



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

May 12, 2022

Mr. Terry Brown
Site Vice President
Energy Harbor Nuclear Corporation
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 05000346/2022001

Dear Mr. Brown:

On March 31, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Davis-Besse Nuclear Power Station. On April 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 that reads "Billy C. Dickson, Jr.".

Signed by Dickson, Billy
on 05/12/22

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 May 12, 2022.

SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION – INTEGRATED INSPECTION
REPORT 05000346/2022001

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

Docket Number: 05000346

License Number: NPF-3

Report Number: 05000346/2022001

Enterprise Identifier: I-2022-001-0061

Licensee: Energy Harbor Nuclear Corporation

Facility: Davis-Besse Nuclear Power Station

Location: Oak Harbor, OH

Inspection Dates: January 01, 2022 to March 31, 2022

Inspectors: D. Mills, Senior Resident Inspector
R. Cassara, Resident Inspector
J. Cassidy, Senior Health Physicist

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

None.

PLANT STATUS

Unit 1 began the inspection period at rated thermal power. On February 5, 2022, plant operators reduced reactor power to approximately 15 percent following an inadvertent isolation of the reactor coolant system letdown during a planned letdown demineralizer swap. The plant operators increased reactor power to 93 percent between February 7 and February 17, 2022. Shortly after that, the unit entered coast-down operations and began a scheduled refueling outage on March 4, 2022. The unit remained shut down in the refueling outage 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," 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

Impending Severe Weather Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated the adequacy of the overall preparations to protect risk-significant systems from impending winter storms during the week ending February 5, 2022.

71111.04 - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (2 Samples)

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

- (1) Decay heat removal train 1 during the week ending March 12, 2022
- (2) Service water system during the week ending March 19, 2022

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) Shield building annulus, fire areas A and AB, during the week ending March 19, 2022
- (2) Containment building 565', 585', 603' elevations, fire area D, during the week ending April 2, 2022
- (3) Diesel generator 1-2 room, fire area J, during the week ending March 19, 2022
- (4) Containment under vessel area, east-west tunnel, East and West D-rings, fire area D, during the week ending April 2, 2022

71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (3 Samples)

- (1) The inspectors observed and evaluated licensed operator performance in the control room following a forced power reduction during the week ending February 5, 2022, and power ascension including main feedwater pump operations during the week ending February 12, 2022
- (2) The inspectors observed and evaluated licensed operator performance in the control room during power reduction for refueling outage 1R22, including main feedwater pump operations, turbine trip, and low power operation during the week ending March 5, 2022
- (3) The inspectors observed and evaluated licensed operator performance in the control room during yellow risk while the reactor coolant system inventory was reduced for refueling operations during the week ending April 2, 2022

Licensed Operator Requalification Training/Examinations (IP Section 03.02) (1 Sample)

- (1) The inspectors observed and evaluated licensed operator requalification simulator scenarios during the week ending February 19, 2022

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (1 Sample)

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

- (1) Replacement of containment pressure power supply and bistables BA409 and BA410 for safety features actuation system channel 4 during the week ending February 19, 2022

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) Refueling outage risk plan during the week ending March 5, 2022
- (2) Risk management during yellow risk due to reactor coolant system reduced inventory for handhole removal and nozzle dam installation during the week ending March 12, 2022
- (3) Risk management during reactor vessel head detention and lift during the week ending March 12, 2022
- (4) Risk management during reactor vessel head installation during the week ending April 2, 2022

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (6 Samples)

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

- (1) Decay Heat Pump 2 – oil leak at outboard pump bearing (regarding the use of the pump in decay heat mode), CR 2022-03165, during the week ending March 26, 2022
- (2) Foreign material found in reactor vessel integrated head assembly, CR 2022-02851, during the week ending March 26, 2022
- (3) Cooling tower foundation settlement, CR 2022-02411, during the week ending March 26, 2022
- (4) Snubber SNC283 discovered with no oil in reservoir, CR 2022-01703, during the week ending April 2, 2022
- (5) MS100 limit switch issue, CR 2022-01780, during the week ending April 2, 2022
- (6) 1R22 Main transformer X1 identification of broken B phase winding shield ground, CR 2022-02186, during the week ending March 19, 2022

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (1 Sample)

The inspectors evaluated the following temporary or permanent modifications:

- (1) Emergency diesel generator 2 speed switch replacement during the week ending January 22, 2022

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (5 Samples)

