UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

February 8, 2016

Mr. Brian D. Boles
Site Vice President
FirstEnergy Nuclear Operating
Company
c/o Davis-Besse NPS
5501 N. State Route 2
Oak Harbor, OH 43449-9760

SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION, UNIT 1 - REPORT FOR THE AUDIT REGARDING IMPLEMENTATION OF MITIGATING STRATEGIES AND RELIABLE SPENT FUEL POOL INSTRUMENTATION RELATED TO ORDERS EA-12-049 AND EA-12-051 (CAC NOS. MF0960 AND MF0961)

Dear Mr. Boles:

On March 12, 2012, the U.S. Nuclear Regulatory Commission (NRC) issued Order EA-12-049, "Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond Design-Basis External Events," and Order EA-12-051, "Issuance of Order to Modify Licenses With Regard To Reliable Spent Fuel Pool Instrumentation" (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML12054A736 and ML12054A679, respectively). The orders require holders of operating reactor licenses and construction permits issued under Title 10 of the *Code of Federal Regulations* Part 50 to submit for review Overall Integrated Plans (OIPs), including descriptions of how compliance with the requirements of Attachment 2 of each order will be achieved.

By letter dated February 27, 2013 (ADAMS Accession No. ML13064A245), FirstEnergy Nuclear Operating Company (FENOC, the licensee), submitted its OIP for Davis-Besse Nuclear Power Station (DBNPS), Unit 1, in response to Order EA-12-049. By letters dated August 26, 2013, February 27, 2014, August 28, 2014, February 26, 2015 and August 27, 2015 (ADAMS Accession Nos. ML13238A260, ML14058A666, ML14240A285, ML15057A398 and ML15239A290, respectively), FENOC submitted its first five six-month updates to the OIP. By letter dated August 28, 2013 (ADAMS Accession No. ML13234A503), the NRC notified all licensees and construction permit holders that the staff is conducting audits of their responses to Order EA-12-049 in accordance with NRC Office of Nuclear Reactor Regulation (NRR) Office Instruction LIC-111, "Regulatory Audits" (ADAMS Accession No. ML082900195). This audit process led to the issuance of the DBNPS interim staff evaluation (ISE) dated February 21, 2014 (ADAMS Accession No. ML14007A670), and continues with in-office and onsite portions of this audit.

By letter dated February 27, 2013 (ADAMS Accession No. ML13059A495), the licensee submitted its OIP for DBNPS, in response to Order EA-12-051. By letter dated July 17, 2013, (ADAMS Accession Nos. ML13197A381), the NRC staff sent a request for additional information (RAI) to the licensee. By letters dated August 26, 2013, February 27, 2014, August 28, 2014, February 26, 2015, and August 18, 2015 (ADAMS Accession Nos. ML13238A259, ML14058A665, ML14240A230, ML15057A396 and ML15230A202,

respectively), the licensee submitted its first five six-month updates to the OIP, including its RAI responses. The NRC staff's review to date led to the issuance of the DBNPS ISE and additional RAIs dated December 11, 2013 (ADAMS Accession No. ML13340A130). By letter dated March 26, 2014 (ADAMS Accession No. ML14083A620), the NRC notified all licensees and construction permit holders that the staff is conducting in-office and onsite audits of their responses to Order EA-12-051 in accordance with NRC NRR Office Instruction LIC-111, as discussed above.

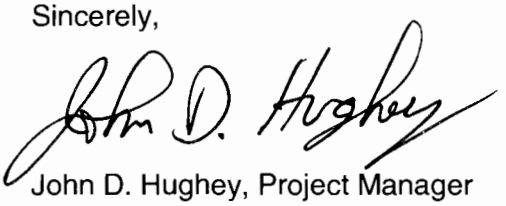
The ongoing audits allow the staff to review open and confirmatory items from the mitigation strategies ISE, RAI responses from the spent fuel pool instrumentation (SFPI) ISE, the licensee's integrated plans, and other audit questions. Additionally, the staff gains a better understanding of submitted and updated information, audit information provided on ePortals, and preliminary Overall Program Documents/Final Integrated Plans, while identifying additional information necessary for the licensee to supplement its plan and staff potential concerns.

