



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
2443 WARRENVILLE ROAD, SUITE 210  
LISLE, ILLINOIS 60532-4352

February 9, 2022

EA-21-172

Mr. Terry Brown  
Site Vice President  
Energy Harbor Nuclear Corp.  
Davis-Besse Nuclear Power Station  
5501 N. State Rte. 2, Mail Stop A-DB-3080  
Oak Harbor, OH 43449-9760

SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION – INTEGRATED INSPECTION  
REPORT 05000346/2021004 AND EXERCISE OF ENFORCEMENT  
DISCRETION

Dear Mr. Brown:

On December 31, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Davis-Besse Nuclear Power Station. On January 28, 2022, the NRC inspectors discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

No findings or violations of more than minor significance were identified during this inspection.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

A handwritten signature in cursive script, appearing to read "Billy C. Dickson, Jr.", written in dark ink.

Signed by Dickson, Billy  
on 02/09/22

Billy C. Dickson, Jr., Chief  
Branch 2  
Division of Reactor Projects

Docket No. 05000346  
License No. NPF-3

Enclosure:  
As stated

cc w/ encl: Distribution via LISTSERV®

Letter to Terry Brown from Billy Dickson dated February 9, 2022.

SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION – INTEGRATED INSPECTION  
REPORT 05000346/2021004 AND EXERCISE OF ENFORCEMENT  
DISCRETION

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**U.S. NUCLEAR REGULATORY COMMISSION**  
**Inspection Report**

Docket Number: 05000346

License Number: NPF-3

Report Number: 05000346/2021004

Enterprise Identifier: I-2021-004-0080

Licensee: Energy Harbor Nuclear Corp.

Facility: Davis-Besse Nuclear Power Station

Location: Oak Harbor, OH

Inspection Dates: October 01, 2021 to December 31, 2021

Inspectors: D. Mills, Senior Resident Inspector  
R. Baker, Senior Operations Engineer  
S. Bell, Health Physicist  
R. Cassara, Resident Inspector  
J. Cassidy, Senior Health Physicist  
M. Garza, Emergency Preparedness Inspector  
G. Hansen, Sr. Emergency Preparedness Inspector  
T. Ospino, Resident Inspector  
G. Roach, Senior Operations Engineer  
R. Ruiz, Project Engineer  
J. Steffes, Senior Resident Inspector

Approved By: Billy C. Dickson, Jr., Chief  
Branch 2  
Division of Reactor Projects

Enclosure

## SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an integrated inspection at Davis-Besse Nuclear Power Station, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

## List of Findings and Violations

No findings or violations of more than minor significance were identified.

## Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
EDG	EA-21-172	Failure to Comply with 10 CFR Part 37	71124.08	Closed

## PLANT STATUS

The unit began the inspection period at rated thermal power. On December 1, 2021, the unit was down powered to 50 percent to allow condenser inspection and plugging of leaking condenser tubes. The unit was returned to rated thermal power on December 7, 2021 and remained at or near rated thermal power for the remainder of the inspection period.

## INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed activities described in IMC 2515, Appendix D, "Plant Status," conducted routine reviews using IP 71152, "Problem Identification and Resolution," observed risk significant activities, and completed on-site portions of IPs. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

## REACTOR SAFETY

### 71111.01 - Adverse Weather Protection

#### External Flooding Sample (IP Section 03.03) (1 Sample)

- (1) The inspectors completed evaluations that flood protection barriers, mitigation plans, procedures, and equipment were consistent with the licensee's design requirements and risk analysis assumptions for coping with external flooding during the week ending December 31, 2021.

### 71111.04 - Equipment Alignment

#### Partial Walkdown Sample (IP Section 03.01) (4 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

- (1) Containment spray train 2 during the week ending December 25, 2021
- (2) Emergency diesel generator 1 during the week ending November 27, 2021
- (3) Station blackout diesel generator while emergency diesel generator 2 was out of service for monthly surveillance run during the week ending December 25, 2021
- (4) Emergency feedwater pump while emergency diesel generator was out of service for monthly surveillance run during the week ending December 25, 2021

#### Complete Walkdown Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated system configurations during a complete walkdown of the high-pressure injection system during the week ending December 18, 2021.

#### 71111.05 - Fire Protection

##### Fire Area Walkdown and Inspection Sample (IP Section 03.01) (4 Samples)

The inspectors evaluated the implementation of the fire protection program by conducting a walkdown and performing a review to verify program compliance, equipment functionality, material condition, and operational readiness of the following fire areas:

- (1) No. 2 Mechanical penetration room, fire area A during the week ending October 16, 2021
- (2) No. 1 Mechanical penetration room and pipeway area, fire area AB during the week ending October 23, 2021
- (3) High voltage switchgear room A and B, fire area S and Q during the week ending November 27, 2021
- (4) Component cooling water heat exchanger and pump room rooms, fire area T, with component cooling water pump 1 out of service for maintenance during the week ending December 4, 2021

##### Fire Brigade Drill Performance Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated the onsite fire brigade training and performance during three fire drills during November 8 – 10, 2021.

#### 71111.06 - Flood Protection Measures

##### Inspection Activities - Internal Flooding (IP Section 03.01) (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the:

- (1) Emergency core cooling system pump room 1

#### 71111.07A - Heat Sink Performance

##### Annual Review (IP Section 03.01) (1 Sample)

The inspectors evaluated readiness and performance of:

- (1) Emergency core cooling room 2 cooler during the week ending October 30, 2021

#### 71111.11A - Licensed Operator Requalification Program and Licensed Operator Performance

##### Requalification Examination Results (IP Section 03.03) (1 Sample)

- (1) The inspectors reviewed and evaluated the licensed operator examination failure rates for the requalification annual operating tests administered from October 18, 2021 through December 10, 2021.

