



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION I
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PENNSYLVANIA 19406-2713

March 22, 2022

Mr. Bob Coffey
Executive Vice President, Nuclear and
Chief Nuclear Officer
Florida Power & Light Company
700 Universe Blvd.
Mail Stop: EX/JB
Juno Beach, FL 33408

SUBJECT: SEABROOK STATION – DESIGN BASIS ASSURANCE INSPECTION (TEAMS)
INSPECTION REPORT 05000443/2022011

Dear Mr. Coffey:

On February 10, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Seabrook Station and discussed the results of this inspection with Mr. Brian Booth, Site Vice President 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,

Mel Gray, Chief
Engineering Branch 1
Division of Operating Reactor Safety

Docket No. 05000443
License No. NPF-86

Enclosure:
As stated

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SUBJECT: SEABROOK STATION – DESIGN BASIS ASSURANCE INSPECTION (TEAMS)
INSPECTION REPORT 05000443/2022011 DATED MARCH 22, 2022

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

Docket Number: 05000443

License Number: NPF-86

Report Number: 05000443/2022011

Enterprise Identifier: I-2022-011-0011

Licensee: NextEra Energy Seabrook, LLC

Facility: Seabrook Station

Location: Seabrook, NH

Inspection Dates: January 23, 2022 to February 10, 2022

Inspectors: C. Bickett, Senior Reactor Inspector
P. Cataldo, Senior Reactor Inspector
K. Mangan, Senior Reactor Inspector
B. Pinson, Reactor Inspector
M. Rossi, Resident Inspector
A. Turilin, Reactor Inspector

Approved By: Mel Gray, Chief
Engineering Branch 1
Division of Operating Reactor Safety

Enclosure

SUMMARY

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

71111.21M - Design Bases Assurance Inspection (Teams)

The inspectors evaluated the following components and listed applicable attributes, permanent modifications, and operating experience:

Design Review - Risk-Significant/Low Design Margin Components (IP Section 02.02) (4 Samples)

- (1) 480V BUS E62, 1-EDE-US-62
 - Material condition and installed configuration (e.g., visual inspection/walkdown)
 - Normal, abnormal, and emergency operating procedures
 - Consistency among design and licensing bases and other documents/procedures
 - System health report, maintenance records, and corrective action history
 - Equipment/environmental controls and qualification
 - Adequacy of design (calculations and modifications)
 - Surveillance testing and test results
 - System and component level performance monitoring
 - Equipment protection from fire, flood, steam, water intrusion, or spray
 - Control logic
 - Contactor and fuse ratings
 - Component adequacy for minimum voltage
 - Protection coordination (load in-rush and full load current)
 - Range, accuracy, and setpoint of installed instrumentation
 - Operator actions
 - Process medium availability (electrical signal)
 - Energy source availability (electricity)

The team used Appendix B guidance for *Switchgear and Motor Control Centers*.

- (2) Start-Up Feed Pump, 1-FW-P-113
 - Material condition and installed configuration (e.g., visual inspection/walkdown)
 - Normal, abnormal, and emergency operating procedures

- Consistency among design and licensing bases and other documents/procedures
- System health report, maintenance records, and corrective action history
- Equipment/environmental controls and qualification
- Adequacy of design (calculations and modifications)
- Surveillance testing and test results
- System and component level performance monitoring
- Heat removal cooling water and ventilation
- Operator actions
- Process medium availability (water, air, electrical signal)
- Energy source availability (electricity, steam, fuel, air)

The team used Appendix B guidance for *Pumps*.

- (3) “A” Service Water Pump, P-41A
- Material condition and installed configuration (e.g., visual inspection/walkdown)
 - Normal, abnormal, and emergency operating procedures
 - Consistency among design and licensing bases and other documents/procedures
 - System health report, maintenance records, and corrective action history
 - Adequacy of design (calculations and modifications)
 - Surveillance testing and test results
 - System and component level performance monitoring
 - Equipment protection from fire, flood, steam, water intrusion, or spray
 - Heat removal ventilation
 - Control logic
 - Component adequacy for minimum voltage
 - Range, accuracy, and setpoint of installed instrumentation
 - Operator actions
 - Process medium availability (water)
 - Energy source availability (electricity)

The team used Appendix B guidance for *Pumps*.

- (4) PCCW Train B Heat Exchanger, 1-CC-E-17-B
- Material condition and installed configuration (e.g., visual inspection/walkdown)
 - Consistency among design and licensing bases and other documents/procedures
 - Adequacy of design (calculations and modifications)
 - System and component level performance monitoring
 - Heat removal cooling water and ventilation
 - Process medium availability (water, air)

The team used Appendix B guidance for *As Built Systems*.

Design Review - Large Early Release Frequency (LERFs) (IP Section 02.02) (1 Sample)

- (1) RHR ventilation dampers, 1-EAH-FN-31A
 - Energy source availability (electricity, steam, fuel, air)
 - Operator Actions
 - Normal, abnormal, and emergency operating procedures
 - Control logic
 - Component adequacy for minimum voltage
 - Range, accuracy, and setpoint of installed instrumentation
 - Adequacy of design (calculations and modifications)
 - Material condition and installed configuration (e.g., visual inspection/walkdown)
 - System health report, maintenance records, and corrective action history
 - Consistency among design and licensing bases and other documents/procedures
 - System and component level performance monitoring
 - Surveillance testing and test results
 - Equipment/environmental controls and qualification
 - Heat removal cooling water and ventilation

The team used Appendix B guidance for *Electrical Motors, Fans, and EQ Splices/Maintenance/Surveillance Requirements*.

