June 19, 2001

Mr. Ted C. Feigenbaum
Executive Vice President and Chief Nuclear Officer
Seabrook Station
North Atlantic Energy Service Corporation
c/o Mr. James M. Peschel
P.O. Box 300
Seabrook, NH 03874

SUBJECT: SEABROOK STATION - NRC INSPECTION REPORT 50-443/01-06

Dear Mr. Feigenbaum:

On May 19, 2001, the NRC completed an inspection at the Seabrook nuclear power station. The enclosed report documents the inspection findings which were discussed on May 29, 2001, with Mr. J. Grillo and other members of your staff.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

No findings of significance were identified.

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Sincerely,

/RA/

Curtis Cowgill, Chief
Projects Branch 6
Division of Reactor Projects

Docket No. 50-443
License No: NPF-86

Enclosure: NRC Inspection Report No. 50-443/01-06
Attachment: Supplemental Information

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U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.:	50-443
License No.:	NPF-86
Report No.:	50-443/01-06
Licensee:	North Atlantic Energy Service Corporation
Facility:	Seabrook Generating Station, Unit 1
Location:	Post Office Box 300 Seabrook, New Hampshire 03874
Dates:	April 1, 2001 through May 19, 2001
Inspectors:	Glenn Dentel, Senior Resident Inspector Russ Arrighi, Acting Senior Resident Inspector Javier Brand, Resident Inspector Greg Smith, Senior Physical Security Inspector Suresh Chaudhary, Senior Reactor Engineer
Approved by:	Curtis Cowgill, Chief Projects Branch 6 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000443-01-06, on 4/1/01 - 5/19/01; North Atlantic Energy Service Corporation; Seabrook Station; Unit 1. Resident Inspection Report.

The inspection was conducted by resident inspectors, a physical security inspector, and a reactor engineering inspector. The inspectors did not identify any risk significant findings. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609 "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "no color" or by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process Web site at http://www.nrc.gov/NRR/OVERSIGHT/index.html.

A. Inspector Identified Findings

No significant findings were identified.

B. Licensee Identified Violations

Violations of very low significance which were identified by the licensee have been reviewed by the inspectors. Corrective actions taken or planned by the licensee were reasonable. These violations are listed in Section 4OA7 of this report.

TABLE OF CONTENTS

Page

SUMMARY OF FINDINGS ii

TABLE OF CONTENTS iii

Summary of Plant Status 1

1. REACTOR SAFETY 1
- 1R04 Equipment Alignment 1
- 1R05 Fire Protection 1
- 1R12 Maintenance Rule Implementation 2
- 1R13 Maintenance Risk Assessments and Emergent Work Evaluation 3
- 1R15 Operability Evaluations 4
- 1R16 Operator Workarounds 5
- 1R22 Surveillance Testing 5
- 1R23 Temporary Plant Modifications 6

3. SAFEGUARDS 6
- 3PP4 Security Plan Changes 6

4. OTHER ACTIVITIES 7
- 4OA3 Event Follow-Up 7
- 4OA6 Meetings, including Exit 8
- 4OA7 Licensee Identified Violations 8

ATTACHMENT 1 10
- Key Points of Contact 10
- List of Items Opened, Closed and Discussed 10
- Partial List of Documents Reviewed 10
- List of Acronyms 11

Report Details

Summary of Plant Status: Seabrook station began this inspection period at 100 percent power. On May 8, operators reduced power to approximately 94 percent power due to a circulating water pump trip. On May 23, operators returned the unit to 100 percent power following repairs to the circulating water pump.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment

a. Inspection Scope

The inspectors performed a partial system walkdown of the turbine driven emergency feedwater (TDEFW) system while the motor driven emergency feedwater pump was removed from service for a planned maintenance outage. During this walkdown, the inspectors verified that the redundant system was properly aligned in accordance with the system valve position lineup check list and system drawings. The inspectors also walked down sections of the TDEFW steam supply drain system and corresponding steam traps to verify that material deficiencies present did not challenge operability of the redundant train.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors toured four risk significant areas to assess the condition of the fire detection and suppression equipment, fire barriers, and the presence of combustible materials. Station drawings were used to verify that fire fighting equipment was available in the field where required and that applicable sections of the main fire supply header were properly aligned and charged. The following areas were reviewed:

- Service water pump room
- Electrical penetration area
- Emergency diesel generator rooms
- Emergency feedwater room

The inspectors also reviewed the on-line maintenance assessment, compensatory measures, and interviewed applicable personnel, regarding the inspection, cleanup, and repairs of the “A” fire tank (1-FP-TK-36-A).

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation

.1 Post Accident Sampling System

a. Inspection Scope

The inspectors reviewed the implementation of the maintenance rule (10 CFR 50.65) as it related to the following:

- Proper classification of equipment failures for the post accident sampling system (PASS) during the previous 24 months. The PASS was designated as an (a)(1) system due to the accumulation of over two functional failures over a 24-month period. Condition reports (CRs) reviewed included CR 01-03717 (failure to meet acceptance criteria during surveillance activity CS0932.17), and 00-1838 (sample pump failure). The inspectors also reviewed the PASS system performance report and the maintenance rule improvement plan (SS-02).

b. Findings

No findings of significance were identified.

.2 Periodic Evaluation

a. Inspection Scope

The inspectors reviewed the periodic evaluations required by 10 CFR 50.65 (a)(3) for Seabrook Nuclear Power Station to verify that structures, systems and components (SSCs) within the scope of the maintenance rule were included in the evaluations and balancing of reliability and unavailability was given adequate consideration. The inspectors reviewed the licensee's most recent periodic evaluation reports. The last periodic report for Seabrook Nuclear Power Station covered the period from July 1998 through March 2000.

The inspectors selected the safety significant systems that were in (a)(1) status to verify that: (1) goals and performance criteria were appropriate; (2) industry operating experience was considered; (3) corrective action plans were effective; and (4) performance was being effectively monitored. On April 23, thirteen SSCs were in (a)(1) status; out of which two were in the monitoring status, nine in various stages of corrective action, and two in the evaluation and goal development process. The inspectors also reviewed the licensee's assessment of the balance between reliability and availability for these systems. The inspectors reviewed the follow-up activities in response to the 345 kv Bushing Flashover Event of March 5, 2001, for the determination of Maintenance Rule Functional Failure (MRFF), and the technical adequacy of the evaluation.

On April 23, thirteen SSCs were in (a)(1) status, out of which the following six systems were selected for detailed review.

- Service Water System
- Service Air System
- Diesel Generator System
- Emergency Feed Water System
- Nuclear Instrumentations System
- Control Building Air Handling System

Additionally, the following (a)(1) systems were reviewed for an assessment of the validity of their status and expected date of return to (a)(2) status.

- Post Accident Monitoring System
- Radiation Monitoring System
- Post Accident Sampling System
- Primary Auxiliary Building System
- Radio Communication System

The following (a)(2) systems were selected for detailed review. These systems were returned to the (a)(2) status in the last twelve months.

- Containment Air Handling System
- Primary Component Cooling System
- Rod Control and Position System
- 345 kv Switch Yard

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

The inspectors reviewed the following on-line maintenance work plans/activities to assess the adequacy of the licensee's risk assessment process:

- Maintenance request O1W000977; emergent work to replace the "A" diesel generator heat exchanger vacuum breaker (SW-V-176)
- On-line maintenance plan for the week of April 15
- On-line maintenance plan for the week of April 22
- On-line maintenance plan for the week of May 13

The inspectors reviewed the plans against the criteria contained in procedure WM 10.1, "On-line Maintenance," Rev. 2, Chg. 1 and Department Instruction RM-201, "Risk Evaluation Process for On-line Maintenance," Rev. 6. The inspectors also reviewed the risk assessments and contingencies established, and verified that the increase in risk was conveyed during the morning meeting and during operator shift turnover.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following open operability determinations (ODs) and CRs to ensure that the identified conditions or their cumulative effects did not adversely affect system operability or plant safety. Additionally, the inspectors reviewed the monitoring plans, the applicable corrective actions developed, and the assessments performed.

