

July 27, 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 50-443/01-07

Dear Mr. Feigenbaum:

On June 30, 2001, the NRC completed an inspection at the Seabrook nuclear power station. The enclosed report documents the inspection findings which were discussed on July 11, 2001, with Mr. G. St. Pierre 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.

Based on the results of this inspection, the inspectors identified two issues of very low safety significance (Green). These issues were determined to involve violations of NRC requirements. However, because of their very low safety significance and because they have been entered into your corrective actions program, the NRC is treating these issues as Non-Cited violations, in accordance with Section VI.A of the NRC's Enforcement Policy. If you deny these Non-Cited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, within 30 days of the date of this inspection report, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001, with copies to the Regional Administrator, Region I, and the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, D.C. 20555-001, and the NRC Resident Inspector at the Seabrook facility.

Mr. Ted C. Feigenbaum

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Sincerely,

**/RA/**

Curtis J. Cowgill, Chief  
Projects Branch 6  
Division of Reactor Projects

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

Enclosure: NRC Inspection Report No. 05000443/2001-07  
Attachment: Supplementary Information

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Mr. Ted C. Feigenbaum

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U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.: 50-443

License No.: NPF-86

Report No.: 50-443/01-07

Licensee: North Atlantic Energy Service Corporation

Facility: Seabrook Generating Station, Unit 1

Location: Post Office Box 300  
Seabrook, New Hampshire 03874

Dates: May 20, 2001 through June 30, 2001

Inspectors: Glenn Dentel, Senior Resident Inspector  
Javier Brand, Resident Inspector  
Leonard Prividy, Senior Reactor Inspector  
Paul Frechette, Security Inspector

Approved by: Curtis Cowgill, Chief  
Projects Branch 6  
Division of Reactor Projects

## SUMMARY OF FINDINGS

IR 05000443-01-07, on 05/20 - 06/30/2001; North Atlantic Energy Service Corporation; Seabrook Station, Unit 1. Inservice inspection activities, operability evaluations.

The inspection was conducted by resident inspectors, a regional reactor inspector, and a regional security specialist. The inspection identified two Green findings, which were Non-Cited violations. 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 website <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.

### A. Inspector Identified Findings

#### **Cornerstone: Mitigating Systems**

- GREEN. The inspectors identified a Non-Cited Violation for failure to establish appropriate procedural controls to monitor and correct debris levels in the service water bays.

The results from an intake structure inspection during the seventh refueling outage found that the debris levels in both service water (SW) bays in proximity to the pumps were 2½ to 3½ feet above the SW pump suction bells. The substantial debris accumulation in the SW pump bay was viewed as a precursor to a significant event with a reasonable potential for common cause failure of all SW pumps. Since there was no actual loss of SW system function, the risk associated with this issue was determined to be of very low safety significance by the significance determination process. (Section 1R07).

- GREEN. The inspectors identified a Non-Cited Violation for failure to promptly identify and correct degraded emergency feedwater pump oil bubblers.

This failure to adequately evaluate available industry experience and maintenance identified problems could have affected operability of both emergency feedwater pumps. The safety significance of this finding was very low because the degraded condition did not completely block oil flow and the pumps had not experienced any active lubricating oil leaks in the past two years. Therefore, the pumps would have been capable of performing their safety function. (Section 1R15).

### B. Licensee Identified Violations

There were no violations identified by the licensee during this inspection.

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## Report Details

Summary of Plant Status: The plant was operating at approximately 95 percent power at the beginning of the period due to repairs to a circulating water pump. On May 23, operators returned the unit to 100 percent power. The plant was operated at approximately 100 percent power for the duration of the inspection period.

### **1. REACTOR SAFETY** **Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity**

#### 1R04 Equipment Alignments

##### .1 Emergency Feedwater Partial System Walkdown

###### a. Inspection Scope

The inspectors performed a partial system walkdown of both emergency feedwater (EFW) system trains after the licensee identified problems with the inboard side lubricating oil make-up bubblers for the turbine driven emergency feedwater (TDEFW) pump. See Section 1R15 for additional details.

The inspectors reviewed the oil bubbler issue to verify equipment alignment and to identify any potential generic implications or discrepancies that may impact the functions of the EFW system or other systems, and therefore potentially increase risk. The inspectors verified that the redundant pumps were not affected by improper installation of the oil bubblers, that proper lubricating oil level existed in all the pumps inspected, and that existing material deficiencies such as minor oil leaks did not challenge operability of the pumps. The inspectors also walked down other applicable safety related or important to safety pumps for systems such as the high head safety injection, safety injection, residual heat removal, containment building spray, primary component cooling water, spent fuel pool cooling, and main turbine generator stator cooling.

