



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

November 25, 2019

Mr. Mark Bezilla
Site Vice President
FirstEnergy Nuclear Operating Co.
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 – DESIGN BASIS ASSURANCE
INSPECTION (PROGRAMS) INSPECTION REPORT 05000346/2019012

Dear Mr. Bezilla:

On November 20, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the Davis-Besse Nuclear Power Station and discussed the results of this inspection with Greg Michael, Director, Site Engineering 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,

/RA/

Karla K. Stodter, Chief
Engineering Branch 2
Division of Reactor Safety

Docket No. 05000346
License No. NPF-3

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV®

Letter to Mark Bezilla from Karla K. Stoedter dated November 25, 2019.

SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION – DESIGN BASIS ASSURANCE
INSPECTION (PROGRAMS) INSPECTION REPORT 05000346/2019012

DISTRIBUTION:

Jessie Quichocho
RidsNrrDorlLpl3
RidsNrrPMDavisBesse Resource
RidsNrrDrolrib Resource
Darrell Roberts
John Giessner
Jamnes Cameron
Allan Barker
DRPIII
DRSIII

ADAMS ACCESSION NUMBER: ML19329E782

<input checked="" type="checkbox"/> SUNSI Review		<input checked="" type="checkbox"/> Non-Sensitive <input type="checkbox"/> Sensitive		<input checked="" type="checkbox"/> Publicly Available <input type="checkbox"/> Non-Publicly Available	
OFFICE	RIII	RIII			
NAME	BJose:jw	KStoedter			
DATE	11/25/19	11/25/19			

OFFICIAL RECORD COPY

U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Number: 05000346

License Number: NPF-3

Report Number: 05000346/2019012

Enterprise Identifier: I-2019-012-0034

Licensee: FirstEnergy Nuclear Operating Co.

Facility: Davis-Besse Nuclear Power Station

Location: Oak Harbor, OH

Inspection Dates: October 21, 2019 to November 20, 2019

Inspectors: I. Hafeez, Reactor Inspector
B. Jose, Senior Reactor Inspector
L. Rodriguez, Reactor Inspector

Approved By: Karla K. Stoedter, Chief
Engineering Branch 2
Division of Reactor Safety

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a design basis assurance inspection (programs) 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.

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 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

71111.21N - Design Bases Assurance Inspection (Programs)

Select Sample Components to Review - Risk Significant/Low Design (Inside/Outside Containment) (IP Section 02.01) (8 Samples)

- (1) SV100A; Main Steam Line #2 Isolation Valve Solenoid
- (2) ZC6451; Auxiliary Feedwater Pump #2 Discharge Flow Control Valve Position Controller
- (3) EV5889A; Terminal Block Box for SV5889A
- (4) MP42-1; Motor for Decay Heat Pump #1
- (5) BF11A; 480 V Motor Control Center
- (6) BE1157; Breaker for Borated Water Storage Tank Outlet Line #1 Valve DH7B
- (7) BF1139TD; Time Delay Relay for High Pressure Injection Line #2 to #1 Isolation Valve HP2A
- (8) Power Cables B24, B25, BF4 and BF6

Select Sample Components to Review - Primary Containment (Inside Containment) (IP Section 02.01) (1 Sample)

- (1) HVRC11; Power Operated Relief Valve Block Valve RC11 Operator

INSPECTION RESULTS

No findings were identified.

