UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, ILLINOIS 60532-4352

February 9, 2022

Mr. Michael Strope
Site Vice President
NextEra Energy Point Beach, LLC
6610 Nuclear Road
Two Rivers, WI 54241-9516

SUBJECT: POINT BEACH NUCLEAR PLANT – DESIGN BASIS ASSURANCE INSPECTION (PROGRAMS) INSPECTION REPORT 05000266/2022010 AND 05000301/2022010

Dear Mr. Strope:

On February 3, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Point Beach Nuclear Plant and discussed the results of this inspection with Mr. M. Holzmann, Site Operations Director 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,

Signed by Stoedter, Karla
on 02/09/22

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

Docket Nos. 05000266 and 05000301
License Nos. DPR-24 and DPR-27

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV®

Letter to Michael Strope from Karla K. Stoedter dated February 9, 2022.

SUBJECT: POINT BEACH NUCLEAR PLANT – DESIGN BASIS ASSURANCE INSPECTION (PROGRAMS) INSPECTION REPORT 05000266/2022010 AND 05000301/2022010

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Numbers:	05000266 and 05000301
License Numbers:	DPR-24 and DPR-27
Report Numbers:	05000266/2022010 and 05000301/2022010
Enterprise Identifier:	I-2022-010-0017
Licensee:	Nextera Energy Point Beach, LLC
Facility:	Point Beach Nuclear Plant
Location:	Two Rivers, WI
Inspection Dates:	January 10, 2022 to February 03, 2022
Inspectors:	K. Barclay, Reactor Inspector J. Benjamin, Senior Reactor Inspector B. Jose, Senior 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 Point Beach Nuclear Plant, 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
URI	05000266,05000301/ 2022010-01	Potential Inadequate Basis/Justification for Motor-Operated Valve Rate-of-Loading Assumptions	71111.21N.02	Open

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.02 - Design-Basis Capability of Power-Operated Valves Under 10 CFR 50.55a Requirements

POV Review (IP Section 03) (8 Samples)

The inspectors:

a. Determined whether the sampled power operated valves (POVs) are being tested and maintained in accordance with NRC regulations along with the licensee's commitments and/or licensing bases.
b. Determined whether the sampled POVs are capable of performing their design-basis functions.
c. Determined whether testing of the sampled POVs is adequate to demonstrate the capability of the POVs to perform their safety functions under design-basis conditions.
d. Evaluated maintenance activities including a walkdown of the sampled POVs (if accessible).

(1) 1SI-00866B; Safety Injection (SI) Pump 1P-15 Discharge to Reactor Coolant System (RCS) Cold Leg Motor Operated Valve (MOV)
(2) 1SI-00851A; Residual Heat Removal (RHR) Pump P-10A Suction from Containment Sump B MOV
(3) 2SI-00850A; Unit 2 RHR Pump 10A Suction from Containment Sump B Hydraulically Operated Valve (HOV)
(4) 2AF-04002; Turbine Driven Auxiliary Feedwater (TDAFW) Pump 2P-29 Recirculation Flow Control Air Operated Valve (AOV)
(5) 1AF-04000; AFW Pump 1P-29 Discharge to Steam Generator 1B, Heat Exchanger Inlet Isolation MOV
(6) 2RC-00430; T-1 Pressurizer Power Operated Relief AOV
(7) 2SI-00860A; Unit 2 Containment Spray Pump P-14A Discharge MOV
(8) 2SI-00852B; Unit 2 Low Head SI Core Deluge Isolation MOV

INSPECTION RESULTS

Unresolved Item (Open)	Potential Inadequate Basis/Justification for Motor-Operated Valve Rate-of-Loading Assumptions URI 05000266,05000301/2022010-01	71111.21 N.02

Description:

During the inspection of MOV 1AF-4000, a discharge valve associated with the 1P-29 turbine-driven auxiliary feedwater pump, an Unresolved Item was identified.

