technical Specification plant shutdown.

## **BEAVER VALLEY**

On May 9, 2013, the first quarter integrated inspection report for Beaver Valley Units 1 and 2 was issued. Based on the results of this inspection, one NRC-identified finding of very low safety significance (Green) was identified. The finding is as follows:

- The inspectors identified a non-cited violation of 10 CFR 50.65(a) (4) "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," because FENOC did not implement risk management actions to manage the risk associated with the performance of preventive maintenance on the Unit 2 23A motor-driven auxiliary feedwater pump. Specifically, FENOC did not post the 23B motor-driven and turbine-driven auxiliary feedwater pumps as protected equipment in the field as required by procedure. This finding has a cross-cutting aspect in the human performance area, work practices, because FENOC not did follow their risk management procedures during preventive maintenance.

# First Energy Report to the Board

## 1) Beaver Valley Power Station

### a) June 14, 2013 Unusual Event

On June 14, 2013 Beaver Valley Unit 2 declared an Unusual Event under Emergency Action Level (EAL) HU5.1. "Release of toxic, corrosive, asphyxiant or flammable gases in amounts that have or could adversely affect NORMAL PLANT OPERATIONS" due to a carbon dioxide (CO<sub>2</sub>) discharge from a fire suppression system into the turbine building. This condition required evacuation of the turbine building which "could" have adversely affected NORMAL PLANT OPERATIONS therefore an emergency classification was appropriate. The site fire brigade responded, verified no fire existed, no personnel were in the area, verified that there were no injuries, and ensured that the area was clear of CO<sub>2</sub>. Normal access to the turbine building was restored at 0851. No adverse operating conditions actually resulted from the CO<sub>2</sub> discharge. All appropriate notifications were made to offsite response organizations. The Unusual Event was terminated at 0955 hours.

A rigorous investigation was conducted and it was determined that electrical terminations for a Heat Activated Device (HAD) were not properly insulated, resulting in a ground which actuated the CO<sub>2</sub> fire protection system. The HAD was recently disassembled and reassembled during the Unit 2 Main Unit Generator work that occurred during the recent forced outage. Corrective actions for several on-site organizations were implemented to prevent any similar issue from reoccurring.

### b) Emergency Response Section Manager

Mr. Steve Sawtschenko became the Emergency Response Manager on On June 17, 2013. Mr. Sawtschenko joins us from the Palo Verde Nuclear Station in Arizona. He was the Emergency Preparedness manager for the past five years.



Mr. Sawtschenko served in the nuclear navy and has 26 years of experience in the commercial nuclear power industry. Mr. Sawtschenko has held management positions in Radiation Protection, Telecommunications, Information Technology, and has an MBA from Arizona State University. He is recognized as an industry leader in emergency preparedness serving as a lead for the Nuclear Energy Institute Regulatory Issues Task force. We are glad to have Steve join our team and lead Beaver Valley through the many enhancements underway in emergency preparedness.

## 2) Davis-Besse Nuclear Power Station

### a) May 14, 2013 Evaluated Exercise Results

The Davis-Besse biennial Evaluated Exercise involved hundreds of Players from Davis-Besse; Ottawa, Lucas and Sandusky counties; the state of Ohio; and the Nuclear Regulatory Commission. Evaluators from various state and local agencies, the utility, NRC and FEMA concluded that the May 14th Evaluated Exercise was successfully conducted.

- Davis-Besse selected 52 objectives for demonstration, 49 were successfully demonstrated.
- There were 8 Drill/Exercise NRC Performance Indicator opportunities, 6 were successful performed.
- Credit was given for 2 additional drill objectives that were demonstrated.
- The NRC Inspectors did not identify any findings or violations.
- During the NRC exit the exercise scenario was characterized as challenging and the associated critiques as detailed, thorough, to the point and self critical.
- The new Lindsey Emergency Operations Facility, EOF was considered a strength.
- Improvement opportunities were entered into the corrective action program.