## 71111.11Q - Licensed Operator Regualification Program and Licensed Operator Performance

### Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (1 Sample)

- (1) The inspectors observed and evaluated licensed operator performance in the control room during reactor power escalation from 50 percent to 100 percent after condenser work on December 7, 2021.

### Licensed Operator Regualification Training/Examinations (IP Section 03.02) (2 Samples)

- (1) The inspectors observed and evaluated a simulator-based regualification examination on October 20, 2021.
- (2) The inspectors observed and evaluated the NRC annual operating test examination for crew 1 on November 17–18, 2021.

## 71111.12 - Maintenance Effectiveness

### Maintenance Effectiveness (IP Section 03.01) (2 Samples)

The inspectors evaluated the effectiveness of maintenance to ensure the following structures, systems, and components (SSCs) remain capable of performing their intended function:

- (1) Service water pump 3 replacement
- (2) Train 1 component cooling water pump rotor replacement

## 71111.13 - Maintenance Risk Assessments and Emergent Work Control

### Risk Assessment and Management Sample (IP Section 03.01) (4 Samples)

The inspectors evaluated the accuracy and completeness of risk assessments for the following planned and emergent work activities to ensure configuration changes and appropriate work controls were addressed:

- (1) Operation at reduced power (~50 percent) for condenser tube leak repairs during the week ending December 11, 2021
- (2) Post maintenance testing of component cooling water pump 1 following rotor replacement during the week ending December 11, 2021
- (3) Inspection and repairs of spent fuel pool fuel handling equipment including bridge and fuel assembly up-enders during the week ending December 18, 2021
- (4) Scheduled testing of safety related D1 4160-volt bus during the week ending December 25, 2021

### 71111.15 - Operability Determinations and Functionality Assessments

#### Operability Determination or Functionality Assessment (IP Section 03.01) (2 Samples)

The inspectors evaluated the licensee's justifications and actions associated with the following operability determinations and functionality assessments:

- (1) Service water pump 3 excessive packing leak off, CR-2021-08266
- (2) Emergency diesel generator 1 room ventilation recirculation damper failure, CR-2021- 07222

### 71111.18 - Plant Modifications

#### Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (2 Samples)

The inspectors evaluated the following temporary or permanent modifications:

- (1) Train 1 component cooling water pump rotor replacement
- (2) Emergency diesel generator 1 room ventilation recirculation damper temporary repair

### 71111.19 - Post-Maintenance Testing

#### Post-Maintenance Test Sample (IP Section 03.01) (8 Samples)

The inspectors evaluated the following post-maintenance test activities to verify system operability and functionality:

- (1) Service water pump 3 following replacement of stuffing box bearing during the week ending October 30, 2021
- (2) Service water pump 3 following shaft bearing replacement and repacking during the week ending November 27, 2021
- (3) Component cooling water pump 1 following replacement of pump rotor during the week ending December 11, 2021
- (4) Reactor protection system channel 2 reactor trip breaker 'A' following trip breaker replacement during the week ending December 18, 2021
- (5) Decay heat / low pressure injection pump 2 following inspection and cleaning of pump borated water storage tank suction during the week ending December 25, 2021
- (6) Safety features actuation system channel 2 following replacement of channel 2 borated water storage tank level sensor power supply and bistable during the week ending December 18, 2021
- (7) Auxiliary feedwater pump 2 following replacement of turbine governor relays during the week ending December 18, 2021
- (8) Safety features actuation system channel 1 following replacement of channel 1 containment pressure sensor power supply and bistables during the week ending December 4, 2021



#### 71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

##### Surveillance Tests (other) (IP Section 03.01) (1 Sample)

- (1) Emergency diesel generator 2 monthly surveillance run during the week ending December 25, 2021

##### Inservice Testing (IP Section 03.01) (1 Sample)

- (1) Turbine marine diesel FLEX generator quarterly run during the week ending November 20, 2021

#### 71114.04 - Emergency Action Level and Emergency Plan Changes

##### Inspection Review (IP Section 02.01-02.03) (1 Sample)

- (1) The inspectors evaluated the following submitted Emergency Action Level and Emergency Plan changes.

The licensee did not make any changes to the site's Emergency Action Level procedures or Emergency Plan during the period of this inspection (July 1, 2020 through June 30, 2021). The NRC inspectors independently reviewed the revisions of the site's Emergency Action Level procedures and Emergency Plan that were current for the inspection period to verify no changes were made.

This evaluation does not constitute NRC approval.