EXIT MEETINGS AND DEBRIEFS

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

- On November 20, 2019, the inspectors presented the design basis assurance inspection (programs) inspection results to Greg Michael, Director, Site Engineering and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.21N	Calculations	1040-037-081	Thermal and Radiation Analysis for Stanwick Terminal Blocks	0
		C-ECS-050.03-001	Thermal Lag Analysis for the Target Rock Electronic Control Modules (ECMs) in Auxiliary Feed Water (AFW) Pump Rooms 237 and 238	0
		C-ECS-207.10-001	Qualified Thermal Life of Various Equipment	2
		C-EE-006.001-030	Motor Control Center (MCC) Fuse Selection	0
	Corrective Action Documents	ATA-2018-11546	DCR DB-PF-09301	05/18/2018
		ATL-2018-0961-ATA-53	Motor Operated Valve (MOV) Grease Grading	08/14/2019
		CR-10-79893	Cold Solder Joints Discovered on Control Board	07/19/2010
		CR-10-79897	While Performing DB-MI-03658 Found Ripple Voltage Out of Desired Range	07/20/2010
		CR-2002-04804	Discolored Circuit Board for ZC6451	08/17/2002
		CR-2004-04561	Westinghouse Technical Bulletin TB04-13	07/16/2004
		CR-2005-02728	Labeling Fuses "EQ" When the Fuses are Not Qualified to 10CFR50.49	05/12/2005
		CR-2006-01382	BF1260 PM Performed Past Late Date	03/27/2006
		CR-2007-26552	Norm-ER-3103-D Rev.3 Does not Indicate Replacement Frequency	09/12/2007
		CR-2008-33671	Breaker for BF2142 is More Than 20 Years Old	01/17/2008
		CR-2008-33948	Concern Over Use of 20-Year-Old Molded Case Breakers	01/21/2008
		CR-2009-52750	Westinghouse Technical Bulletin Breaker Life Shorter Than in Environmental Qualification (EQ) Program	01/29/2009
		CR-2009-57013	BF1260 NRC PI&R 2009: CR 04-04561, Westinghouse TB-04-13 Circuit Breaker Evaluation and Actions Preventive Maintenance (PM) Performed Past Late Date	04/09/2009
		CR-2010-78416	AF 6451 Issue During AFW Train #2 Flowpath Verification DB-SP-03164	06/17/2010
		CR-2010-85058	NRC-NCV Molded Case Circuit Breakers that Exceed their	10/28/2010

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Qualified Life	
		CR-2011-04831	Found Excessive Ripple Voltage on ZC6451 Control Board Under DB-MI-03658	11/03/2011
		CR-2012-14886	Extension of CA-2009-57013-32	09/12/2012
		CR-2015-15705	Stock Code 100074753 Qualification Status	11/18/2015
		CR-2018-06557	Schedule Challenges Implementation of Target Rock Converters	07/23/2018
		CR-2018-08408	Heat Rise from Hot Process Fluids Impact on EQ Equipment	09/24/2018
		CR-2019-07040	Raychem WCSF-115-N Shrinkage/Recovery is Greater Than Expected, With EQ Implications	08/22/2019
		CR-G201-2010-79809	AF6451 Found Filed Open and De-Energized	07/17/2010
		CR-G201-2010-81273	Past Operability Review of AFW Positioner ZC6451	08/16/2010
	Corrective Action Documents Resulting from Inspection	CR-2019-08928	2019 NRC EQ DBAI Duratek Skid Discharge Hose Concern	10/25/2019
		CR-2019-09108	2019 NRC EQ DBAI RFI # 034 Revised	10/30/2019
		CR-2019-09441	NRC EQ DBAI 2019: Stock Codes and Procurement Information not Updated for Use on EQ SSCs	11/07/2019
		CR-2019-09442	NRC EQ DBAI 2019: Past Occurrence of Refurbished Controller Installed in Environmentally Qualified Systems Structures and Components (SSCs) without Reassessment of Qualified Life	11/07/2019
		CR-2019-09444	2019 NRC EQ DBAI Target Rock Controller Qualification	11/07/2019
		CR-2019-09453	NRC EQ DBAI 2019: Need Clarification on Effect of Shelf Life on Qualified Life for Electrolytic Capacitors for Target Rock Controllers	11/07/2019
	Drawings	E-1 Sh.2	Alternating Current (AC) Electrical System One Line Diagram	89
		E-1039	Davis-Besse Nuclear Power Station - EQ Master Report	22
		E-4 Sh-2	"F" Buses 480 V Unit Substations One-Line Diagram	50
		E-4 Sh-4	480V Unit Sub-Station Lighting Distribution One Line Diagram	53
		E-6 Sh-2	480 Vac One Line Diagram	99
		E-9	240 Vac and 120 Vac MCC's (Essential) One-Line Diagram	18
		E52B SH 26B	Reactor Cooling System High Pressure (HP) Injection Line	5