During the review of calculation 2003-0014, “MOV Operating Parameters,” the inspectors found the rate of loading (ROL) value assigned to valve 1AF-4000 was zero. The inspectors questioned the low ROL value and reviewed the supporting reference, licensee internal correspondence PBM 92-1200, "Rate of Loading/Stem-To-Stem Nut Coefficient of Friction,” dated October 7, 1992. The inspectors and NRC MOV subject matter experts from the Office of Nuclear Reactor Regulation found the licensee’s methodology for incorporating the ROL effects into their MOV program was not consistent with existing industry methods.

A review of correspondence between the NRC and the licensee found that the Agency’s concern with ensuring proper validation of the ROL methodology dated back to the inspection and closeout of NRC Generic Letter (GL) 89-10, “Safety-Related Motor-Operated Valve Testing and Surveillance,” and GL 96-05, “Periodic Verification of Design-Basis Capability of Safety-Related Motor-Operated Valves.”

NRC Inspection Report 50-266/95007 (DRS); 50-301/95007 (DRS), dated July 13, 1995, which inspected the licensee’s response to GL 89-10, stated, “The licensee developed a method to predict the effects of rate of loading for valves without a dynamic test; however, in-plant test data was inconclusive to fully support the method. Based on dp [differential pressure] test results, the method used plots taken during static testing which correlated torque from the stem thrust versus spring pack deflection. The inspectors encouraged the licensee to continue their research but were concerned with the inconclusive data from the valves that had been tested and the lack of data used to verify the method. The licensee committed to continue to compile data from periodic verification tests, both static and dynamic, to validate the rate of loading assumptions and prediction methodology.”

On March 17, 1997, the licensee submitted a letter titled, "Response to NRC Generic Letter 96-05 Periodic Verification of Design-Basis Capability of Safety-Related Motor-Operated Valves," to the NRC. This letter stated, in part, “NRC Inspection Reports 50-266/95007 (DRS) and 50-301/95007 (DRS), dated July 13,1995, document our commitments in response to the GL 89-10 closeout inspection items. As documented in this report, the following commitments were made and will be completed within five years of that inspection report:”, “3. We will collect and trend further static and dynamic periodic results to validate the valve factor study and rate of loading assumptions and prediction methodology.”

NRC Inspection Reports 50-266/99012 (DRS) and 50-301/99012 (DRS), dated July 14, 1999, which inspected the licensee’s response to GL 96-05, stated, “The inspectors reviewed the status of the long-term MOV actions planned following completion of GL 89-10 close-out inspection. In particular, the licensee had not completed the overall review of the assumptions for valve factor and load sensitive behavior because of the limited progress made in performing dynamic testing as part of the long-term MOV program.” The report stated further, “With respect to the long-term GL 89-10 issues, the licensee had not adhered to its efforts to

implement planned dynamic tests, to perform an overall evaluation of program assumptions for valve factor or load sensitive behavior, or to perform qualitative and quantitative trending of MOV performance."

The inspectors requested the information and data used to validate the ROL assumptions and prediction methodology. The licensee found historical MOV program trend reports that stated there were no valves identified that exhibited rate-of-loading effects; however, the licensee was unable to locate formal documentation detailing the methods used to make these determinations or details of the test data evaluations that validated the rate-of-loading assumptions and predication methodology.

Planned Closure Actions: The inspectors need to review the data, methodology and results of the licensee's rate-of-loading study to determine if assigning a ROL value of zero is appropriate and whether a performance deficiency exists.

Licensee Actions: The licensee entered the issue into their Corrective Action Program (CAP) and created an initial corrective action to perform a Rate-of-Loading (ROL) study to document the basis for the ROL assumptions in calculation 2003-0014. Additionally, the licensee applied an MOV margin penalty to support a reasonable assurance of operability while the ROL study is being performed.