#### 71114.06 - Drill Evaluation

##### Select Emergency Preparedness Drills and/or Training for Observation (IP Section 03.01) (1 Sample)

- (1) Emergency preparedness integrated drill on October 5, 2021

## **RADIATION SAFETY**

#### 71124.08 - Radioactive Solid Waste Processing & Radioactive Material Handling, Storage, & Transportation

##### Radioactive Material Storage (IP Section 03.01) (1 Sample)

The inspectors evaluated the licensee's performance in controlling, labeling, and securing the following radioactive materials:

- (1) This included activities within the auxiliary, radioactive waste, and steam generator storage buildings

#### Radioactive Waste System Walkdown (IP Section 03.02) (1 Sample)

The inspectors walked down the accessible portions of the solid radioactive waste systems and evaluated system configuration and functionality:

- (1) This included the components located with the auxiliary and radioactive waste buildings

#### Waste Characterization and Classification (IP Section 03.03) (3 Samples)

The inspectors evaluated the following characterization and classification of radioactive waste:

- (1) 10 CFR Part 61 Data for Primary Resin Sampled July 16, 2020
- (2) 10 CFR Part 61 Data for Primary Resin Sampled June 17, 2019
- (3) 10 CFR Part 61 Data for Dry Active Waste Sampled December 20, 2018

#### Shipping Records (IP Section 03.05) (4 Samples)

The inspectors evaluated the following non-excepted radioactive material shipments through a record review:

- (1) Radioactive Waste Shipment 2021-1005 of Dewatered Resin Transported in a Type A Package
- (2) Radioactive Waste Shipment 2021-1001 of Dewatered Resin Transported in a Type A Package
- (3) Radioactive Waste Shipment 2020-1002 of Dry Active Waste Transported in a General Design Package
- (4) Radioactive Waste Shipment 2021-1003 of Dewatered Resin Transported in a Type A Package

### **OTHER ACTIVITIES – BASELINE**

#### 71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

#### MS05: Safety System Functional Failures (SSFFs) Sample (IP Section 02.04) (1 Sample)

- (1) April 1, 2020 through March 31, 2021

#### MS06: Emergency AC Power Systems (IP Section 02.05) (1 Sample)

- (1) July 1, 2020 through June 30, 2021

#### MS07: High Pressure Injection Systems (IP Section 02.06) (1 Sample)

- (1) July 1, 2020 through June 30, 2021

MS08: Heat Removal Systems (IP Section 02.07) (1 Sample)

- (1) July 1, 2020 through June 30, 2021

MS09: Residual Heat Removal Systems (IP Section 02.08) (1 Sample)

- (1) October 1, 2020 through September 30, 2021

MS10: Cooling Water Support Systems (IP Section 02.09) (1 Sample)

- (1) October 1, 2020 through September 30, 2021

BI01: Reactor Coolant System (RCS) Specific Activity Sample (IP Section 02.10) (1 Sample)

- (1) July 1, 2020 through September 30, 2021

BI02: RCS Leak Rate Sample (IP Section 02.11) (1 Sample)

- (1) October 1, 2020 through September 30, 2021

OR01: Occupational Exposure Control Effectiveness Sample (IP Section 02.15) (1 Sample)

- (1) July 1, 2020 through September 30, 2021

PR01: Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual  
Radiological Effluent Occurrences (RETS/ODCM) Radiological Effluent Occurrences Sample  
(IP Section 02.16) (1 Sample)

- (1) July 1, 2020 through September 30, 2021

71152 - Problem Identification and Resolution (PI&R)

Semiannual Trend Review (IP Section 02.02) (2 Samples)

- (1) The inspectors reviewed the licensee's corrective action program for potential adverse trends related to missed surveillances that might be indicative of a more significant safety issue.
- (2) The inspectors reviewed the licensee's corrective action program for inconsistencies in condition reports that might be indicative of a more significant safety issue.

Annual Follow-Up of Selected Issues (IP Section 02.03) (3 Samples)

The inspectors reviewed the licensee's implementation of its corrective action program related to the following issues:

- (1) Failure of reactor coolant system boron trending to detect a diverging boron concentration trend caused by failed boron measurement equipment
- (2) Service water valve 1429, component cooling water heat exchanger 3 service water outlet isolation valve failed air drop test (CR 2021-06913)
- (3) Service water pump 3 rework due to bearing modification

## OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

### 92709 - Licensee Strike Contingency Plans

#### Licensee Strike Contingency Plans (1 Sample)

- (1) On November 15, 2021, at midnight, the contract extension between the International Brotherhood of Electrical Workers Local 245 and Energy Harbor expired. In preparation for a potential strike, the NRC inspectors evaluated the adequacy of the licensee's contingency plan. The inspectors assessed the adequacy of the plan's post strike staffing levels, staff qualifications, safety conscious working environment, and site access in meeting operational and security requirements. No issues were identified. A new contract was agreed upon on January 14, 2022.

## INSPECTION RESULTS

Enforcement Discretion	Enforcement Action EA-21-172: Failure to Comply with 10 CFR Part 37	71124.08
<u>Description:</u> <p>On November 29, 2016, the licensee was issued NRC Inspection Report No. 05000346/2016403, which documented a licensee identified violation of 10 CFR Part 37, Physical Protection of Category 1 and Category 2, Quantities of Radioactive Material at Facilities with a 10 CFR Part 73, Physical Protection Program. The violation met the criteria for Enforcement Discretion as described in Enforcement Guidance Memorandum (EGM) 14-001, "Interim Guidance for Dispositioning 10 CFR Part 37 Violations with Respect to Large Components or Robust Structures Containing Category 1 or Category 2 Quantities of Material at Power Reactor Facilities Licensed Under 10 CFR Parts 50 and 52."</p> <p>Subsequently, the inspectors re-evaluated this activity and found that while a violation of regulatory requirements continues to exist, the conditions remain within the criteria for enforcement discretion established within EGM 14-001.</p> <p>Corrective Actions: As specified in EGM 14-001, the application of discretion is authorized until the underlying technical issue is dispositioned through rulemaking or other regulatory action. Additional corrective actions are not required.</p> <p>Corrective Action References: Not applicable.</p>		
<u>Enforcement:</u> <p>Violation: On November 29, 2016, a violation of 10 CFR Part 37 was documented in Davis-Besse Inspection Report No. 05000346/2016403. The inspectors determined that the previously identified violation remains.</p> <p>Basis for Discretion: This violation met the criteria for Enforcement Discretion as described in Enforcement Guidance Memorandum (EGM) 14-001, "Interim Guidance for Dispositioning 10 CFR Part 37 Violations with Respect to Large Components or Robust Structures Containing Category 1 or Category 2 Quantities of Material at Power Reactor Facilities Licensed Under 10 CFR Parts 50 and 52."</p>		