###### b. Findings

No findings of significance were identified.

##### .2 Chemical and Volume Control System - Reactivity Control - Partial System Walkdown

###### a. Inspection Scope

The inspectors walked down portions of the chemical and volume control system associated with the boration and dilution function of the system. The inspectors reviewed the adequacy of the reactivity controls and system performance by: 1) verifying valves positions in the field versus the operations procedure, OS1008.01, "Chemical and Volume Control System Makeup Operations," Rev. 8, Chg. 30;" 2) observing operators perform a dilution of the reactor coolant system; and 3) interviewing operators on performance of the system.

b. Findings

No findings of significance were identified.

.3 Primary Component Cooling Water Complete System Walkdown

a. Inspection Scope

The inspectors performed a complete system walkdown of the accessible portions of the primary component cooling water (PCCW) system, to verify equipment alignment and identify any discrepancies that may impact the function of the system.

The inspectors reviewed portions of the system's operating procedure OS1012.03, "Primary Component Cooling Water Loop A Operation", and system piping and instrument drawings (1-CC-B20205, 06, 07 and 08) and verified system alignment in comparison to the drawings and the system line-up list in procedure OS1012.03. The system lineup review included a review of accessible portions of the PCCW system components, valve positioning, and verification of remote operating status lights and indicating instrumentation. The inspectors reviewed the PCCW system performance report, open work orders, operations work around list, and condition reports (CRs) to assess any outstanding equipment and/or component deficiencies. The inspectors confirmed that the system was properly aligned to support normal and emergency plant operations.

The inspectors also reviewed CR 00-12739-02, which evaluated the impact that relief valves deviations, identified during last refueling outage (RO7), had on the overall system capability. During testing conducted during RO7, eight of thirteen ASME III Code, Class 3, PCCW system relief valves did not meet the lift test acceptance criteria. Six of these valves also exceeded the seat leakage acceptance criteria.

The inspectors verified from documentation review and interviews with design and system engineering, that the lift set point deviations did not adversely impact the PCCW system. The inspectors also asked how identified seat leakage was accounted for in the evolution and whether the maximum allowable system design leakage of 2.5 gallons per minute (gpm) had been exceeded. The inspectors also questioned if the system engineers were generally using component test results to determine if there are any adverse impact on their systems.

Based on evaluations conducted in response to the inspectors' questions, the design engineer determined that no past operability concern existed, because the total identified relief valves seat leakage would not have exceeded the 2.5 gpm system allowable leakage. CR 01-06335 was generated to capture the issues associated with system engineers evaluation of component test results for determining potential adverse impact on their systems.



b. Findings

No findings of significance were identified.

1R05 Fire Protection

.1 Area Walkdowns

a. Inspection Scope

The inspectors reviewed the fire protection analyses and examined the following risk significant areas:

- "B" Switchgear, Control Building 21'6" elevation
- South and North Ends, Turbine Building 50' elevation
- South and North Ends, Turbine Building 21' elevation
- Primary Component Cooling Water Area, Primary Auxiliary Building 25' elevation

Specific fire protection conditions examined included control of transient combustibles, material condition of fire protection equipment, and the adequacy of any fire impairments and compensatory measures. The inspectors also reviewed the pre-fire strategies for the areas.

b. Findings

No findings of significance were identified.

.2 Fire Drill Evaluation

a. Inspection Scope

The inspectors observed an unannounced fire drill involving a simulated fire at the service water pump room. The inspectors verified the following: 1) the communications between the brigade leader, brigade members, and control room were clear and effective; 2) the equipment (radios, protective clothing, self-contained breather apparatus, fire extinguishers, etc.) was in good condition and properly used; and 3) the fire fighting strategies and proper fire fighting practices were utilized. The critique was observed and several issues were identified and entered into the corrective action system (CR 01-05950 and 01-05997).

b. Findings

No findings of significance were identified.