Corrective Action References: AR 2417688; 2022 POV Inspection - Calc 2003-0014 RE. MOV Rate of Loading

EXIT MEETINGS AND DEBRIEFS

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

- On February 3, 2022, the inspectors presented the design basis assurance inspection (programs) inspection results to Mr. M. Holzmann, Site Operations Director and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.21N.02	Calculations	01109-C-005	Auxiliary Feedwater (AFW) Air Operated Valve (AOV) Functional and Maximum Expected Differential Pressure (MEDP) Calculation	1
		01109-C-018	AOV Component Level Calculation; 0AF-04007, 0AF-04014, 1AF-04002, and 2AF-04002	1
		2001-0056	Turbine Driven Auxiliary Feedwater Pump (TDAFP) Mini-Recirculation Valve (1/2AF-4002) Instrument Air Accumulator Sizing	5
		2003-0014	Motor Operated Valve (MOV) Operating Parameters, Group 15	8
		2004-0002	Alternating Current (AC) Electrical System Analysis	6
		97-0041	Functional Times for Emergency Safeguards Equipment to Be Used in Point Beach Accident Analysis	3
		N-93-086	1 (2) AF-4000, AF-4001 (Group 30) MOV Differential Pressure Calculation	0 & 0A
		N-94-019	Determination of Conditions for MOV Pressure Locking and Thermal Binding	04/13/1994
		P-89-031	Voltage Drop Across MOV Power Lines	13
		P-90-017	MOV Undervoltage Stem Thrust and Torque	23
		P-94-004	MOV Thermal Overload Evaluation	14
		P-94-004; EC 294777 Pending Change A	MOV Overload Heater Evaluation	14
		P-94-005	Motor Stem Thrust Calculation	11
		Powell 01-12-1988	Maximum Thrust Calculations - Point Beach Nuclear Plant (Wisconsin Electric)	01/12/1988
	Corrective Action Documents	AR 2231511	1SI866B Overthrust Event	11/17/2017
	Corrective Action Documents Resulting from Inspection	AR 2416029	Alarm Response Book (ARB) for 2RC-0430, Low Temperature Over Pressure (LTOP) Defined Incorrectly	01/13/2022
		AR 2416280	Calculation P-94-005, Use of Torque Reaction Factor Inversed	01/17/2022

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		AR 2416353	1SI-866B 2017 as Left Test Review, as Left Close Thrust Below Minimum Required and No Evaluation Performed	01/18/2022
		AR 2416888	The Work Plan for Work Order 4072625-03 Step 5 Directs Performer to Circle the PMT Done of Two Listed and None Circled	01/24/2022
		AR 2416904	Work Order Documentation for 1AF-04000; RMP9376-2 for 03/09/2010 Recorded 180 Foot Pounds for Mounting Bolts Instead of 88 Foot Pounds	01/24/2022
		AR 2416916	MOV Design Basis Review of Valve Family 30 Shows Medium Risk Vs. Actual Low Risk	01/24/2022
		AR 2416967	Drawing Discrepancy; Stem Speed for 1/2AF-04000 Shown as 4.21 Inches/Minute Vs 7.375 Inches/Minute	01/252022
		AR 2416984	Training Work Request Written Against Operations Procedure OM 3.20 to Remind Operators that 24 Demand Valves Have No Seal-In Contacts, Therefore Hold the Control Switch until Full Open/Close	01/25/2022
		AR 2416997	Model Number for New Solenoid 2AF-4002-S Not Updated in Component Database	01/25/2022
		AR 2417022	Criterion Error in MOV Test Software	01/25/2022
		AR 2417028	Air Operated Valve (AOV) Trending Spread Sheet Error, Close Thrust for AOV 2AF-04002 Listed as 4180 Pounds Vs 4039 Pounds	01/25/2022
		AR 2417137	Validate 2AF-04002 Spring Parameters	01/26/2022
		AR 2417139	No Evaluation for 2011 and 2017 AOV Test Spring Rate Found Below Acceptance Criteria	01/26/2022
		AR 2417419	Documentation Provided to NRC in Request for Information 1.17 for 1AF-4000 Was Medium Risk Vs Actual Low Risk	01/28/2022
		AR 2417688	2022 Power Operated Valve (POV) Inspection, Calculation 2003-0014 MOV Rate of Loading	02/01/2022
	Drawings	499B466 Sheet 1801	Elementary Wiring Diagram Turbine Driven Auxiliary Feedwater Pump Discharge 1AF-4000	0
		499B466 Sheet 868	Elementary Wiring Diagram Steam to TDAFP 2MS2020	24