In support of the ongoing audit of the licensee's OIPs, as supplemented, the NRC staff conducted an onsite audit at DBNPS from November 16 - 19, 2015, per the audit plan dated October 14, 2015 (ADAMS Accession No. ML15286A294). The purpose of the onsite portion of the audit was to provide the NRC staff the opportunity to continue the audit review and gain key insights most easily obtained at the plant as to whether the licensee is on the correct path for compliance with the Mitigation Strategies and SFPI orders. The onsite activities included detailed analysis and calculation discussions, walk-throughs of strategies and equipment laydown, visualization of portable equipment storage and deployment, review of staging and deployment of offsite equipment, and review of installation details for SFPI equipment.

The enclosed audit report provides a summary of the activities for the onsite audit portion. Additionally, this report contains an attachment listing all open audit items currently under NRC staff review.

If you have any questions, please contact me at 301-415-3204 or by e-mail at John.Hughey@nrc.gov.

Sincerely,



John D. Hughey, Project Manager
Orders Management Branch
Japan Lessons-Learned Division
Office of Nuclear Reactor Regulation

Docket No.: 50-346

Enclosure:
Audit report

cc w/encl: Distribution via Listserv

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

AUDIT REPORT BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO ORDERS EA-12-049 AND EA-12-051 MODIFYING LICENSES

WITH REGARD TO REQUIREMENTS FOR

MITIGATION STRATEGIES FOR BEYOND-DESIGN-BASIS EXTERNAL EVENTS

AND RELIABLE SPENT FUEL POOL INSTRUMENTATION

FIRSTENERGY NUCLEAR OPERATING COMPANY

DAVIS-BESSE NUCLEAR POWER STATION, UNIT 1

DOCKET NO. 50-346

BACKGROUND AND AUDIT BASIS

On March 12, 2012, the U.S. Nuclear Regulatory Commission (NRC) issued Order EA-12-049, "Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond Design-Basis External Events," and Order EA-12-051, "Issuance of Order to Modify Licenses With Regard To Reliable Spent Fuel Pool Instrumentation" (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML12054A736 and ML12054A679, respectively). Order EA-12-049 directs licensees to develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool (SFP) cooling capabilities in the event of a beyond-design-basis external event (BDBEE). Order EA-12-051 requires, in part, that all operating reactor sites have a reliable means of remotely monitoring wide-range SFP levels to support effective prioritization of event mitigation and recovery actions in the event of a BDBEE. The orders require holders of operating reactor licenses and construction permits issued under Title 10 of the *Code of Federal Regulations* Part 50 to submit for review Overall Integrated Plans (OIPs), including descriptions of how compliance with the requirements of Attachment 2 of each order will be achieved.

By letter dated February 27, 2013 (ADAMS Accession No. ML13064A245), FirstEnergy Nuclear Operating Company (FENOC, the licensee) submitted its OIP for Davis-Besse Nuclear Power Station (DBNPS), Unit 1, in response to Order EA-12-049. By letters dated August 26, 2013, February 27, 2014, August 28, 2014, February 26, 2015, and August 27, 2015 (ADAMS Accession Nos. ML13238A260, ML14058A666, ML14240A285, ML15057A398 and ML15239A290, respectively), FENOC submitted its first five six-month updates to the OIP. By letter dated August 28, 2013 (ADAMS Accession No. ML13234A503), the NRC notified all

licensees and construction permit holders that the staff is conducting audits of their responses to Order EA-12-049 in accordance with NRC Office of Nuclear Reactor Regulation (NRR) Office Instruction LIC-111, "Regulatory Audits" (ADAMS Accession No. ML082900195). This audit process led to the issuance of the DBNPS interim staff evaluation (ISE) (ADAMS Accession No. ML14007A670) and continues with in-office and onsite portions of this audit.

By letter dated February 27, 2013 (ADAMS Accession No. ML13059A495), the licensee submitted its OIP for DBNPS in response to Order EA-12-051. By letter dated July 17, 2013, (ADAMS Accession Nos. ML13197A381), the NRC staff sent a request for additional information (RAI) to the licensee. By letters dated August 26, 2013, February 27, 2014, August 28, 2014, February 26, 2015, and August 18, 2015 (ADAMS Accession Nos. ML13238A259, ML14058A665, ML14240A230, ML15057A396 and ML15230A202, respectively), the licensee submitted its first five six-month updates to the OIP, including its RAI responses. The NRC staff's review to date led to the issuance of the DBNPS ISE and additional RAIs dated December 11, 2013 (ADAMS Accession No. ML13340A130). By letter dated March 26, 2014 (ADAMS Accession No. ML14083A620), the NRC notified all licensees and construction permit holders that the staff is conducting in-office and onsite audits of their responses to Order EA-12-051 in accordance with NRC NRR Office Instruction LIC-111, as discussed above.