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Valves	
		E52B SH-19A	Reactor Cooling System Borated Water Storage Tank (BWST) Outlet Valve.	17
		E52B SH-19C	Reactor Cooling System Containment Emergency Sump and BWST Outlet Valve.	13
		E52B SH26A	Reactor Cooling System HP Injection Line Valve	17
		M-006D	Auxiliary Feedwater System	60
		OS-004SH-1	Operational Schematic Decay Heat Removal/ Low Pressure Injection System	61
		WD-6	Westinghouse Electric Company Control Center Wiring Diagram	T9
	Engineering Changes	ECR 02-0627-00	Environmental Qualification of the Connections/Terminations of AFW System Equipment in Rooms 236, 237 and 238	5
		EWR-02-0236-00	Refurbish Motor MVRC11 for Pressurizer Power Operated Relief Valve (PORV) Isolation Valve RC11	0
		MOD 94-0009	Modification to the Miscellaneous Liquid Radwaste System Duratek Skid	0
		TM 90-0027	Temporary Modification to Provide Design Verification of Duratek Skid Hoses	06/26/1990
	Engineering Evaluations	DB1-023A	Environmental Qualification Binder for Kerite Power and Control Cables	7
		DB1-032	Environmental Qualification Binder for Stanwick Terminal Blocks	11
		DB1-036C	Environmental Qualification Binder for Large Pump Motors	8
		DB1-100	Environmental Conditions	13
		EQP: DB1-004C	Davis-Besse Nuclear Power Station Unit 1 Environmental Qualification of Electrical Equipment - ASCO - Solenoid Valve	14
		EQP: DB1-004D	Davis-Besse Nuclear Power Station Unit 1 - Environmental Qualification of Electrical Equipment - AVCO - U02 Series - Solenoid Valve	0
		EQP: DB1-037B	Davis-Besse Nuclear Power Station Unit 1 Environmental Qualification of Electrical Equipment - Limitorque - SMB-00, SMB-000 - Valve Actuators	13

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		EQP: DB1-037G	Davis-Besse Nuclear Power Station Unit 1 Environmental Qualification of Electrical Equipment - Limitorque - Fibrite Electrical Insulating Material	7
		EQP: DB1-037H	Davis-Besse Nuclear Power Station Unit 1 Environmental Qualification of Electrical Equipment - Schulz Electric Company - Harsh Environment Random Wound Insulation Systems	5
		EQP: DB1-055B	Davis-Besse Nuclear Power Station Unit 1 Environmental Qualification of Electrical Equipment - Crompton Corporation - MOV Long Life Grease - Lubricants and Greases	4
		EQP: DB1-084	Davis-Besse Nuclear Power Station Unit 1 Environmental Qualification of Electrical Equipment - Target Rock - Solenoid Valve, Valve Position Control Center	2
	Miscellaneous	4714A	Qualification Analysis Report - Valve Models 87J-001, 87J-002 - Solenoid Operated Globe Valves	A
		DB1-101	EQ Master List (EQML)	6
		E-008-00154	Instruction and Maintenance Manual for Motor Control Center 44692	10/2014
		E-008Q-00029	Westinghouse Instruction and Maintenance Manual for Five Star Motor Control Centers	04/2011
		PM5872	ZC6451 Replacement of Circuit Boards	11/06/2019
	Procedures	12477-CCR-O	Certificate of Conformance and Elevated Temperature Test Report for Class 1E Nuclear Safety Related Motor Control Centers	01/20/1986
		DB-ME-09100	Maintenance of Motor Control Centers	16
		DB-ME-09114	Molded Case Breaker Inspection and Test	27
		DB-MI-03658	Channel Calibration of 63A-ISLSP09A3-1 Steam Generator 2 Start-Up Level Control	23
		DB-MI-09009	Maintenance of ASCO Solenoid Valves	3
		DB-OP-06226	Startup Feed Pump Operating Procedure	17
		DB-OP-06233	Auxiliary Feedwater System	45
		DB-PF-09301	Preventive Maintenance for Type SMB and SB Limitorque Operators	9
		DB1-001A	Environmental Qualification Binder for Amerace	4