- OD 01-02671, Final operability determination for the failure of the EFW steam supply drain pots check valves MS-400 and/or MS-401 to hang open as designed.

- OD-01-3022, Slow closure of component cooling water valve CC-V-975, during stroke time testing.

- CR 01-03799, Abnormal vibration of the "D" service water pump motor.

- CR 01-04428, Thimble plug not installed. The inspectors reviewed the preliminary operability determination for a thimble plug that was suspected to have not been installed in the reactor core during the last refueling outage. The inspectors verified that the absence of the thimble plug would not significantly affect the reactor core physics. This determination was made based on reviewing: (1) flux maps completed since the refueling outage, (2) the assumed additional bypass flow versus the total available core flow as described in the Updated Final Safety Analysis Report (UFSAR); and (3) the assessment in the preliminary operability determination. The inspectors reviewed procedure, "Refueling Administrative Control," Rev. 2, Chg. 4, and associated material transfer forms to evaluate the cause of the event. The inspectors also examined the extent of review evaluation and an associated condition report, CR 00-12111. The failure to properly implement refueling procedures was determined to be a licensee identified violation (see Section 4OA7).

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds

a. Inspection Scope

The inspectors reviewed the operator work-around list and operator logs to evaluate the potential impact on the operators' ability to implement normal, abnormal or emergency operating procedures. The inspectors walked down the control room panels, evaluated alarmed conditions, and interviewed control room operators to ensure that applicable control room deficiencies were captured in the work-around list. The inspectors also examined the criteria for compensatory measures, on-line maintenance prioritization, on-line risk evaluation, and work control as they pertained to operator work-arounds.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

.1 Safety Injection Accumulator Calibration

a. Inspection Scope

The inspectors reviewed the following surveillance test:

- IX1668.314 "Calibration of P-964 Safety Injection Accumulator 9C Pressure"

The inspectors reviewed the completed surveillance test data to verify that it met the licensee's procedure requirements, and verified that the test equipment was removed and the equipment was returned to service following testing.

b. Findings

No findings of significance were identified.

.2 Charging Pump Surveillance

a. Inspection Scope

The inspectors observed portions of surveillance testing of the "A" charging pump, performed on May 17, 2001. The inspectors attended the pre-job brief, performed system and control room walkdowns, observed operators perform test evolutions, and interviewed applicable personnel. Additionally, the following surveillance procedures and documents were partially reviewed:

- OX1456.01, "Charging Pump A and B Quarterly Flow and Valve Stroke Test and 18-Month Remote Position Indication Verification," Rev 10, Chg. 9; and,

- Repetitive Task Sheet (RTS) 01R05601A002, "Charging Pump "A" Flow and Valve Stroke Test."

b Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the following temporary plant modifications to ensure they did not affect the safety function of important safety systems. The inspectors reviewed the temporary modification and associated 10 CFR 50.59 evaluations against the UFSAR and plant technical specifications. The inspectors also verified the configuration control of the modification was adequate by verifying that drawings were properly updated.

- 97TMOD29, Installation of transient analysis point to provide compensated delta-T signal to allow trending.

- 01TMOD06, Use of alternate speed sensor (1-TSI-SY-SSPU-6) to provide turbine control signal.

b. Findings

No findings of significance were identified.