The ongoing audits allow the staff to review open and confirmatory items from the mitigation strategies ISE, RAI responses from the spent fuel pool instrumentation (SFPI) ISE, the licensee's integrated plans, and other audit questions. Additionally, the staff gains a better understanding of submitted and updated information, audit information provided on ePortals, and preliminary Overall Program Documents (OPDs)/Final Integrated Plans (FIPs), while identifying additional information necessary for the licensee to supplement its plan and address staff potential concerns.

In support of the ongoing audit of the licensee's OIPs, as supplemented, the NRC staff conducted an onsite audit at DBNPS from November 16 - 19, 2015, per the audit plan dated October 14, 2015 (ADAMS Accession No. ML15286A294). The purpose of the onsite portion of the audit was to provide the NRC staff the opportunity to continue the audit review and gain key insights most easily obtained at the plant as to whether the licensee is on the correct path for compliance with the Mitigation Strategies and SFPI orders. The onsite activities included detailed analysis and calculation discussion, walk-throughs of strategies and equipment laydown, visualization of portable equipment storage and deployment, review of staging and deployment of offsite equipment, and review of installation details for SFPI equipment. The audit's onsite portion is intended to occur prior to declarations of compliance for the first unit at each site.

Following the licensee's declarations of order compliance, the NRC staff will evaluate the OIPs, as supplemented; the resulting site-specific OPDs/FIPs; and, as appropriate, other licensee submittals based on the requirements in the orders. For Order EA-12-049, the staff will make a safety determination using the Nuclear Energy Institute (NEI) developed guidance document NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," issued in August 2012 (ADAMS Accession No. ML12242A378), as endorsed by NRC Japan Lessons-Learned Directorate (JLD) interim staff guidance (ISG) JLD-ISG-2012-01, "Compliance with Order EA-12-049, 'Order Modifying Licenses with Regard to Requirements for Mitigation

Strategies for Beyond-Design-Basis External Events'" (ADAMS Accession No. ML12229A174). For Order EA-12-051, the staff will make a safety determination using the NEI developed guidance document NEI 12-02, Revision 1, "Industry Guidance for Compliance with NRC Order EA-12-051, 'To Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation'" (ADAMS Accession No. ML12240A307), as endorsed, with exceptions and clarifications, by NRC ISG JLD-ISG-2012-03, "Compliance with Order EA-12-051, 'Reliable Spent Fuel Pool Instrumentation'" (ADAMS Accession No. ML12221A339), as providing one acceptable means of meeting the order requirements. Should the licensee propose an alternative strategy for compliance, additional staff review will be required to evaluate the alternative strategy in reference to the applicable order.

AUDIT ACTIVITIES

The onsite audit was conducted at the DBNPS facility from November 16, 2015, through November 19, 2015. The NRC audit team staff was as follows:

Title	Team Member	Organization
Team Lead/Project Manager	John Hughey	NRR/JLD
Technical Support – Electrical	Kirby Scales	NRR/JLD
Technical Support – Reactor Systems	Joshua Miller	NRR/JLD
Technical Support – Balance of Plant	Garry Armstrong	NRR/JLD
Technical Support – Containment / Ventilation	Bruce Heida	NRR/JLD
Technical Support – SFPI	Duc Nguyen	NRR/JLD
NRC Contractor Support	John Bowen	Mega-Tech
Region III Observer	Nicholas Valos	Region III/SRA

The NRC staff executed the onsite portion of the audit per the three part approach discussed in the October 14, 2015, plan, to include conducting a tabletop discussion of the site's integrated mitigating strategies compliance program, a review of specific technical review items, and discussion of specific program topics. Activities that were planned to support the above included detailed analysis and calculation discussions, walk-throughs of strategies and equipment laydown, visualization of portable equipment storage and deployment, staging and deployment of offsite equipment, and physical sizing and placement of SFPI equipment.

AUDIT SUMMARY

1.0 Entrance Meeting (November 16, 2015)

At the onsite audit entrance meeting, the NRC staff audit team introduced itself followed by introductions from the licensee's staff. The NRC audit team provided a brief overview of the audit's objectives and anticipated schedule.