## 1R07 Heat Sink Performance

### a. Inspection Scope

The inspectors performed a detailed review of recent thermal performance testing and monitoring of PCCW and emergency diesel generator (EDG) heat exchangers (HX) to verify that any potential HX deficiencies which could mask degraded performance were identified. This included a review of the test methods for consistency with accepted industry practice and the technical basis for the frequency of heat exchanger testing. The activities associated with the service water (SW) intake structure inspections conducted by divers during last fall's refueling outage (RFO 7) were reviewed in depth to verify that any potential common cause heat sink performance problems that have the potential to increase risk were identified. Also, the inspectors conducted a SW system walkdown with cognizant plant engineering personnel. Finally, the inspectors reviewed various SW system problems that were identified in the current system performance report and described in detail in corrective action program CRs.

### b. Findings

The inspectors identified a finding concerning inadequate procedures associated with monitoring and controlling debris levels in the SW intake structure. Debris levels were found during RFO 7 to be substantially above the SW pump suction bell and maintenance procedures had not been revised to improve control of this problem in the future. Also, operations procedures were not established to monitor debris levels during shutdown and power operation.

CR 00-08133 was issued on July 20, 2000, as a significance level "C" CR describing fouling of the circulating water traveling screens. On September 11, 2000, CR 00-09634 was issued as a significance level "A" CR regarding an "A" SW train high differential pressure alarm. The licensee recognized that a 5-month outage of the system used to chlorinate the intake tunnel was the primary cause of these problems. The lack of chlorination caused a substantial mussel and marine growth buildup in the tunnel which later was transported to the traveling screens and pump bays after chlorination was resumed. An estimated 130 cubic yards of debris were removed from the service water intake structure at the completion of the de-mucking operation during RFO 7.

The licensee took specific corrective actions for divers to inspect the intake tunnel and circulating and service water intake structures during RFO 7. However, licensee actions were not commensurate with the risk significance concerning the quantities and levels of silt/debris/mussel shells/marine growth found during the RFO 7 SW intake structure inspection. Even though the debris levels in both SW bays in proximity to the pumps were found to be 2½ to 3½ feet above the SW pump suction bell which divers reported as exceeding what had been typically found in previous outages, a CR was not issued. The inspectors determined that the condition of debris levels well above the pump suction bowl created the possibility for a SW pump common cause failure should some initiating event occur that would cause an intake structure disturbance of the pump bay debris.

During the licensee's review of CRs 00-08133 and 00-09634, and also after the results of the divers inspection during RFO 7, the inspector observed that the station staff had not fully assessed the risk significance of the as-found condition of the SW pump bay debris levels to determine the appropriate response including any required procedure revisions. Adequate procedures were not in place for monitoring debris levels during shutdown and power operation and for dispositioning the results of the SW intake structure inspections. For example, improved mapping of the debris levels in the pump bays, which could assist assessing the potential for increased risk from this problem, was not being considered. The procedures governing the inspection instructions for the divers, the work order, and associated controls were inadequate considering the potential risk significance of this issue. Also, the licensee had not considered establishing procedures with acceptance criteria for maximum levels of debris in the SW pump bay with the possible use of non-intrusive level instruments to detect debris levels during both shutdown and power operation. The inspectors determined that the procedures needed to properly address the problems concerning the debris levels found in the SW pump bays during RFO 7 were inadequate, were not commensurate with the risk significance of the issue, and were contrary to 10 CFR 50, Appendix B, Criterion V, Instructions, Procedures, and Drawings. Specifically, procedures should include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been accomplished. The licensee's failures to issue a CR regarding the abnormal debris levels found in the SW bays during RFO 7 and to appropriately revise their procedures resulted in missed opportunities to minimize the plant's risk concerning such problems in the future. The licensee issued CR 01-04910 on May 24, 2001, to evaluate these matters consistent with the corrective action program.

When evaluating this condition in accordance with NRC Inspection Manual Chapters 0609 and 0610, this condition was determined to be a more than minor inspection issue and was evaluated using the Significance Determination Process (SDP). The substantial debris accumulation found in the SW pump bay during RFO 7 was viewed as a precursor to an event with a potential for common cause failure of all SW pumps and thus affected the mitigating systems cornerstone. When evaluated in accordance with the SDP Phase 1 worksheet, the issue was considered to be of very low safety significance (GREEN finding) since there was not an actual loss of SW system function. Since this issue was classified as a GREEN finding and captured in the licensee's corrective action program, it was determined to be a non-cited violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy issued May 1, 2000 (65FR25368). **(NCV 05000443/2001-007-01)**.