3. SAFEGUARDS

Cornerstone: Physical Protection

3PP4 Security Plan Changes

a. Inspection Scope

An in-office review was conducted of changes to the Physical Security Plan, identified as Revision 27, submitted to the NRC on November 13, 2000, in accordance with the provisions of 10 CFR 50.54(p). The review was conducted to confirm that the changes were made in accordance with 10 CFR 50.54(p), and did not decrease the effectiveness of the plan.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator Verification

.1 Unplanned Scrams and Scrams with Loss of Normal Heat Sink

a. Inspection Scope

The inspectors reviewed the accuracy and completeness of performance indicators for unplanned scrams per 7000 critical hours and scrams with loss of normal heat sink. The review included a comparison of the data to confirmatory plant records such as Licensee Event Reports (LERs), operating logs, procedures, and also interviews with applicable licensee personnel. The review included 10 months of reported data (June 2000 - March 2001).

b. Findings

No findings of significance were identified.

.2 Unplanned Power Changes per 7000 Critical Hours

a. Inspection Scope

The inspectors reviewed the performance indicators for unplanned changes in reactor power of greater than 20 percent per 7000 hours of critical operation. Manual and automatic scrams are excluded from this performance indicator. The inspectors verified accuracy of the reported data through reviews of monthly operating reports, shift operating logs, LERs and additional records. The review included 10 months of reported data (June 2000 - March 2001).

b. Findings

No findings of significance were identified.

4OA3 Event Follow-Up

.1 (Closed) LER 50-443/00-007, and 00-007, Supplement 1: Overpressure Protection System Relief Valves Outside Technical Specification Limits.

The licensee identified, during testing on November 2, 2000, that the “as found” set pressure for the “A” RHR suction relief valve, 1RC-V-24, exceeded the technical specification (TS) 3.4.9.3 required value, in that the valve lifted at a lower pressure than expected. The licensee also tested the one remaining valve 1RC-V-89 in the same test group as required by the ASME Code. This valve was also found outside its allowed TS limit, in that it lifted above its allowed value. The licensee expanded the test sample as required by the ASME Code and identified several other valves outside the TS limit. The licensee issued condition report CR-00-10484, performed an extend of condition evaluation to verify that no operability concerns existed in any of the systems affected,

and repaired or replaced the valves that failed the testing. During an onsite review of this LER, the inspectors determined that the corrective actions taken were reasonable and complete. This event did not constitute a violation of NRC requirements since the pressurizer power operated relief valves provided the overpressure protection as allowed by the TS 3.4.9.3. Therefore, the licensee met their TSs and followed the ASME code with their expanded inspection of additional relief valves.

.2 (Closed) LER 50-443/01-001: Non-compliance with Technical Specifications due to Installation of Unqualified Test Equipment.

On February 1, 2001, with the plant at 100% power, the licensee identified two non-safety-related chart recorders installed and connected to solenoid valves which provide the safety-related functions for opening and closing the "D" main steam line atmospheric steam dump valve (1MS-PV-3004). The installation of these recorders may have caused a failure of valve, 1MS-PV-3004, to operate in the event of either a failure of the chart recorder(s) or the occurrence of a seismic event. The licensee determined that valve, 1MS-PV-3004, was capable of operation during the period that the recorders were installed. During an onsite review of this LER, the inspectors determined that the failure to control installation of unqualified equipment was a violation of TS 6.7.1 requirements. However, this violation was considered a violation of minor significance and not subject to formal enforcement action.

.3 (Closed) LER 50-443/01-002: Reactor Trip due to Power Arc Flashover Across the "B" Phase 345 KV Transmission Line Bushings.

The inspectors conducted an onsite review of this LER. This event was discussed previously in NRC Inspection Report Nos. 05000443/2000-011 and 2000-003. No new information was provided in the LER. No violations of regulatory requirements were identified.

4OA6 Meetings, including Exit

Exit Meeting Summary

The inspectors presented the inspection results to Mr. J. Grillo on May 29, 2001, following the conclusion of the period. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any materials evaluated during the inspection were considered proprietary. No proprietary information was identified.

4OA7 Licensee Identified Violations.

The following finding of very low safety significance was identified by the licensee and is a violation of NRC requirements which met the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as a Non-Cited Violation (NCV).