2.0 Integrated Mitigating Strategies Compliance Program Overview

Per the audit plan and as an introduction to the site's program, the licensee provided a presentation to the NRC audit team describing the site's strategies to meet the NRC orders. The licensee presented a review of its strategy to maintain core cooling, containment, and SFP cooling in the event of a BDBEE, and the plant modifications being done in order to implement the strategies. Also reviewed were the design and location of the storage facilities for the FLEX equipment, the interface with the National SAFER [Strategic Alliance for FLEX Emergency Response] Response Centers (NSRCs), and the SFPI modification.

3.0 Onsite Audit Technical Discussion Topics

Based on the audit plan, and with a particular emphasis on the Part 2, "Specific Technical Review Items," the NRC staff technical reviewers conducted interviews with licensee technical staff, site walk-downs, and detailed document review for the items listed in the plan. Results of these technical reviews and any additional review items needed from the licensee are documented in the audit item status table in Attachment 3, as discussed in the Conclusion Section below.

3.1 Reactor Systems Technical Discussions and Walk-Downs

The NRC staff met with licensee staff to discuss the amount of leakage from the reactor coolant pump seals and the timing of the injection of borated water into the reactor coolant system (RCS), and the availability of water sources. The NRC staff reviewed the analyses and flow calculations along with applicable procedures, including the plant parameters that will be monitored to indicate the potential for reactor core damage. The NRC staff also walked down the licensee's strategies and reviewed plant procedures for implementing the core cooling and makeup strategies. The NRC staff also reviewed DBNPS modeling of an extended loss of alternating current power (ELAP) event and its ability to mitigate the event, including the computer code used for the ELAP analysis and input parameters assumed to generate the results of the analysis.

3.2 Electrical Technical Discussions and Walk-Downs

The NRC staff reviewed the calculations regarding battery life and FLEX generating sizing in addition to walking down the procedure steps for electrical load shedding. The NRC staff also walked down the main control room, low voltage switchgear rooms, high voltage switchgear rooms, battery rooms, and SFP area to evaluate strategies for hydrogen control and temperature control due to heat generating electrical equipment. The NRC staff reviewed the isolation and interactions of electrical power sources regarding the protection of Class 1E equipment from faults in portable FLEX equipment and the design elements that ensure multiple electrical sources do not attempt to simultaneously power electrical buses. The NRC staff also walked down panels used for load shedding to evaluate feasibility and timing. Lastly, the NRC staff conducted a walk-through of portable FLEX diesel generator (DG) procedures, to include power pathways, areas where manual actions are required, and electrical isolation.

3.3 SFPI Technical Discussions and Walk-Downs

The NRC staff walked down instrument, transmitter, electronics, and display locations for the SFP level instrumentation, along with the associated cable runs. In addition, the NRC staff noted that the licensee had completed design calculations and drawings detailing the installation of the SFPI components, as well as the associated calibration, maintenance, and test procedures.

3.4 FLEX Equipment Storage Configuration Discussion Areas and Walk-Downs

The DBNPS FLEX storage configuration stores the N set of FLEX equipment, with the exception of the FLEX vehicles and debris removal equipment, in structures that protect it from all applicable BDBEE hazards. DBNPS is constructing an Emergency Feedwater (EFW) Facility that is robust from all BDBEE hazards and is designed with storage for the Phase 2, N set of FLEX equipment. Additional N FLEX equipment will be stored in the seismic Class 1 Auxiliary Building. DBNPS will store the N+1 set of FLEX equipment in Service Building 7 (SB-7), which is a commercial grade building that is not protected from all BDBEE hazards.

The N FLEX vehicle with debris removal equipment is stored in an outside location where it is protected from all BDBEE hazards, with the exception of tornado winds and missiles. The outside storage location is located such that the N vehicle will be protected from extreme temperatures, flooding, and seismic interactions. Block heaters will be utilized for protection from extreme low temperatures. The N+1 FLEX vehicle and debris removal equipment is stored in SB-7, which serves as a diverse location from the N vehicle storage location to provide reasonable protection from BDBEE tornado winds and missiles. Therefore, at least one set of the FLEX vehicle and debris removal equipment is protected from all BDBEE hazards.

In NEI 12-06, Rev. 0, Section 11.3.3 states the following:

> FLEX mitigation equipment should be stored in a location or locations informed by evaluations performed per Sections 5 through 9 such that no one external event can reasonably fail the site FLEX capability (N).