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

- (1) Emergency diesel generator 2 post maintenance test following installation of new speed switch during the week ending January 22, 2022
- (2) Safety features actuation system post maintenance test following installation of containment pressure power supply and bistables BA409 and BA410 during the week ending February 19, 2022
- (3) Auxiliary feedwater pump 1 functional test following scheduled maintenance during the week ending February 26, 2022
- (4) Local leak rate testing of penetration 34, containment vessel purge outlet line, following maintenance during the week ending April 2, 2022
- (5) Decay heat pump 2 following outboard bearing and seal replacement during the week ending March 26, 2022

71111.20 - Refueling and Other Outage Activities

Refueling/Other Outage Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated refueling outage 1R22 activities from March 4, 2022 through April 19, 2022

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance testing activities to verify system operability and/or functionality:

Surveillance Tests (other) (IP Section 03.01) (6 Samples)

- (1) Containment spray pump 2 quarterly test during the week ending January 15, 2022
- (2) Demineralizer filter 1-1 change during the week ending February 12, 2022
- (3) Auxiliary feedwater pump 1 quarterly test during the week ending February 26, 2022
- (4) Turbine overspeed trip test during the week ending March 5, 2022
- (5) Safety features actuation system integrated testing during the week ending March 26, 2022
- (6) Local leak rate testing of penetration 102, electrical penetration PCC5V during the week ending March 12, 2022

Inservice Testing (IP Section 03.01) (1 Sample)

- (1) Main steam safety valve testing during the week ending March 5, 2022

Containment Isolation Valve Testing (IP Section 03.01) (1 Sample)

- (1) Local leak rate testing of penetration 34, containment vessel purge outlet line during the week ending April 2, 2022

RADIATION SAFETY

71124.01 - Radiological Hazard Assessment and Exposure Controls

Radiological Hazard Assessment (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated how the licensee identifies the magnitude and extent of radiation levels and the concentrations and quantities of radioactive materials and how the licensee assesses radiological hazards

Instructions to Workers (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated how the licensee instructs workers on plant-related radiological hazards and the radiation protection requirements intended to protect workers from those hazards

Contamination and Radioactive Material Control (IP Section 03.03) (2 Samples)

The inspectors observed/evaluated the following licensee processes for monitoring and controlling contamination and radioactive material:

- (1) Licensee surveys of workers and potentially contaminated material leaving the radiologically controlled area (RCA) at the contractor's access facility control point during the Unit 1 refueling outage
- (2) Licensee surveys of workers and potentially contaminated material leaving the RCA at the main control point during the Unit 1 refueling outage

Radiological Hazards Control and Work Coverage (IP Section 03.04) (3 Samples)

The inspectors evaluated the licensee's control of radiological hazards for the following radiological work:

- (1) Movement of reactor head / plenum / core barrel and associated preparation
- (2) Incore cutting / cask transfer / post incore cutting tank decontamination
- (3) Installation / removal of once through steam generator nozzle dams and foreign material covers

High Radiation Area and Very High Radiation Area Controls (IP Section 03.05) (2 Samples)

The inspectors evaluated licensee controls of the following High Radiation Areas and Very High Radiation Areas:

- (1) Locked high radiation area barricade surrounding the Unit 1 incore tank
- (2) Locked high radiation area postings and locks on the steam generator manway shield door

Radiation Worker Performance and Radiation Protection Technician Proficiency (IP Section 03.06) (1 Sample)

- (1) The inspectors evaluated radiation worker and radiation protection technician performance as it pertains to radiation protection requirements.

71124.03 - In-Plant Airborne Radioactivity Control and Mitigation

Temporary Ventilation Systems (IP Section 03.02) (1 Sample)

The inspectors evaluated the configuration of the following temporary ventilation systems:

- (1) Temporary high efficiency particulate air [filter] (HEPA) unit supporting the stud cleaning tent

INSPECTION RESULTS

No findings were identified.