### b) Steam Generator Replacement Project: DBNPS vs. San Onofre

#### Background:

Both San Onofre Nuclear Units have been shut down since January 2012. Unit 2 was taken out of service for a planned routine outage. Unit 3 was taken offline after station operators detected a primary to secondary leak in a tube inside the Steam Generator. The plant had operated for less than one cycle following the replacement of Steam Generators. The Steam Generators were manufactured by Mitsubishi Heavy Industries.

#### Cause of Tube Leak:

The physical cause of the tube leak was that the tubes and their support structures experienced flow-induced-vibration (FIV) at a magnitude that resulted in them rubbing against each other, causing wear-induced tube wall thinning. In addition to steam cross-flow, the boiling that occurs in the upper/center of the U-bend region imposes significant and non-uniform forces on the tubes, effectively “shaking” them.

The excessive vibration in the San Onofre Steam Generators resulted from a combination of design deficiencies and analytical weaknesses. The San Onofre Replacement Steam Generators incorporated significant design changes relative to the original Steam Generators. Some of those design changes were to support a power up-rate of San Onofre Unit 3. These changes gave the Replacement Steam Generators a different physical configuration and created different operating conditions than had existed in the original Steam Generators. It has been determined that the San Onofre Unit 2 Replacement Steam Generators have also experienced damaging tube vibration, but at a lesser magnitude.

#### Evaluation:

The San Onofre event was evaluated for applicability to Davis-Besse. The evaluation concluded that tube-to-tube wear, as occurred at San Onofre, cannot occur in a Once-Through Steam Generator (Davis-Besse Design) due to the differences in design of the tube bundle and its support structure.

#### Supporting Details:

There are significant differences between the San Onofre Steam Generators and the Davis-Besse Replacement Once Through Steam Generators (ROTSGs) in the design/configuration of the tube bundle and its supports and in the cross-flow conditions that exist. Significant contributors to the severity of the problem at San Onofre were that:

- The Replacement Steam Generators tube support structure was a different design
- The operating conditions were different than existed in their original Steam Generators (due in part to a power up-rate project)
- Faulty analytical techniques failed to identify the weakness in the design and/or the impact of the changed operating conditions

The tube support structure for DB's ROTSG is essentially the same as in the original OTSGs. The only significant difference is that the unsupported tube span length is shorter in the ROTSGs than it was in the OTSGs. This shorter span length reduces the vulnerability to flow induced vibration.

The configuration and the operating conditions for DB's ROTSGs are bounded by existing industry experience. The first replacement Once Through Steam Generators were provided to the Oconee plant by B&W Canada did experience some minor flow induced vibration tube wear.

This was a result of changes to manufacturing techniques that provided better tube support plate alignment than was found in the original steam generators.

This improved alignment allowed the tubes to “float” within the tube support plate holes so the tubes were not firmly anchored in the tube support plates like the originals.

Based upon the lessons learned Babcock & Wilcox Canada, in conjunction with Davis-Besse, has resolved this issue for the Davis-Besse ROTSGs by installing offset tube support plates. These tube support plates will duplicate the performance of the original tube support plates.

c) Status of MIDAS Implementation

The program is complete and tested. Training of the staff is on going with an expected completion date of early August. Any missing scheduled training will be caught in one final session the second week of August. The procedure is complete, the 10 CFR 50.54(q) is in draft and ready to go effective when the site begins using the program on August 30th. Final testing of live plant as well as simulator data transfer from e-Data is needed to ensure the automatic loading of data into MIDAS works as designed. The testing is being performed concurrent with the training and will be completed in mid-July.

3) Perry Nuclear Power Plant

a) Outage Summary Refueling Outage 14 (March 18, 2013 to May 16, 2013)

The Refueling Outage consisted of: 13,478 Work Activities / 2,028 Work Orders / 826 Preventive Maintenance Orders / 714 Surveillances / 187 In-Service Inspection Exams of Reactor Pressure Vessel system components

Major Work Scope contributing to the outage equation and designed to improve plant reliability for the upcoming operating cycles were:

- Replaced Main Turbine Low Pressure Turbine Rotors
- Replaced 15 Control Rod Blades
- Replaced 20 Control Rod Drive Mechanisms
- Rebuilt 45 Control Rod Hydraulic Control Units
- Replaced 2 Drywell Cooling Fans
- Replaced 4 Pistons and Cylinder Liners in Division 1 Emergency Diesel Generator
- Replaced Recirculation Pump B Seal and Seal Cooler
- Completed Alternate Decay Heat Removal Functional Testing
- Completed Circulating Water Fiberglass Pipe Inspection
- Installed Low Power Hydrogen Water Coolant Injection
- Completed Division 3 Emergency Diesel Generator Head replacements
- Replaced 7 Safety Relief Valves
- Identified and Removed 1 Leaking Fuel Bundle

#### b) June 2013 Plant Shutdown

On Friday, June 14, a planned power reduction was performed to identify and resolve a Drywell leakage condition. Power was lowered to 8% of rated conditions by Saturday, June 15. The drywell was entered at this power level to identify the cause of the leakage. Drywell entries performed on Saturday confirmed that the leakage was coming from two sources. The Unit was removed from service on Saturday, June 15 at 0403 and reached Cold Shutdown conditions on Sunday, June 16 at 1358 hours.

The first source of leakage was from a vent valve connection on top of the “B” Reactor Recirculation System Flow Control Valve. The leak was characterized as an approximate 1” cracked weld by visual examination and was seen as a small steam plume while the Unit was pressurized. This type of leakage is not permitted and was reported to the NRC under a required eight hour report on Sunday, June 16 at 0242. This connection was removed from the top of the “B” Flow Control Valve bonnet. A newly fabricated vent valve assembly was welded in place and inspected satisfactorily. The subsequent extent of condition review did not reveal any problems at seven other similar locations.

The second source of leakage was coming from a Control Rod Drive Mechanism. A small piece of wire was found wedged between the Control Rod Drive Mechanism and the bottom Reactor Vessel flange face. This resulted in a failed ‘O’ ring and compromised the spacer plate for this component. All effected components for this Control Rod Drive Mechanism were replaced. On Friday, June 21st, at 1829 the Main Generator was synchronized, ending the planned outage which resolved the Drywell unidentified leakage rate.

#### 4) FENOC

##### a) Status of Small Modular Reactors in Ohio – Greg Halnon, Director, Fleet Regulatory Affairs

Report out shifted to the October 7<sup>th</sup> meeting.

##### b) FENOC Social Media Usage and Central Joint Information Center – Lauren Wort

###### i) Social Media

FENOC actively began pursuing a social media process in early 2012 and now maintains active Twitter accounts for each of the nuclear plants.

@BVPowerStation, @DavisBesse, and @Perry\_Plant. The objective of the Twitter accounts on a daily basis is to use it as a platform to provide strategic messaging that promotes safe operation, community involvement, awards, and general nuclear education. The Twitter accounts are not used to debate in public opinion on an issue. Currently, FENOC does not use Facebook for plant communications and does not have any plans to begin using that platform.

In addition to the use of Twitter FirstEnergy Corporate Communications uses a social media and traditional media monitoring service to monitor any mention of information related to the company. The FirstEnergy social media team in conjunction with the Manager of Corporate Communications would be engaged in actively monitoring these reports in the event of a nuclear emergency. Currently the social media team is located within FirstEnergy Corporate Communications is Akron, Ohio and do not physically report to the Joint Information Center or any emergency response facility. Upon the completion of the central JIC the Manger Corporate Communications and the social media team will report to the JIC location.

ii) Central JIC

FENOC is currently pursuing the establishment of a Central Joint Information Center that will support the three FENOC nuclear power plants in the event of a nuclear emergency. The facility will be located in Akron, Ohio and will be staffed by Akron FENOC employees and FirstEnergy Corporate Communications staff. The Central JIC will accommodate members of the media and will have enhanced technology that will allow for video streaming and virtual media briefings. In addition to the Central JIC location we will also have Satellite JIC locations close to the risk counties and state EOC; enabling our off-site partners to virtually participate in media briefings while remaining close to their EOC's. The Central JIC is currently scheduled for construction in early 2014 and training and validation in later half of 2014