In NEI 12-06, Rev. 0, Section 10.1, "Aggregation of FLEX Strategies," includes the following:

> Provision of at least N+1 sets of portable on-site equipment stored in diverse locations or in structures designed to reasonably protect from applicable BDBEEs is essential to provide reasonable assurance that N sets of FLEX equipment will remain deployable to assure success of the FLEX strategies.

Per the guidance above, it is essential to reasonably protect N+1 sets of FLEX equipment from all applicable BDBEEs to reasonably assure that N sets (FLEX capability, per Section 11.3.3) will remain deployable after the BDBEE.

The DBNPS commercial warehouse (SB-7) does not protect the +1 set of FLEX equipment from all BDBEE hazards. Therefore, the DBNPS FLEX equipment storage configuration does not meet the guidance contained in NEI 12-06, Rev. 0, Section 10.1, in that it only affords reasonable protection from all applicable BDBEEs for N sets of FLEX equipment, not N+1 sets, as stipulated in the NEI guidance, as described above.

The NRC staff further identified that the DBNPS FLEX storage configuration would not support the maintenance and testing provisions contained in Section 11.5.3 of NEI 12- 06, Rev. 0. Specifically, Section 11.5.3.b states:

> Portable equipment may be unavailable for 90 days provided that the site FLEX capability (N) is available.

Should an item of FLEX equipment be made unavailable in the protected storage locations, the site FLEX capability (N) would no longer be available to mitigate all BDBEE hazards. The corresponding +1 item of FLEX equipment is not considered to be reasonably protected, and therefore, is not reasonably assured to be available or remain deployable to assure success of the FLEX strategies. The remaining available and deployable FLEX equipment, reasonably protected in the protected locations, would be less than the site FLEX capability (N). Therefore, the DBNPS FLEX equipment storage configuration would not meet the condition included in NEI 12-06, Rev. 0, Section 11.5.3.b (site Flex capability (N) is available) stipulated for the allowance of the 90-day portable equipment unavailability.

During the onsite audit, the licensee acknowledged that the DBNPS FLEX storage configuration is an alternative to the guidance in NEI 12-06, Rev. 0, that will be documented as such in the FIP. The licensee will also justify a reduced FLEX equipment allowed outage time in the FIP, commensurate with the alternative.

3.5 Other Technical Discussion Areas and Walk-Downs

a. The NRC staff reviewed the licensee's plans to ensure adequate communications, lighting, personnel access, and equipment access, to successfully implement the strategies. The staff interviewed plant personnel responsible for these areas, and observed lighting and communication needs during plant walkdowns.

b. The NRC staff reviewed Revision 1 of the DBNPS SAFER Response Plan, dated September 8, 2015. The response plan identified equipment staging areas, as well as off-site transportation methods and primary and alternate travel routes. The response plan also provides direction for utilizing helicopters for delivering equipment and material to the site.

c. The NRC staff walked down the FLEX strategies for core cooling, RCS inventory, and SFP cooling functions. This included the point of deployment for the portable FLEX pumps, hose routing, and deployment connection points (primary and alternate). The NRC staff also identified that the licensee had performed hydraulic analyses to evaluate pump sizing and location relative to the water flow necessary to perform the associated functions.

d. The NRC staff reviewed the strategy that will be implemented by the licensee to refuel the portable diesel-powered FLEX equipment and ensure adequate fuel quality. The NRC staff reviewed the instructions for refueling the equipment, as well as the equipment needed to perform the refueling.

e. The NRC staff identified that the development of the FLEX maintenance and testing program is in progress. The program includes consideration of shelf life and acceptance criteria, manufacturer's recommendations and plant practices, as well as consideration of the Electric Power Research Institute preventative maintenance templates. The licensee issued corrective action item CR-2015-15725 in the DBNPS corrective action program to track development and completion of the FLEX maintenance and testing program. The associated audit item was closed to DBNPS corrective action item CR-2015-15725.

f. The NRC staff confirmed that the licensee had performed deployment path and debris removal evaluations to address the site capability to deploy FLEX equipment, within the plant Protected Area (PA), to mitigate the applicable BDBEEs. However, the licensee plans to have only one access point to the PA. The licensee is addressing the issue of a single PA entry point under condition report CR-2015-15761.

g. The NRC staff reviewed documentation regarding the implementation of FLEX-related training at DBNPS. A site training plan has been developed and is being implemented for supervisors, the Emergency Response Organization, Engineering, Operations, Maintenance, Chemistry, Radiation Protection, and Security organizations. The DBNPS simulator will be used for training and validation once simulator modifications are complete. Condition report CR-2015-09882 is tracking the development of continuing FLEX training.