EXIT MEETINGS AND DEBRIEFS

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

- On April 28, 2022, the inspectors presented the integrated inspection results to Mr. T. Brown, Site Vice President, and other members of the licensee staff.
- On March 18, 2022, the inspectors presented the radiation protection inspection results to Mr. T. Brown, Site Vice President, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Procedures	DB-OP-06331	Freeze Protection and Electrical Heat Trace	33
		DB-OP-06913	Seasonal Plant Preparation Checklist	41
		DB-OPS-0011	Protected Equipment Posting	16
		NOP-WM-2002	Seasonal Readiness Process	0
		RA-EP-02870	Emergency Plan Off-Normal Occurrence	7
71111.04	Procedures	DB-OP-06012	Decay Heat and Low-Pressure Injection System Operating Procedure	84
		DB-OP-06261	Service Water System Operating Procedure	74
71111.05	Corrective Action Documents	2019-05984	PI 20436 Over Ranged	0
		2021-08257	EDG Room 2 Vent Fan Recirc Supply Damper Not Fully Open with Hydro-Motor De-Energized	0
	Fire Plans	PFP-AB-319	Diesel Generator 1-2 Room, Rooms 319 and 318A, Fire Area J	8
		PFP-CB-214	Core Flooding Tank Area, Room 214, Fire Area D	6
		PFP-CB-215	Let Down Coolers Area, Room 215, Fire Area D	6
		PFP-CB-216	Steam Generator West D Ring Area, Room 216, Fire Area D	6
		PFP-CB-218	Steam Generator East D Ring Area, Room 218, Fire Area D	6
		PFP-CB-317	Containment Air Cooler Area, Room 317 and 317A, Fire Area D	8
		PFP-CB-410	East Elevation 603' and Valve Room Elevation 636', Rooms 410 and 508, Fire Area D	5
		PFP-CB-A208	Southwest Penetration Area of Annulus Space Elevations 585' and 603', Partial Room 127W, Fire Area AB	8
		PFP-CB-A236H	East and Southwest Penetration Areas at Elevations 585' and 603', Partial Rooms 127W and 127W, Fire Area A and AB	8
		PFP-CB-A236L	East Penetration Area of Annulus Space Elevations 585' and 603', Partial room 127E, Fire Area A	5
		PFP-CB-EL565	North Area 565' Elevation, Rooms 213, 217 and Normal Sump Area, Fire Area D	8
PFP-CB-EL603	Fuel Transfer Pool and North and West 603' Elevation Rooms 219, 407 and 410A, Fire Area D	5		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Miscellaneous	DB-M-20220305-10	Annulus Down-Post from IHRA to RA	03/05/2022
71111.12	Corrective Action Documents	2019-04383	Multiple SFAS Channel 4 Bistables Tripped High Out of Band	0
		2022-01148	SFAS Bistable Difficult to Remove	02/15/2022
	Procedures	DB-MI-03118	Response Time Test of 59AISP2003 Containment Pressure SFAS Channel 4	12
		DB-MI-05032	Performance/Post Maintenance Test of LAMBDA/PENTAS/ACOPIAN/NJE Power Supplies	13
Work Orders	200762599	Containment Pressure High SFAS Channel 4	02/15/2022	
71111.13	Corrective Action Documents	2022-02550	Begin RCS Drain to Lowered Inventory	03/23/2022
	Miscellaneous		IR22 Shutdown Defense In-Depth Report	0
	Procedures	NOP-OP-1007	Risk Management	36
71111.15	Corrective Action Documents	2022-01703	Snubber SNC283 Discovered with no Oil in the Reservoir	03/05/2022
		2022-01780	MS100 Limit Switch Issue	03/07/2022
		2022-01936	1R22 Main Transformer Winding Shield Ground Accessibility	03/09/2022
		2022-02186	1R22 Main Transformer X1 Identification of Broken B Phase Winding Shield Ground	04/13/2022
		2022-02585	DH Pump 2 Gland Plate Nut Found Loose	04/22/2022
		2022-03165	Decay Heat Pump 2 – Oil Leak at Outboard Pump Bearing	04/10/2022
	Drawings	80C435-C	Section A-A Typical Section Across Cooling Tower Ring Footing	04/03/1984
71111.19	Corrective Action Documents	2020-01384	SFAS Channel 4 Reactor Coolant Pressure Bistables Tripping Early	0
		2020-07535	SFAS RC Pressure Lo Trip BA 404 Bistable Tripped Early	0
	Miscellaneous	DB-PF-03008	PMT 200822941	03/31/2022
	Procedures	DB-MI-03114	Channel Functional Test/Calibration of 59A-ISP2003 Containment Pressure Input to SFAS Channel 4	12
		DB-MI-05032	Performance/Post Maintenance Test of LAMBDA/PENTAS/ACOPIAN/NJE Power Supplies	13
		DB-MI-09072	SFAS Documentation for Module Testing	5
		DB-PF-03007	LLRT	1
DB-SP-03444		SFRCS Channel 1 Trip of MS100 and MS101	13	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Work Orders	DB-SP-03445	SFRCS Channel 2 Trip of MS100 and MS101	15
		200809036	EDG 2 184-Day Test	01/18/2022
		200809831	EDG 2 Monthly Test	12/19/2021
71111.20	Corrective Action Documents	ATL-2022-0311-ATA-02	Provide Copy of Reactor Undervessel Inspection	04/08/2022
		ATL-2022-0311-ATA-03	Provide Copy of Reactor Head Inspection	04/06/2022
71111.22	Miscellaneous Procedures	DB-PF-03008	PMT 200822941	03/31/2022
		DB-PF-03001	Main Steam Safety Valve Setpoint Test	10
		DB-PF-03007	LLRT	1
		DB-SC-03121	SFAS Train 2 Integrated Response Time Test	11
		DB-SP-03338	Containment Spray Train 2 Quarterly Pump and Valve Test	33
	Work Orders	200756129	Integrated SFAS Act Channel 2 Test	03/03/2020
		200761833	CAC Unit 2 Monthly Test	06/07/2021
		200762597	Containment Pressure High SFAS Channel 2 Test	01/25/2022
		200789025	Main Turbine Stop Valves	09/17/2021
		200789026	Main turbine Control Valves	09/17/2021
		200789027	Main Turbine CIV Test	09/17/2021
		200798159	CTMT Press SFAS Chanel 3 R/T Test	12/09/2021
		200800405	Emergency Feedwater Pump Quarterly Test	09/03/2021
		200804747	Emergency Ventilation System Train 2 Refueling Interval SFAS Drawdown	11/26/2021
		200809663	CS9 Forward Flow Test	01/12/2022
		200809664	CS 1531 Stroke Test FA Norm	0
		200809665	Containment Spray Pump 2 Quarterly	0
		200809985	CC1338 Stroke Test	02/10/2022
		200810110	Train 2 Stroke Valve Strokes Test	12/15/2021
		200811153	RC LP 1 PR SFAS Channel 3 R/T Test	12/02/2019
		200822233	Stroke Time Refuel Coast Down Test	03/08/2022
		200822470	Integrated SFAS ACT Channel 2 Test	03/16/2022
		200822471	Integrated SFAS Act Channel 2 Test	03/16/2022
		200822473	HP2A/2B Discharge Valve Test	03/17/2022
		200822572	Main Turbine Overspeed Trip	03/04/2022