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		499B466 Sheet 869	Elementary Wiring Diagram Turbine Driven Auxiliary Feedwater Pump Mini Recirculation Control Valve 2AF-4002	14
		M-217 Sheet 1	Piping & Instrumentation Diagram (P&ID) Auxiliary Feedwater System	107
		WM Powell Sheet 035115	FIG 19051WE 3" - 900 Pound "Y" Globe Valve	02/26/1968
	Engineering Changes	EC 11683	Modification for Flow Control to Prevent Residual Heat Removal (RHR) Pump Excessive Flow with Containment Spray Aligned during Recirculation Phase	3
		EC 292094	Replace 1(2) DPIS-4002, DPIS-4007, DPIS-4014 Differential Pressure Indicator Switches	5
	Engineering Evaluations	EQCK-LIMIT-001	Environmental Qualification (EQ) Assessment of Limitorque SMB Valve Actuators with H/RH Motor Insulation	4
		PE 433789	Item Equivalency Evaluation; ASCO Valve Part Number NPEF8300141EF	0
	Miscellaneous		AOV Margin Review Worksheet; 2AF-04002; Last Valve Test Data: March 31, 2017	0 & 1
			NRC Request for Information 1.17: Point Beach Power Operated Valve (POV) Data Submittal	
		01108-TR-003	Nuclear Management Company Air Operated Valve Program Calculation Guideline	1
		AR 1901191	Operating Experience Evaluation Form; NRC Information Notice 2013-14: Potential Design Deficiency in Motor-Operated Valve Control Circuitry	10/11/2013
		Group 30 AF-4000	Individual MOV Periodic Verification Report	06/06/2007
		IST Appendix B	Inservice Testing Program Valve Relief Requests	2
		IST Appendix F	Inservice Testing Program Technical Positions	12
		IST Program Document	Point Beach Nuclear Plant (PBNP) Inservice Testing Program 5th Interval	9
		IST Program Table - AF	Inservice Testing Program Table - AF	8

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		NRC-92-085	Letter from Wisconsin Electric Power Company to U.S. NRC; Dockets 50-266 and 50-301 In-Service Testing Pump and Valve Program Third 10-Year Program Safety Evaluation Report Point Beach Nuclear Plant, Units 1 and 2	07/30/1992
		PBM 92-1200	Rate of Loading / Stem-To-Stem Nut Coefficient of Friction Evaluation	10/07/1992
		Specification 6118-M-91	Motor Operated Valves	2
	Procedures	2-PT-AF-3	2P-29 Turbine-Driven AFW Pump Backup Air System Pressure Decay Test (Refueling) Unit 2	12
		ARB 2C042C4-11	ARB, 2RC-0430 or 0431C Pressurizer Power Operated Relief Valve (PORV) Not Shut	5
		CMP 2.2	Motor Operated Valves	9
		CMP 2.2.1	Determination of the Set-Up Parameters for Motor Operators	2
		CMP 2.2.16	Joint Owners Group (JOG) Periodic Verification (PV) Classification	1
		CMP 2.2.2	Design Basis Review of Valves Driven by Motor Operators	2
		CMP 2.2.6	Analysis of Test Signatures Taken during Differential Pressure (DP) Test	2
		CMP 2.2.8.18	MOV Design Basis Review for Valve Family 18	4
		CMP 2.2.8.30	MOV Design Basis Review for Valve Family 30	5
		CMP 2.2.9	MOV Overthrust/Overtorque Review Guidance	0
		CMP 2.5	Point Beach Nuclear Plant AOV Program Document	5
		CMP 2.5.1	Point Beach AOV Scoping Methodology	2
		CMP 2.5.2	Setup Parameters for Air Operated Valves	2
		CMP 2.5.2.1	Setup Parameters for Category 1 Air Operated Valves	15
		EC 13398	Repower Valves for TDAFW PUMP 1P-29	0
		ER-AA-100	Air Operated Valve Program	4
		ER-AA-100-1000	Air Operated Valve Program Implementation	0
		ER-AA-100-1001	AOV Design Basis Review	3
		ER-AA-103	In-Service Test (IST) Program	3
		IT 08A	Cold Start of Turbine-Driven Auxiliary Feedwater Pump	86