4.0 Exit Meeting (November 19, 2015)

The NRC staff audit team conducted an exit meeting with licensee staff following the closure of onsite audit activities. The NRC staff highlighted items reviewed and noted that the results of the onsite audit trip will be documented in this report. The NRC staff also discussed the remaining open items with the licensee and information needed for closure. The open items are listed in Attachment 3 of this report.

CONCLUSION

The NRC staff completed all three parts of the October 14, 2015, onsite audit plan. Each audit item listed in Part 2 of the plan was reviewed by NRC staff members while on site. In addition to the list of NRC and licensee onsite audit staff participants in Attachment 1, Attachment 2 provides a list of documents reviewed during the onsite audit portion.

In support of the continuing audit process as the licensee proceeds towards orders compliance for this site, Attachment 3 provides the status of all open audit review items that the NRC staff is evaluating in anticipation of issuance of a combined safety evaluation (SE) for both the Mitigation Strategies (MS) and SFPI orders. The five sources for the audit items referenced below are as follows:

a. ISE Open Items (OIs) and Confirmatory Items (CIs)

b. Audit Questions (AQs)

c. Licensee-identified OIP OIs

d. SFPI RAIs

e. Additional SE needed information

The attachments provide audit information as follows:

a. Attachment 1: List of NRC staff and licensee staff audit participants

b. Attachment 2: List of documents reviewed during the onsite audit

c. Attachment 3: MS/SFPI SE Audit Items currently under NRC staff review (licensee input needed, as noted)

While this report notes the completion of the onsite portion of the audit per the audit plan dated October 14, 2015, the ongoing audit process continues, as per the letters dated August 28, 2013, and March 26, 2014, to all licensees and construction permit holders for both orders.

Additionally, while Attachment 3 provides a list of currently open items, the status and progress of the NRC staff's review may change based on licensee plan changes, resolution of generic issues, and other NRC staff concerns not previously documented. Changes in the NRC staff review will be communicated in the ongoing audit process.

Attachments:
1. NRC and Licensee Staff Onsite Audit Participants
2. Onsite Audit Documents Reviewed
3. MS/SFPI Audit Items currently under NRC staff review

Onsite Audit Participants

NRC Staff:

John Hughey	NRR/JLD/JOMB
Duc Nguyen	NRR/JLD/JERB
Kirby Scales	NRR/JLD/JERB
Garry Armstrong	NRR/JLD/JCBB

Joshua Miller	NRR/JLD/JCBB
John Bowen	NRC Contractor
Bruce Heida	NRR/JLD/JCBB
Nicholas Valos	Region III/SRA

DBNPS Staff:

Tracy St. Clair	Team Lead
Greg Michael	Engineering Analysis
Robert Corbet	Electrical
Jeff Carr	Operations
Frank Swanger	Engineering Analysis
Evan Knerr	Spent Fuel Pool
Peter Holland	Coordinator
Kathy Nevins	Fleet Regulatory Compliance
Vicki Wadsworth	DBNPS Regulatory Compliance
Gerry Wolf	DBNPS Regulatory Compliance Supervisor