Minor Violation	71152
<p>Minor Violation: The inspectors performed an in-depth inspection sample of unexpected boron sample results as detailed in condition report 2021-03645. On May 4, 2021, a daily reactor coolant boron sample, which indicated 26 parts per million (ppm) less than the previous day's sample, occurred. An expected change in reactor coolant system (RCS) boron concentration is 1-4 ppm daily. Further analysis determined that the May 4 sample was valid and that samples between March 27 and May 3, 2021, had discrepancies in their results of 20 to 30 ppm higher than what was indicated by other reactivity parameters. Due to the inaccurate boron measurements, the licensee invoked technical specification surveillance requirement 3.0.3 and reperformed surveillances with updated procedures and chemistry equipment. The licensee determined that boron concentration in the RCS, borated water storage tank, core flood tanks, and waste receiver tanks was within technical specification required limits. The licensee performed an apparent cause analysis, which determined that instrument error was the most attributing cause. Licensee corrective actions include revised titrator procedure documents, newly purchased instrumentation, and improved training.</p> <p>Screening: The inspectors determined the performance deficiency was minor. The licensee's failure to provide adequate procedures for the sampling, analysis, and trending was a minor performance deficiency because during the period between March 27, 2021 and May 4, 2021, results from chemistry sampling diverged from actual and predicted trend values.</p> <p>Enforcement: Technical Specification Section 5.4.1 requires, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978.</p> <p>NRC Regulatory Guide 1.33, Revision 2, Appendix A, Section 8 addresses "Procedures for Control of Measuring and Test Equipment and for Surveillance Tests, Procedures and Calibrations" and Section 8.a addresses "Procedures of a type appropriate to the circumstances should be provided to ensure that tools, gauges, instruments, controls, and other measuring and testing devices are properly controlled, calibrated, and adjusted at specified periods to maintain accuracy. Specific examples of such equipment to be calibrated and tested are readout instruments, interlock permissive and prohibit circuits, alarm devices, sensors, signal conditioners, controls, protective circuits, and laboratory equipment." The failure to comply with Technical Specification Section 5.4.1 constitutes a minor violation that is not subject to enforcement action in accordance with the NRC's Enforcement Policy.</p>	

Minor Violation	71152
<p>Minor Violation: The inspectors reviewed the licensee's corrective action program for potential adverse trends related to missed surveillances that might indicate of a more significant safety issue.</p> <ul style="list-style-type: none"> <li>• CR 2020-04007, "DB-SC-04200 overdue," describes the miscellaneous diesel generator and security uninterruptible power supply test unable to be performed before going overdue because of a maintenance condition on an inverter. This test is not a technical specification-required surveillance test, and the licensee was discovered the issue on its overdue date.</li> <li>• CR 2020-05248, "Portions of monthly surveillance DB-ME-04009 for June 2020 incorrectly marked N/A," describes several portions of the surveillance test marked 'N/A and skipped.'</li> </ul>	

- CR 2021-08458, "DB-MI-04014 not completed prior to overdue date," describes the failure to perform the surveillance test before the due date clean waste receiver tank hydrogen and oxygen sensor surveillance going overdue by more than a week and was discovered past the overdue date.
- CR 2021-08760, "Battery room B door 427A not inspected on correct frequency," describes the failure to inspect the normally open fire door on the required weekly frequency.
- CR 2021-09697, "DB-FP-04017 Acceptance criteria 5.1.2 went overdue on December 23, 2021 for #4 MPR water curtain spray system," describes the failure to perform the surveillance test before the overdue date and was discovered several shifts after the overdue date had passed.
- CR 2021-01104, "SR 3.3.1.3 Function 7 for RCP running not performed within 23 days," describes the failure to perform the technical specification surveillance "high flux/number of reactor coolant pumps on" within the required 23-day interval. This issue is documented below as a minor violation of technical specifications.

Though the inspectors did not identify any issue of greater than minor significance, the fact that the licensee missed multiple surveillances tests during the reviewed period could indicate a more significant underlying issue. The trend, if not arrested, may lead to a more significant safety issue.

Regarding the condition report 2021-01104, "SR 3.3.1.3 Function 7 for RCP running not performed within 23 days," the license implemented a surveillance test risk-informed documented evaluation (STRIDE) to include the requirement for each of the four channels to be tested on a 92-day interval. Still, it failed to include the requirement for testing on a staggered 23-day frequency. This means that each channel is required to be tested every 92 days and that one channel is required to be tested at least once every 23 days. In this case, an engineering review of the STRIDES implementation discovered that the licensee had missed the 23-day requirement. Two channels were overdue for testing per the 23-day frequency but were not overdue per the 92-day frequency requirement.

Screening: The inspectors determined the performance deficiency was minor. The licensee's failure to perform surveillance requirement 3.3.1.3 according to the interval required by technical specifications was a performance deficiency. The significance of this performance deficiency was minor because it did not negatively affect plant safety.