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		200828471	SFAS O/ALL R/T Calculation Maintenance Test	05/13/2021
		200844948	MB8630 SP17B3 MSSV Test	03/02/2022
		200844949	BM8644 SP17A9 MSSV Test	03/02/2022
		200844951	BM8053 SP17B7 MSSV Test	03/02/2022
		200844952	BM8632 SP17B1 MSSV Test	03/02/2022
		200844953	BM8635 SP17B8 MSSV Test	03/02/2022
		200844954	BM8640 SP17A6 MSSV Test	03/02/2022
		200844955	BM8643 SP17B2 MSSV Test	03/02/2022
		200844956	BM8645 SP17A1 MSSV Test	03/02/2022
		200856618	SFAS O/ALL R/T Calculation Maintenance Test	12/10/2021
		200860045	Main Steam Line 2 Code Safety	02/21/2022
71124.01	Corrective Action Documents	CR-2022-01874	Personnel Contamination Event (Action Level 2)	03/08/2022
		CR-2022-01929	Personal Contamination Event – Level 3 PCE	03/09/2022
		CR-2022-02060	Positive Whole-Body Count on S/G Platform Worker	03/12/2022
	Corrective Action Documents Resulting from Inspection	CR-2022-02249	RWP 122-5114 Task 1 Needs Hold Point Revision	03/15/2022
		CR-2022-02294	4 Vendor Sealand Containers Were Not Locked	03/16/2022
	Procedures	DB-HP-01702	Transfer, Handling, and Storage of Radioactive Material	27
		NOP-OP-4702	Air Sampling and Analysis	8
	Radiation Surveys	DB-M-20220315-7	Core Barrel Lift for 10 Year ISI	03/15/2022
	Radiation Work Permits (RWPs)	122-5105	Movement of Reactor Head / Plenum / Core Barrel and Associated Preparation	0
		122-5114	Incore Cutting / Cask Transfer / Post Incore Cutting Tank Decontamination	1
		122-5114	Incore Cutting / Cask Transfer / Post Incore Cutting Tank Decontamination	2
122-5301		Installation / Removal of Once Through Steam Generator Nozzle Dams and Foreign Material Covers	0	
71152A	Corrective Action Documents	2022-00382	Fuel Handling Rollup Door – West Damage from Truck	01/18/2022

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71152S	Corrective Action Documents	2022-00880	Main Feed Pump 1 Integrated Control System Controller Abnormal Indication	02/05/2022
		2022-00881	Auxiliary Boiler Failed to Fire	02/05/2022
		2022-00883	Heater Drain Pump 1 Tripped during Downpower and was Found Rotating Backward	02/05/2022
		2022-00893	MPF 1 did Not Transfer from ICS to MDT-20 Control	02/06/2022
		2022-00900	Feedwater Transient during Rapid Shutdown	02/06/2022
		2022-00903	Letdown Pressure Spike After Initial Restoration	02/06/2022
		2022-00908	Unable to Match Incoming and Running Volts to Sync Main Generator to the Grid	02/06/2022