#### 1R11 Licensed Operator Requalification

##### a. Inspection Scope

The inspectors observed operator training focusing on human performance of time critical tasks. The inspectors reviewed the operators' ability to correctly evaluate the training scenario and implement the emergency plan. The inspectors also evaluated whether deficiencies were identified and discussed during critiques.

##### b. Findings

No findings of significance were identified.

## 1R12 Maintenance Rule Implementation

### a. Inspection Scope

The inspectors evaluated Maintenance Rule (MR) implementation for the issues listed below. Specific attributes reviewed included MR scoping, characterization of failed structures, systems, and components (SSCs), MR risk categorization of SSCs, SSC performance criteria or goals and appropriateness of corrective actions. In addition, the inspectors evaluated whether system performance was properly dispositioned for MR category (a)(1) or (a)(2) performance monitoring and for maintenance preventable functional failures.

- The inspectors examined the improvement plan for the maintenance rule (a)(1) nuclear instrumentation system. Causal assessments and corrective actions were evaluated for the multiple failures of source range detectors and gamma-metrics equipment.
- The inspectors examined the improvement plan for the maintenance rule (a)(1) rod control system. Causal assessments and corrective actions were evaluated for the multiple failures of the automatic and manual control functions of the system. The automatic trip function of the rod control system was unaffected by the failures.
- The inspectors reviewed the classification of equipment failures for the startup feed water (SUFW) pump 1FW-P-113, during the previous 24 months. The SUFW pump was designated as an (a)(1) system due to the accumulation of over two functional failures over a 24 month period. CRs reviewed included CR 01-03717 (failure to meet acceptance criteria during surveillance activity CS0932.17), 00-1838 (sample pump failure), and 01-02478, 01-01108, and 01-00878 (relief valve lifting - multiple instances).
- The inspectors reviewed the classification of equipment failures and identified deficiencies for the PCCW system for the last year. To complete this inspection, the inspectors performed system walk downs, reviewed the system performance report, operators work around list, and list of CRs and documented system deficiencies, and interviewed the system engineer.

### b. Findings

No findings of significance were identified.

## 1R13 Maintenance Risk Assessment and Emergent Work Control

### a. Inspection Scope

The inspectors reviewed the scheduling and control of maintenance activities in order to evaluate the effect on plant risk. The inspectors reviewed the routine planned maintenance and emergent work for the following equipment removed from service:

- The inspectors reviewed the risk evaluations completed prior to replacement of a relay associated with the “A” circulating water pump. The relay had failed following corrective maintenance on the pump. The inspectors examined the electrical drawings and questioned operators to determine whether the relay replacement could effect the two operating pumps.
- The inspectors reviewed the on-line maintenance assessment for the planned frequency adjustment for the “A” vital bus inverter. The inverter provides power to the reactor protection system and other 120 V loads. The inspectors evaluated the risk implications by reviewing the electrical drawings, interviewing the system engineer, and observing the preevolution briefing.

### b. Findings

No findings of significance were identified.

## 1R15 Operability Evaluations

### a. Inspection Scope

The inspectors reviewed preliminary operability determination (OD) 01-05262, which evaluated a problem involving the in-board side oil bubbler for the TDEFW pump.

The inspectors reviewed the issue to ensure that the identified condition did not adversely affect system operability or plant safety, and to verify that corrective actions taken were adequate to prevent recurrence. The inspectors performed the following: interviewed the system and component engineers and maintenance technicians; performed field walkdowns; visually inspected one of the oilers removed from the EFW pumps; reviewed completed maintenance activities and open deficiencies for the EFW system; and reviewed the operations work around list.

### b. Findings

The inspectors identified that available industry operating experience information and a maintenance identified problem with the EFW oil bubbler were not properly used to identify and correct a precursor that could have affected the operability of both safety related EFW pumps. The finding was evaluated for risk using the significance determination process and determined to be of very low safety significance (Green), since the EFW pumps remained operable.

On June 4, 2001, the pump component engineer identified a potential problem with one of the TDEFW pump oil bubblers, during investigations of low oil level in a non-safety related secondary component cooling water (SCCW) pump. The concern was that the pipe entering the bottom of the oil bubbler extended beyond the threaded fitting (protruding too far into the housing) such that the pipe could make contact with the internal flat disc used for level adjustments. The contact between the disc and the oil feed pipe could block oil flow from the bubbler to the bearing reservoir, preventing oil makeup to replenish any oil lost due to pump operation or leaks. A low oil condition may cause excessive heating or bearing failure and result in pump or motor damage.