NCV Tracking Number

NCV 05000443/2001-06-01

Requirement Licensee Failed to Meet

Technical Specification 6.7.1.a requires that written procedures shall be implemented covering the activities described in Appendix A of Regulatory Guide 1.33, Rev. 2. Regulatory Guide 1.33 requires procedures for refueling and core alternations. Contrary to the above, on November 28, 2000, the refueling senior reactor operator failed to properly verify the component type (thimble plug) in fuel assembly J53 and therefore failed to implement Procedure RS0721, “Refueling Administrative Control,” Rev. 2, Chg. 4. This failure resulted in a thimble plug not installed in the reactor core as required during the last refueling outage (see Section 1R15).

ATTACHMENT 1

SUPPLEMENTAL INFORMATION

a. Key Points of Contact

M. Carmichael, Oversight Manager
M. DeBay, Assistant Ops. Manager
J. Grillo, Assistant Station Director
R. Hickock, NRC Coordinator
T. Nichols, Technical Support Manager
J. Pandolfo, Security Manager
J. Peschel, Regulatory Programs Manager
B. Plummer, Operations Manager
D. Sherwin, Maintenance Manager
J. Sobotka, Regulatory Compliance Supervisor
G. StPierre, Station Director
R. White, Mechanical Engineering Manager

b. List of Items Opened, Closed and Discussed

Open and Closed:

50-443/01-06-01	NCV	Failure to Properly Implement Refueling Procedures Resulted in a Thimble Plug not Installed in the Reactor Core

Closed:

50-443/00-007-00, 01	LER	Overpressure Protection System Relief Valves Outside Technical Specification Limits.
50-443/01-001	LER	Non-compliance with Technical Specifications due to Installation of Unqualified Test Equipment.
50-443/01-002	LER	Reactor Trip due to Power Arc Flashover Across the “B” Phase 345 KV Transmission Line Bushings.

c. Partial List of Documents Reviewed

Periodic Assessment Report of Maintenance Rule program, Seabrook Station for the period - July 1998 through March 2000.

System Performance Reports:
Service Water System, System Performance Report, March, 2001.
Service Air System, System Performance Report, April, 2001.
Diesel Generators, System Performance Report, February, 2001.
Emergency Feed Water System, System Performance Report, March, 2001.
Nuclear Instrumentation System, System Performance Report, March, 2001.

Control Building Air Handling System, System Performance Report, March, 2001.
Containment Air Handling System, March, 2001.
Primary Component Cooling System, March, 2001.
Rod Control and Position System, March, 2001.
345 kv Switch Yard, March, 2001.

Condition Reports associated with (a)(1) systems:
CR 00-07505, MR Periodic Assessment, 6/26/00
CR 01-03870, MRFF Determination for the 345 Kv Switch Yard, 4/26/01
CR 01-02315, MRFF for EFW -01, 03/06/01
CR 01-02944, MR Repeat Failure Criteria, 03/29/01
CR 01-03818, MR Plant Level Performance Criteria, 04/23/01

Self-assessment Report:
SA 00-005, Maintenance Rule Self-assessment -2000, Operating Cycle No. 7, dated 6/26/2000.

Root Cause Analysis for CR 01-02115, Plant Trip on March 5, 2001, (non-dated draft)

Maintenance Rule Improvement Plan for:
Main Steam Isolation Valve Actuators ACR 98-3353, Rev 3, 03/27/01
DG-01, Emergency Diesel Generators, Rev 0, 02/28/01

Plant Engineering Procedures:
System/Component Performance Reports, PEG - 33, Rev 02, 04/10/00
Plant Engineering Group Instructions, PEG - 30, Rev. 02, 02/13/00

d. List of Acronyms

ASME	American Society of Mechanical Engineers
CR	Condition Report
EFW	Emergency Feedwater
LER	Licensee Event Report
MRFF	Maintenance Rule Functional Failure
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
OD	Operability Determinations
PASS	Post Accident Sampling System
RTS	Repetitive Task Sheet
RHR	Residual Heat Removal
SDP	Significance Determination Process
SSC	Structure, System, or Component
TDEFW	Turbine Driven Emergency Feedwater
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report