Modification Review - Permanent Mods (IP Section 02.03) (6 Samples)

- (1) EC 287676, Leading Edge Flowmeter (LEFM) Electronics Package Replacement
- (2) EC 287967, Replacement Vital Battery 1B & 1D (Train B)
- (3) EC 295498, Containment Analysis Update for Heat Exchanger Calibration
- (4) EC 291089, Emergency Feedwater Pump House Water In-Leakage Seal Repair
- (5) EC 144952, DG Lube Oil Temperature Control Valve Modification
- (6) EC 250048, Steam Generator Feed Pump Turbine Control Digital Upgrade

Review of Operating Experience Issues (IP Section 02.06) (2 Samples)

- (1) IN 1998-31, Fire Protection System Design Deficiencies and Common-Mode Flooding of Emergency Core Cooling System Rooms at Washington Nuclear Project Unit 2
- (2) IN 2015-01, Degraded Ability to Mitigate Flooding Events

INSPECTION RESULTS

No findings were identified.

EXIT MEETINGS AND DEBRIEFS

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

- On February 10, 2022, the inspectors presented the design basis assurance inspection (teams) inspection results to Mr. Brian Booth, Site Vice President and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.21M	Calculations	4.3.08-72F	SW System Steady State Analysis	Rev. 11
		737-23	Startup Feedwater Pump NPSHA and Upstream Line Loses	Rev. 2
		9763-3-ED-00-02-F	Voltage Regulation	Rev. 14
		9763-3-ED-00-31-F	480 V Coordination	Rev. 04
		C-S-1-20801	Emergency Feedwater System Flow Study	Rev. 1
		C-S-1-28002	Containment LOCA Response Using GOTHIC	Rev. 3
		C-S-1-28003	Containment MSLB Response Using GOTHIC	Rev. 1
		C-S-1-83618	Ocean and Cooling Tower Service Water Pump IST Acceptance Criteria	Rev. 9
		C-X-1-21802	Expansion Joint Rupture in the Circulating Water System Located in the Turbine Building	Rev. 3
	Corrective Action Documents	02340882		
		AR02418201		
	Corrective Action Documents Resulting from Inspection	02418427		
		02416980		
		02417001		
		02417066		
		02417367		
		02417533		
		02417741		
		02418201		
		02418259		
02418300				
02418331				
02418515				
02418520				
02418528				
Drawings	1-CC-B20211	Primary Component Cooling Loop B Detail	Rev. 22	
	1-DG-D20463	Diesel Generator Lube Oil System Train B Detail	Rev. 18	
	1-FW-D20688	Emergency Feedwater System Details	Rev. 20	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Engineering Changes	EC 144952	DG Lube Oil Temperature Control Valve Modification	1-DG-V-29-A/B, Rev. 004
		EC 250048	Steam Generator Feed Pump Turbine Digital Upgrade Project	Rev. 12
		EC 287967	Replacement Vital Battery 1B & 1D (Train B) LTAM SEA 16-0045	Rev. 004
		EC 291089	EFWPH Water In-Leakage Seal Repair	Rev. 2
		EC 295498	Containment Analysis Update for Heat Exchanger Calibration	Rev. 0
	Engineering Evaluations	EE 90-10	Evaluation of Submerged Cables	03/09/1990
		EE-04-015	Response to NRC IR2004-003, Apparent Violation: DCR 97-033 10 CFR 50.59 (Turbine Building Flood Protection)	Rev. 0
		EE-98-006	SW Pump Curves	Rev. 000
	Miscellaneous	C-S-1-28009	Primary Containment Cooling Water System Heat Loads and Flow Rates for Various Plant Operating Modes After SPU	Rev. 0
		FP22285	Start-Up Feed Pumps Instructions Manual, Centrifugal Pump	Rev. 0
		FP57916	PCCW Heat Exchanger Instr Manual	Rev. 000
		FP700356	Failure Modes and Effects Analysis of the Seabrook Nuclear Station's Steam Generator Feed Pump Turbine Digital Control Upgrade Project – EC 250048	Rev. 0
	Procedures	ES1850.017	SW Heat Exchanger Program	Rev. 06
		ON1090.13	Response to Natural Phenomena Affecting Plant Operations	Rev. 24
		OP-AA-109	Control of Time Critical Operator Actions and Time Sensitive Actions	Rev. 5
		OS1238.02	Turbine Building Flooding	Rev. 6
		OS1246.02	Degraded Vital AC Power (Plant Operating)	Rev. 25
		OX1412.06	Monthly PCCW Loop B Valve Verification	performed 02/08/22
		OX1436.08	Startup Feed Pump Quarterly Surveillance	Performed 10/25/21
		OX1456.86	Operability Testing of IST Pumps	Rev. 24
	SM 7.20	Control of Time Critical Operator Actions and Time Sensitive	Rev. 15	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Work Orders	40577309 40405785-01 40405785-02 40405785-03 40508958 01195389 40638933 40725546 40079149-01 40632779-01	Actions	