The concern with operation of the oil bubblers was first identified at another facility in August 2000. Seabrook's operational experience (OE) group received and distributed the information, in September 2000, to the appropriate station departments. However, the staff did not initiate action to investigate and identify similar oiler problems at Seabrook.

Each EFW pump has two oil bubblers. Visual inspections of these bubblers, performed by the component engineer, determined that the remaining bubblers were installed properly. However, the review concluded that, on April 2001, the outboard side bubblers for both the motor driven and turbine driven EFW pumps had been replaced by maintenance technicians because of concerns with how far the pipe was inserted into the bubbler housings. No CR or notification of this concern was made by the technicians, and the bubbler replacements were not documented. As a result, no investigation was initiated by the licensee.

The component engineer determined that the as-found condition of all three bubblers did not completely block oil flow and that the EFW pumps had not experienced any active lubricating oil leaks in the last two years. Therefore, no past operability concerns existed with the as-found condition and the pumps would have been able to perform their safety function. The component engineer also determined that this issue was not a contributing factor for the TDEFW pump failure that occurred on March 5, 2001.

The licensee conducted an extent-of-condition review and concluded that, due to design characteristics of the oil bubbler, the concern was limited to bottom loaded oilers and did not apply to side mounted oilers. Plant walkdowns confirmed that the only safety related pumps with bottom mounted oilers were the two EFW pumps. Other components with installed oil bubblers include: the containment spray pumps and motors; the PCCW pumps; the spent fuel pool cooling pumps; and the non-safety related SCCW pumps and main generator stator cooling pumps. The licensee replaced the degraded oilers in the EFW pumps and planned inspection of similar oilers on all remaining non-safety related pumps.

The available industry operating experience information and the maintenance identified problem with the EFW oil bubbler were not properly used to identify and correct a precursor that could have affected the operability of both safety related EFW pumps. The inspectors evaluated this finding using Appendix A (Phase 1) of the SDP and determined that this issue was of very low safety significance (Green), since no active oil leaks existed in the EFW pumps, and the as- found degraded oilers did not completely

block lube oil flow to the bearing reservoirs. Thus, the pumps would have been capable of performing their safety function.

Criteria XVI of Appendix B, to 10 CFR 50, requires, in part, that licensees promptly identify significant conditions adverse to quality, determine their causes, and take corrective actions to prevent recurrence. The failure to adequately evaluate industry operating experience, and the failure to identify and evaluate degraded oilers, could have affected the operability of both safety related EFW pumps had an oil leak occurred. This is a violation of 10 CFR 50, Appendix B, Criteria XVI, "Corrective Actions". The issues associated with this violation were entered into the licensee's corrective action program as CR 01-06419. This violation is being treated as a Non-Cited Violation consistent with Section VI.A.1 of the NRC Enforcement Policy, issued on May 1, 2000 (65FR25368). **(NCV 05000443/2001-007-02)**

#### 1R17 Permanent Plant Modifications

##### a. Inspection Scope

The inspectors reviewed design change MMOD 98-0601, which installed definitive oil level indicators for the EFW pumps. The modification was designed to provide continuous oil level indication, which was not provided by the installed oil bubblers. This modification was installed in the field by maintenance technicians in April 2001.

This modification was reviewed to ensure that it did not adversely affect the EFW pumps availability, reliability, and functional capability. The inspectors also performed field inspections of the completed modification, and reviewed applicable drawings.

##### b. Findings

No findings of significance were identified.

#### 1R19 Post-Maintenance Testing

##### a. Inspection Scope

The inspectors reviewed the scope of the post-maintenance activities, reviewed the completed test data, verified specific system parameters, interviewed plant personnel, and observed portions of the test activities. The inspectors observed the post-maintenance testing for the following maintenance activities:

- Repair of a leaking grease coupling on the "C" PCCW pump.
- Replacement of the coupling sheer pin and greasing of the the "B" charging pump coupling.
- "B" EDG miscellaneous preventive maintenance activities, and repairs of various oil leaks.
- Repair of a vent valve on the startup feedwater pump.

##### b. Findings

No findings of significance were identified.

## 1R22 Surveillance Testing

### a. Inspection Scope

The inspectors observed portions of several surveillance testing activities of safety related systems to verify that the system and components were capable of performing their intended safety function, to verify operational readiness, and to ensure compliance with required Technical Specifications (TS) and surveillance procedures.