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			(Agastat/Tyco) E7000 Series Agastat Time Delay Relays	
		DB1-036A	Environmental Qualification Binder for Westinghouse Electric Corp Type W and Type Five Star MCC	4
		DB1-036D	Environmental Qualification Binder for Westinghouse Electric Corp HFB Spare Circuit Breakers and Other Miscellaneous Items for MCCs	3
		DB1-036H	Environmental Qualification Binder for Cutler Hammer HFD,HFD3175 Replacement Molded Case Circuit Breakers for Motor Control Centers	3
		NOBP-CC-7004	Shelf Life Evaluation	2
		NOBP-MS-2005	Nuclear Warehousing	10
		NOP-MS-4001	Warehousing	12
		NORM-ER-3107	First Energy Nuclear Operating Company (FENOC) Power Fuses	2
	Self-Assessments	SA-BN-2019-1342	Davis-Besse 2019 Pre-NRC Environmental Qualification Design Bases Assurance Inspection	0
	Work Orders	200002532	ZC6451: Replace Circuit Board	06/24/2003
		200295297	ECP 08-0026-00 MVR11 - Splice Cables	01/22/2008
		200415169	Troubleshoot/ Repair/ Replace Components for FV6451	05/11/2010
		200420441	Troubleshoot/ Repair/ Replace Components for FV6451	06/20/2010
		200423484	PM 3923 SV100A *RPLC* MN STM LN #2	12/03/2011
		200424235	Troubleshoot/ Repair/ Replace Components for FV6451	07/20/2010
		200424614	Inspect Fuses, F1 and F2, at ZC6451, ZC6452, ZC6460 and ZC6459	07/21/2010
		200424712	Calibrate Target Rock Circuit Boards ZC6451 and LY6451K.	07/29/2010
		200429526	Inspect Fuses, F1 and F2, at ZC6451, ZC6452, ZC6460 and ZC6459	09/03/2010
		200449014	Inspect Fuses ZC6451, ZC6460, ZC6459, and/or ZC6452	02/22/2011
		200481399	DB-ZC6451: Troubleshoot/Replace Controller	11/02/2011
		200496999	Inspect Fuses ZC6451, ZC6460, ZC6459, and/or ZC6452	03/22/2012
		200540152	DB-ZC6451: Replace Controller	01/30/2013
		200606820	PM 0042 MVR11 Inspect Pressurizer Relief Valve #1	03/31/2016
		200607054	PM 3923 SV100A *RPLC* MN STM LN #2	05/27/2016

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		200607515	PM 1696 AF70 Check AFPT Room Flood Valve	05/25/2016
		200612699	SP3444-001 05.000 SFRCS Chanel #1 Trip Test	05/06/2016
		200612700	SP3445-001 05.000 SFRCS Chanel #2 Trip 100/101	05/06/2016
		200635681	DB-Sub049-02 Decay Heat and Low Pressure Injection	02/28/2019
		200636203	Measure Ripple/ Noise Content ZC6451, ZC6452, ZC6459, ZC6460	04/04/2016
		200648167	Inspect Fuses for Target Rock Controllers: ZC6451/6460/6459/6452	07/20/2015
		200687804	PM 0042 MVRC11 Inspect Pressurizer Relief Valve #1	03/11/2018
		200687805	PM 4878 MVRC11 Replace Limit and Torque Switches	03/14/2018
		200715962	PF3811-001 05.100 Train 1 Stroke	05/02/2019
		200726407	PF3811-001 05.100 Train 1 Stroke	07/26/2019