Enforcement: The failure to comply with technical specification surveillance requirement 3.3.1.3 constitutes a minor violation that is not subject to enforcement action in accordance with the NRC's Enforcement Policy.

Observation: Potential Trend Regarding Inconsistent Use of the Corrective Action Program	71152
<p>The inspectors reviewed the licensee's corrective action program for condition reports that might indicate a more significant safety issue. The inspectors noted multiple examples indicating that the threshold for writing a condition report may not be consistent among plant employees.</p> <ul style="list-style-type: none"> <li>• On July 30, 2021, during work on the fire protection system, the mechanical penetration room 4 water curtain was spuriously activated which caused a significant amount of water to run from the room into the passage outside. Following this condition, the inspectors observed standing water. The licensee determined that this</li> </ul>	

standing water was caused by partially and completely blocked floor drains. A plant employee cleared the blockage and water drained as designed. Following discovery of this issue, the inspectors noted several additional floor drains that appeared to contain significant buildup of debris. The licensee did not generate a condition report until the inspectors intervened (CR 2021-07350).

- A contributing cause of the July 8, 2021 reactor trip was the failure of the digital electrohydraulic control (DEHC) uninterruptible power supply (UPS) battery due to a degraded cell. The licensee replaced this cell, and the battery was thought to be restored. However, the inspectors noted that another cell appeared to show similar signs of degradation and brought the concern to the licensee over several months. The licensee wrote no condition report until the inspectors brought their concern to the Plant Manager (CR 2021-07316). The licensee has since replaced the entire battery bank.
- On several instances, the inspectors noted charging error messages on battery backup emergency lighting and brought these to the licensee's attention. Though the licensee fixed the issue every instance, the licensee wrote no condition report. This result was in contrast to multiple CRs written for similar conditions over the same period.

Individually, none of these examples may suggest an ongoing problem, but the inspectors determined that they may indicate a potential weakness when viewed in the aggregate. Specifically, station personnel may not have a consistent standard for documenting condition reports for these and other issues. Because of this, some conditions may be tracked through the corrective action program and the station may be missing the opportunity to identify and trend deficiencies potentially resulting in an adverse impact on the plant. The inspectors provided these observations to the licensee and identified no findings or violations.

Observation: Service Water Valve 1429 Failed Air Drop Test	71152
<p>The inspectors performed an in-depth inspection sample of service water valve 1429, component cooling water (CCW) heat exchanger 3 service water outlet isolation valve, which failed a scheduled air drop test as documented in condition report 2021-06913. This fail-open pneumatically actuated valve controls service water flow through CCW heat exchanger 3. The licensee overhauls the valve on a 12-year preventive maintenance frequency. The licensee performed this air drop test to assess the condition of the valve and determine a maintenance strategy. This scheduled interval for the air drop test changed from 18 months to 24 months in 2006. The failed air drop test indicated reduced seal performance, but the licensee determined that the valve would fulfill its safety function until scheduled preventive maintenance. The inspectors identified no findings or violations.</p>	

Observation: Service Water Pump 3 Repetitive Failure of Packing Due to Bearing Design Change	71152
<p>The inspectors performed an in-depth inspection sample of service water pump 3 (SWP3) rework following the scheduled pump replacement in July 2021. The initial post-maintenance testing of the new pump failed due to a lack of packing leak-by resulting in overheated packing. Plant operators tripped the pump manually as soon as they observed the condition, and maintenance personnel repacked the pump following troubleshooting. Once the licensee repacked SWP3, it passed post-maintenance testing with less than expected packing leak-by, and was declared operable on August 3, 2021, but maintained in spare status. SWP3 was again declared inoperable for unrelated maintenance from August 26, 2021, until September 21, 2021, when it was declared operable but maintained in spare status. On September 30, 2021, SWP3 was declared inoperable pending completion of the quarterly test performed on 10/14/2021. During the quarterly test on October 14, 2021, the packing leak-by issue persisted, and the packing began to overheat. Troubleshooting identified that a change in the bushing type, from smooth bronze to axially grooved polymer, had led to the packing issues. The licensee replaced the axially grooved polymer bearings with conventional smooth bronze, and operators restored the pump to an operable condition with adequate packing leak-by. The inspectors identified no findings or violations.</p>	

## EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

- On January 28, 2022, the inspectors presented the integrated inspection results to Mr. T. Brown, Site Vice President, and other members of the licensee staff.
- On December 13, 2021, the inspectors presented the radiation protection baseline inspection results to Mr. T. Brown, Site Vice President, and other members of the licensee staff.
- On December 13, 2021, the inspectors presented the Review of Licensed Operator Annual Examination summary results inspection results to Mr. D. Witt, Operations Training Superintendent, and other members of the licensee staff.
- On December 14, 2021, the inspectors presented the EP Inspection Exit Meeting inspection results to Mr. R.W. Oesterle, Manager, Regulatory Compliance and Emergency Response, and other members of the licensee staff.



## DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Corrective Action Documents	CR-2021-08640	DFP Room Watertight Door 217 Hinges Degraded, and Latch Pins are at Maximum Adjustment	11/11/2021
		CR-2021-09473	Door 217 Upper Latch Found Degraded	12/14/2021
	Procedures	NORM-LP-7221	Davis Besse Flooding Mitigating Strategy Assessment Support Document	12/19/2016
		NORM-LP-7222	Davis Besse Nuclear Power Station Flooding Focused Evaluation	10/13/2017
		RA-EP-02830	Emergency Plan Off Normal Occurrence Procedure	6
71111.04	Corrective Action Documents	CR-2021-01043	EDG RM 1 Heater E48-1 Not Maintaining Desired Temperature	02/17/2021
		CR-2021-09576	SBODG DC Ground Meter Swinging During Monthly Run	0
	Miscellaneous	Notification 601304770	Emergency Diesel Generator Room 1 Ambient Temperature 68-69 Degrees F	02/17/2021
	Procedures	DB-OP-06011	High Pressure Injection System	34
		DB-OP-06013	Containment Spray System	28
		DB-OP-06234	Emergency Feedwater System	09
		DB-OP-06316	Diesel Generator Operating Procedure	69
		DB-OP-06334	Station Blackout Diesel Generator Operating Procedure	32
71111.05	Fire Plans	PFP-AB-208	No 1 Mechanical Penetration Room and Pipeway Area Rooms 202, 208 and 209 DC Fire Area AB	8
		PFP-AB-236	No 2 Mechanical Penetration Room, Room 236 Fire Area A	5
71111.11A	Miscellaneous	Requalification Program Annual Testing Summary Results	Licensed Operator Annual Performance Records for 2021	12/13/2021
71111.11Q	Miscellaneous	OPS-JPM-042	In Plant Job Performance Measure	03
		OPS-JPM-238	Simulator Job Performance Measure	01
		OPS-JPM-257	In Plant Job Performance Measure	00
		OPS-JPM-284	Simulator Job Performance Measure	00
		OPS-JPM-293	Administrative Job Performance Measure	00
		ORQ-EPE-S103	Simulator Scenario Guide	11
		ORQ-EPE-S114	Simulator Scenario Guide	11

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		ORQ-EPE-S129	Simulator Scenario Guide	12
71111.12	Work Orders	200817776	Auxiliary Feedwater Pump Turbines	11/08/2021
		200866466	Service Water Pumps, Strainers, and PIPI	10/22/2021
71111.13	Corrective Action Documents	CR-2021-07736	Service Water Pump 3 Manually Tripped	10/14/2021
	Work Orders	200866466	Service Water Pump 1-3 Minor Maintenance	10/22/2021
		200866740	Service Water Pump 1-3 Install Leak Collection and Drainage Equipment	10/20/2021
71111.15	Corrective Action Documents	CR-2021-07222	HV5329B EDG Room 1 Recirc Damper Not Modulating	10/26/2021
		CR-2021-07257	EDG 1 Ventilation Recirc Damper has a Crack in the Shaft	10/27/2021
		CR-2021-08257	EDG Room 2 Vent Fan Recirc Supply Damper HV5336B Not Fully Open with Hydromotor De-Energized	11/24/2021
71111.19	Procedures	DB-PF-03572	Component Cooling Water Pump 1 Baseline Test	07
	Work Orders	200817776	Auxiliary Feed Pump Turbine 1-2 Replace Agastat Relay	10/19/2021
71111.22	Work Orders	200809037	SFAS Channel 1 Functional Test	11/30/2021
		200809710	SFAS Channel 2 Functional Test	12/14/2021
		200810139	Channel Functional Test of Reactor Trip Breaker A, RPS Channel 2 Reactor Trip Module Logic and Arts Channel 2 Output Logic	12/15/2021
		200816776	Determination of MTC - Rod Swap	10/12/2021
71114.04	Miscellaneous		DBNPS Emergency Plan	34
		DBRM-EMER-1500A	Davis Besse Emergency Action Level Basis Document	09
		RA-EP-01500	Emergency Classification	16
71114.06	Miscellaneous	Davis-Besse Nuclear Power Station Emergency Preparedness Integrated Dill	Drill Guide	10/05/2021
71124.08	Calibration Records		Tennelec Proportional Counter Model S5XLR Serial Number 2.12.56 Calibration	11/18/2019
	Corrective Action Documents	CR-2020-00306	Periodic Low PH Conditions in Liquid Radwaste System	01/16/2020
		CR-021-03087	Waste Oil Drum	04/19/2021
		CR-2021-04312	Source Paperwork	05/28/2021

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	Miscellaneous	CR-2021-06693	MS-C-08-03: Gaps in Shipping Package Checklists	09/03/2021
			Davis-Besse Nuclear Power Station Part 37 Radioactive Materials Security Plan	2
		467716004	10 CFR Part 61 Analysis for Dry Active Waste	12/20/2018
		483034001	10 CFR Part 61 Analysis for Primary Resin	06/17/2019
		523959001	10 CFR Part 61 Analysis for Primary Resin	07/16/2020
		DBBP-LP-1601	Davis-Besse Nuclear Power Station Part 37 Radioactive Materials Security Plan Guidance	2
		G-RP-10CFR37_FEN_00	10CFR37 Control of Cat 1 and Cat 2 RAM	0
		SE-PART37WKR_FEN	Radioactive Materials Part 37 Plan Worker Training- DB Security	3
	Procedures		Process Control Program	9
		DB-HP-01511	Low Level Radioactive Waste Storage Facility (LLRWSF)	9
		DB-HP-01702	Transfer, Handling and Storage of Radioactive Material	27
		NOP-OP-5201	Shipment of Radioactive Material-Waste	10
	Radiation Surveys	WO 200783224	Licensed Sources Leak Testing and Inventory	05/27/2021
	Shipping Records	2020-1002	Radioactive Waste Shipment of Dry Active Waste	03/19/2020
		2021-1001	Radioactive Waste Shipment of Dewatered Resin	08/14/2021
		2021-1003	Radioactive Waste Shipment of Dewatered Resin	08/28/2021
		2021-1005	Radioactive Waste Shipment of Dewatered Resin	11/20/2021
71151	Miscellaneous		Reactor Coolant System Activity Dose Equivalent Iodine Data (07/01/2020 - 09/30/2021)	Various
			Reactor Coolant System Dose Equivalent Analysis	11/03/2021
			Gaseous and Liquid Radioactive Effluent Radiological Dose Summary Reports, July 2020 through September 2021	Various
	Procedures	DB-CH-01815	Dose Equivalent I-131 Determination	4
		DB-HP-01116	Canberra Genie 2000 Counting System with Apex Gamma Software	2
		NOBP-LP-4012	Industry Reporting and Information System (IRIS)	8
71152	Corrective Action	CR-2020-00200	DB-FP-04017 Not Able to be Completed by Overdue Date	01/11/2020