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			and Valve Test (Quarterly) Unit 1	
		IT 09A	Cold Start of Turbine-Driven Auxiliary Feedwater Pump and Valve Test (Quarterly) Unit 2	77
		MA-AA-100-1014	Limitorque MOV Testing and Actuator Inspections	6
		MA-AA-100-1021	Motor Operated Valve Stem Lube and Actuator Gearbox Grease Inspection	1
		OI 128	Safety Injection (SI) System Fill and Vent Unit 1	21
		OM 3.20	MOV/AOV/Manual Valve Operating Requirements	19
		RMP 9141	Air-Operated Valve Testing and Adjustment	19
	Work Orders	00219460 03	SI-00850-0 Inspection/Rebuild	10/10/2006
		366848	MOV Actuator Check-Out	03/28/2010
		366848	RMP 9376-2 Limitorque MOV Static/DP Testing for Gate and Globe Valves	03/09/2010
		383027 01	MCTW-141 Calibration	08/24/2010
		389729	2AF-04002-O / Replace Actuator Base Capscrews	06/17/2011
		40208015	2AF-4002-S - Replace Solenoid Valve	04/05/2014
		40253633	1AF-04000-O – Valve Stem Clean & Lubricate	10/19/2014
		40418959	2AF-04002 / Minor Air Leak Around Diaphragm	05/10/2017
		40453229	2AF-4002-O – Diagnostic Check	04/20/2017
		40543620	Diagnostic Test Valve 2SI-00852B	10/15/2018
		40543723	2SI-00852B; Stem Lube and Actuator Gear Box Grease Replacement	01/24/2019
		40573109	1AF-04000-O – MOV Actuator Check-Out	04/26/2019
		40573109 02	1AF-04000-O / OPS RTS-PMT	04/11/2019
		40573198	1AF-04000-O / Stem Lube & Actuator Gearbox Grease	04/11/2019
		40644388	2RC-00430 - Rebuild Valve Actuator	04/30/2020
		40693383 01	1AF-04000-O; Clean and Inspect Torque Switch Contacts	10/18/2020
		40693383 02	1AF-04000-O: OPS RTS-PMT	10/19/2020
		40706080	1AF-04002-O/Replace Air Supply Hose	05/26/2020
		40726250	2AF-4002-S – Replace Solenoid Valve	10/13/2021
		40726905	2SI-00860A MOV Actuator Diagnostics and Inspections	10/31/2021
		40726906	2SI-00860A MOV Stem Lube and Gear Box Grease Inspections	11/30/2021

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		9925456-001	Perform Actuator Refurbishment Every 15 Years per Environmental Qualification Maintenance Request (EQMR)	11/09/2000
		WO 00354830	1SI-0086B Repack Valve	09/15/2018
		WO 0215178	SI-00851A MOV Actuator Checkout	04/01/2004
		WO 0387601	1SI-00866B Valve Stem Clean and Lube	02/11/2013
		WO 40472723 03	SI-00866B-O Actuator Checkout - Inspection and Test	10/07/2017
		WO 9948609	MOV Actuator Checkout	10/01/2002