Documents Reviewed

- DBNPS Calculation C-CSS-ICS-11A, "SQUG [Seismic Qualification Utility Group] Evaluation for ICS-11A [Atmospheric Vent Valve A]," Rev. 1, April 26, 2000.
- DBNPS Calculation C-CSS-ICS-11B, "SQUG Evaluation for ICS-11A [Atmospheric Vent Valve B]," Rev. 1, April 26, 2000.
- DBNPS Calculation C-NSA-060.05-018, "FLEX Mode 1 Containment Response Analysis Due to 10 gpm RCS Leak," Rev. 0, July 2, 2015.
- DBNPS Calculation C-ISE-028.01-002, "Analysis of the Low Voltage Switchgear Room Ventilation," Rev. 0, July 9, 1991.
- DBNPS Calculation C-ME-02.02-001, "Impact of Winter on Battery Room 429B Vent Fan Operation," Rev. 1, May 15, 1995.
- DBNPS Engineering Change Package (ECP) 13-0491, Rev. 0.
- DBNPS ECP 13-0464-002, Rev. 1.
- DBNPS Abnormal Procedure DB-OP-02600, "Operational Contingency Response Action Plan," Rev. 13, March 1, 2013.
- DBNPS Abnormal Procedure DB-OP-02521, "Loss of AC Bus Power Sources," Rev. 21, May 9, 2013.
- DBNPS, Unit1, Environmental Qualification of Electrical Equipment, "Electrical Equipment Qualification Number DB1-100, Environmental Conditions," Rev. 13, May 5, 2014.
- Letter from Mr. Tracy St. Clair, FENOC, to Mr. David Zagres, Flowserve Corporation, "ELAP White Paper NRC Endorsement," dated December 4, 2015.
- Letter from Mr. David Zagres, Flowserve Corporation, to Mr. Tracy St. Clair, FENOC, DBNPS, "Implementation of NRC Endorsement of N-Seal ELAP White Paper," dated December 7, 2015.
- Letter from Mr. Jack R. Davis, NRC to Mr. Jack Stringfellow, Pressurized Water Reactor Owners Group (PWROG), regarding PWROG White Paper on the Response of the N-Seal Reactor Coolant Pump Seal Package to ELAP, dated November 12, 2015 (ADAMS Accession No. ML15310A094).
- NSRC-005, SAFER Response Plan for DBNPS, Rev. 1, dated September 8, 2015.

Davis-Besse Nuclear Power Station
Mitigation Strategies/Spent Fuel Pool Instrumentation Safety Evaluation Audit Items:

Audit Items Currently Under NRC Staff Review, Requiring Licensee Input As Noted

Audit Item Reference	Item Description	Licensee Input Needed
ISE CI 3.2.4.8.A	Clarify the discrepancy between the OIP-stated size of the Phase 2 FLEX 480v portable diesel generators (DGs) (500kW) and the stated size of the Phase 2 FLEX 480v portable DGs in response to the sizing audit question (600kW).	Licensee to provide electrical load and capacity calculations for the FLEX DGs to the NRC staff.
AQ 104	Provide information on the adequacy of the ventilation provided in the battery room to protect the batteries from the effects of extreme high and low temperatures.	Licensee to provide engineering evaluations to the NRC staff regarding the FLEX strategy associated with a loss of ventilation during an ELAP.
AQ 121	On page 17 of 130, the OIP indicates the atmospheric vent valves (AVVs) will be manually operated using reach rods from rooms 500 and 501. Please discuss the means and ability to communicate between the control room and local equipment operators and whether environmental factors, such as elevated temperatures or ambient noise of exiting steam have been considered in the evaluation to determine that the necessary coordination is feasible.	Licensee to provide information to the NRC staff regarding the seismic evaluations associated with the reach rods and handles installed on the AVVs. The licensee has initiated Engineering Evaluation Request 601016597 to document and track the request for additional information regarding the AVV seismic acceptability.
AQ 127	Motive Force for steam generator (SG), pressurizer overpressure relief valve (PORV), atmospheric relief valve (ARV) and atmospheric dump valve (ADV) operations: (a) Specify the size of the SG PORV/ARV/ADV backup nitrogen supply source and the required time for its use	

Audit Item Reference	Item Description	Licensee Input Needed
	as motive force to operate the SG PORV/ARV/ADV for mitigating an ELAP event. (b) Discuss the analysis determining the size of the subject nitrogen supply to show that the nitrogen sources are available and adequate, lasting for the required time. (c) Discuss the electrical power supply that is required for operators to throttle steam flow through the SG PORV/ARV/ADVs within the required time and show that the power is available and adequate for the intended use before the operator takes actions to manually operate the SG PORV/ARV/ADVs. (d) Discuss the operator actions that are required to operate SG PORV/ARV/ADVs manually and show that the required actions can be completed within the required time.	
SE 7	Review the Emergency Feedwater (EFW) building cooling strategy once it becomes available.	Licensee to provide completed EFW building cooling strategy and analysis to the NRC staff for review.

If you have any questions, please contact me at 301-415-3204 or by e-mail at John.Hughey@nrc.gov.

Sincerely,

/RA/

John D. Hughey, Project Manager
Orders Management Branch
Japan Lessons-Learned Division
Office of Nuclear Reactor Regulation

Docket No.: 50-346

Enclosure:
Audit report

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JQuichocho, NRR/JLD
NValos, Region III

ADAMS Accession No. ML16019A367

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