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Documents	CR-2020-02157	PRA Analysis Assessment Not Performed in Support of STRIDE 2019-0001	03/12/2020
		CR-2020-04007	DB-SC-04200 Overdue	05/05/2020
		CR-2020-05248	Portions of Monthly Surveillance DB-MI-04009 for June 2020 Incorrectly Marked N/A	06/24/2020
		CR-2021-01104	SR 3.3.1.3 Function 7 for RCP Running Not Performed Within 23 Days	02/18/2021
		CR-2021-01506	TRM TVR 8.8.1.2 Not Met for EDG 1 and EDG 2 Due to PM Frequency From 6 Years to 18 Years Not Being Evaluated by an Acceptable 50.59	03/04/2021
		CR-2021-02729	Surveillance and Periodic Test Program Change Form Not Submitted as Required	04/09/2021
		CR-2021-03645	Unexpected Boron Results for the Daily Reactor Coolant System	05/04/2021
		CR-2021-03693	Unexpected Boron Results - Investigation in Progress	05/05/2021
		CR-2021-03709	Reactivity Anomaly Surveillance Missed due to Performance with Potentially Erroneous RCS Boron Concentration	05/06/2021
		CR-2021-05633	SW Pump 3 Full Flow Testing Stopped Due to Loss of Pump Packing Gland Leak Off	07/24/2021
		CR-2021-05658	Entry into Abnormal Procedure for Loss of Service Water Secondaries	07/26/2021
		Cr-2021-05760	Lantern Ring Dimensions per Vendor Recommended Clearances Not in Tolerances	07/29/2021
		CR-2021-05789	Water curtain Activation	07/30/2021
		CR-2021-05793	HPI Pump 2 Sprayed with Fire Protection Water	07/30/2021
		CR-2021-05795	Low Pressure Injection Pump 2 Sprayed with Fire Protection Water	07/30/2021
		CR-2021-06913	SW1429 (Component Cooling Water Heat Exchanger 3 Service Water Outlet Isolation Valve) Air Drop Test	09/14/2021
		CR-2021-07350	Backed Up Floor Drain Encountered During Water Curtain Actuation	10/01/2021

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		CR-2021-07511	Untimely Initiation of Condition Report 2021-07350 (Backed Up Floor Drain Encountered During Water Curtain Actuation)	10/08/2021
		CR-2021-07736	Service Water Pump 3 Manually Tripped	10/14/2021
		CR-2021-08458	DB-MI-04014 Not Completed Prior to Overdue Date	11/05/2021
		CR-2021-08760	Battery Room B Door 427A Not Inspected on Correct Frequency	11/16/2021
		CR-2021-09054	Low Oil Level SW Pump 3 Thrust Bearing	11/29/2021
		CR-2021-09697	DB-FP-04017 Acceptance Criteria 5.1.2 went Overdue on 12/23/21 for '4' MPR Water Curtain Spray System	12/25/2021
	Corrective Action Documents Resulting from Inspection	CR-2021-01334	Degraded Cabinet Ground Strap Lug	03/26/2021
		Cr-2021-01488	Conduit Elbow Cover Top Cover Bolt Missing	04/02/2021
		CR-2021-01490	Flexible Conduit Has Ground Lugs on Each End but no Ground Cable	04/02/2021
		CR-2021-01573	NRC Identified Concern Regarding Potentially Inadequate Part 21s Leading to EDG Failures	09/17/2021
		CR-2021-02204	NRC NCV: Failure to Maintain the Effectiveness of the Emergency Plan due to Telephone Issues	05/21/2021
		CR-2021-02440	Containment Spray 1 Pump Outboard Bearing Oil Level Below Sightglass Band	04/30/2021
		CR-2021-02969	2021 Cyber Inspection: Instruments for Reg Guide 1.97, Post Accident Monitor, are Categorized as Indirect when they Should be Direct CDAs	05/14/2021
		CR-2021-03462	NRC Observation: Rust Discovered on Self-Contained Breathing Apparatus Pack	05/26/2021
		CR-2021-04641	NRC Question Regarding Functionality of Fire Suppression Sprinkler in SW Valve Room	07/13/2021
		CR-2021-04717	DFP Alternator Lower Mounting Nut is Loose	07/16/2021
		CR-2021-04718	DFP Cooling Hoses Have Small Cracks Developing	07/16/2021
		CR-2021-04720	DFP Alternator Positive Lug Questions	07/16/2021
		CR-2021-04894	Service Water Tunnel Ceiling Leak Impacting Conduits Below	07/23/2021
		CR-2021-05395	NRC Identified: Vegetation Growth Around Radiological Environmental Monitoring Program Air Sampling Stations	08/13/2021

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		CR-2021-05419	NRC Identified: DB-HP-01702: Procedure Confusion on Environmental Air Sampler Calibration	08/13/2021
		CR-2021-05729	2021 NRC SIT: Operational Impact for Not Replacing ZS01B	09/15/2021
		CR-2021-05919	2021 NRC SIT: Maintenance Rule Evaluation for CR-2021-05262 Required	09/03/2021
		CR-2021-06024	NRC SIT: Maintenance Rule Failure Review for CR-2021-05319 Defective Battery Cell Identified at D3201B During Troubleshooting of DEHC UPS	09/08/2021
		CR-2021-06134	2021 NRC SIT: Incorrect AP-913 Classification for C3621	09/10/2021
		CR-2021-06146	Switch DST for MUP time Delay Relay 2Y1 Isolation Potentially Exposed to Similar Degradation Mechanisms as EDG FFSS	09/10/2021
		CR-2021-06212	Incorrect Value Recorded in Operator Rounds for August 2020 DC MCC 2 Ground Indication	09/16/2021
		CR-2021-06279	MPR 4 Housekeeping Issues	09/17/2021
		CR-2021-06500	2021 PI&R NRC Inspection: Observation for Appropriate CR Category Assignments	09/24/2021
		CR-2021-06582	2021 NRC SIT: Calculation Contains Incorrect Value in Table	09/30/2021
		CR-2021-06845	BACC: Leak from Instrument Housing on PD16589	10/08/2021
		CR-2021-07350	Backed up Floor Drain Encountered During Water Curtain Actuation	10/29/2021
		CR-2021-07458	NRC DBAI 2021 - Clarification of Result and Conclusions Summary in C-EE-002.01-010	11/05/2021
		CR-2021-07511	Untimely Initiation of condition Report 2021-07350 (Backed Up Floor Drain Encountered During Water Curtain Actuation)	11/05/2021
		CR-2021-07512	NRC DBAI 2021 - Excessive Grease Identified on 1P Battery Connector	11/05/2021
		CR-2021-07515	NRC DBAI 2021 - Clarification of Output Documents to Calculation C-EE-004.01-049 (4.16 kV Bus C1/D1 Degraded Voltage, Loss of Voltage, and 27X-6	11/05/2021

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		CR-2021-07904	NRC DBAI 2021 - Error in Previous Revision of 30 of C-EE-002.01-010	11/19/2021
		CR-2021-07914	Unable to Identify CRs Related to WO 200751566 and WO 200679064 Regarding Instrument As-Found Out of Tolerance	10/19/2021
		CR-2021-09166	Failure to Appropriately Classify the DEHC UPS Supply Battery Bank	11/19/2021
		CR-2021-09167	Failure to Provide Procedural Instructions for Transferring Gland Sealing Steam from Main to Auxiliary Steam Following a Reactor Trip	11/19/2021
		CR-2021-09278	NRC TI Inspection: Resources Not Established for Performance of Calibration/Alarm Testing for Open Phase Systems	12/09/2021
		CR-2021-09282	NRC TI Inspection: DB-OP-06313 Procedure Enhancement Observation for Open Phase Condition	12/09/2021
		CR-2021-09636	Wasp Nest Identified on the SBODG Building	12/29/2021
		CR-2021-09637	Bird Nest Identified on SBODG Radiator	01/03/2022
		CR-2021-7464	NRC DBAI 2021 - HV5336B (EDG 2 Room HVAC Recirc Damper Hydramotor Position Indicator Labels Incorrectly Depict 'Open' and 'Shut')	11/05/2021
	Drawings	N300214401	Model VITx-50 2G/28BHC - 2 STG	0
	Engineering Changes	EC 19-0041-001	Service Water Pump 3 Refurbishment	08/02/2019
	Miscellaneous	Maintenance Plan	DB-TV1429 CCW Heat Exchanger	0
		Maintenance Plan	DB-TV1429 CCW Heat Exchanger (Service Water Side Various)	0
		Maintenance Plan	Db-TV1429 SW Outlet Isolation Valve Op	0
92709	Miscellaneous		Labor Contingency Plan - Energy Harbor	0
			Labor Contingency Plan - Energy Harbor	1
			Davis Besse Chemistry Department Management Personnel Training Qualification Records	Various
			Davis Besse Chemistry Department Management Personnel Training Exemption and Equivalent Qualification Forms	11/05/2021

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		ANSI 18.1-1971	Selection and Training of Nuclear Power Plant Personnel	03/08/1971
		Command SRO Proficiency Records	3rd Quarter 2021	11/16/2021
		Command SRO Proficiency Records	4th Quarter 2021	11/16/2021
		DBNPS Emergency Plan	EMERGENCY PLAN	34
		ORQ-EPE-S111	Simulator Scenario Guide	14
		ORQ-EPE-S112	Simulator Scenario Guide	11
		ORQ-EPE-S149	Simulator Scenario Guide	00
		Shift Manager Proficiency Records	3rd Quarter 2021	11/16/2021
		Shift Manager Proficiency Records	4th Quarter 2021	11/16/2021
		TPD-CRP	Training Program Description - Fleet Radiation Protection Common Training Program	01/27/2021
		TPD-DBCH	Davis Besse Chemistry Training Program Description	4
		TPD-DBRP	Davis-Besse Radiation Protection Training Program Description	7
	Procedures	NOBP-TR-1112	Conduct of Simulator Training and Evaluation - Crew and Individual Evaluation Forms	10/29/2021
		NOBP-TR-1271	Inactive License Retraining Program	13