The inspectors performed system and control room walkdowns, observed operators and technicians perform test evolutions, reviewed system parameters, and interviewed the system engineers and field operators. The following surveillance procedures were observed:

- On June 14, OX1426.01, "DG 1A Monthly Operability Surveillance"
- On June 26, OX1456.50, "Train B ESFAS Slave Relay K616 Quarterly Block/go Test," Rev. 7
- On June 27, IS1632.610, "S-Tach Diesel Generator "B" Speed Calibration," Rev. 4
- On June 26, IX1680.922, "Solid State Protection System (SSPS) Train B Actuation Logic Test," Rev. 8

### b. Findings

No findings of significance were identified.

## Emergency Preparedness (EP)

### 1EP6 Drill Evaluation

#### a. Inspection Scope

On June 6, the inspectors observed portions of combined functional drill, 01-02, to evaluate the conduct of the drill and adequacy of the licensee's critique. The inspectors verified that event classification and notification were properly conducted and priorities were communicated among the technical support center. The inspectors verified that identified problems were entered into the corrective action program through observation of the critique and review of the drill evaluation report.

#### b. Findings

No findings of significance were identified.

## 3. **SAFEGUARDS**



**(Cornerstone Physical Protection)**3PP1 Access Authorization Programa. Inspection Scope

The following activities were conducted to determine the effectiveness of the licensee's behavior observation portion of the personnel screening and fitness-for-duty programs as measured against the requirements of 10 CFR 26.22 and the licensee's fitness-for-duty program documents.

On June 27, five supervisors representing the Instrumentation and Controls, Mechanical Maintenance, Health Physics, Mechanical Electrical and Facility Services organizations were interviewed regarding their understanding of behavior observation responsibilities and the ability to recognize aberrant behavior traits. Two Access Authorization/Fitness-for-Duty self-assessments, an audit, and event reports and loggable events for the four previous quarters were reviewed during June 25-29. On June 27, five individuals who perform escort duties were interviewed to establish their knowledge level of those duties. Behavior observation training procedures and records were reviewed on June 26.

b. Findings

No findings of significance were identified.

3PP2 Access Controla. Inspection Scope

The following activities were conducted during the period June 25-29, to verify that the licensee has effective site access controls, and equipment in place designed to detect and prevent the introduction of contraband (firearms, explosives, incendiary devices) into the protected area as measured against 10 CFR 73.55(d) and the Physical Security Plan and Procedures.

Site access control activities were observed, including personnel and package processing through the search equipment during peak ingress periods on June 25, 26, and 27, and vehicle searches, on June 25 and 26. On June 26, testing of all access control equipment: including metal detectors; explosive material detectors; and X-ray examination equipment was observed. The Access Control event log, an audit, and three maintenance work requests were also reviewed.

A review was conducted of two CRs generated and entered into the licensee's corrective action program. The specific CR's are identified in the list of documents contained in this report.

b. Findings

No findings of significance were identified.

#### 4. OTHER ACTIVITIES

##### 4OA1 Performance Indicator Verification

###### a. Inspection Scope

The inspector reviewed the licensee's programs for gathering and submitting data for the Fitness-for-Duty, Personnel Screening, and Protected Area Security Equipment Performance Indicators. The review included the licensee's tracking and trending reports, personnel interviews and security event reports for the Performance Indicator data collected from the 2nd quarter of 2000 through the 2nd quarter of 2001.

###### b. Findings

No findings of significance were identified.

##### 4OA2 Identification and Resolution of Problems

The inspectors identified a failure to properly identify and resolve issues associated with the EFW pump oil bubblers (see Section 1R15 for details). In addition, the licensee failed to identify and evaluate high debris level in the SW intake structure. This issue was associated with the violation for failure to have proper monitoring and acceptance criteria for the intake structure debris level (see Section 1R07 for details).

##### 4OA6 Meetings, including Exit

###### .1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. Gene St. Pierre and other members of licensee management following the conclusion of the inspection on July 11, 2001. The licensee acknowledged the findings presented.

The licensee did not indicate that any of the information presented at the exit meeting was proprietary.

.2 Site Management Visit

On June 7, 2001, Mr. Hubert Miller, Regional Administrator and Mr. Curtis Cowgill, Chief, Reactor Projects Branch 6, toured Seabrook Station and met with station personnel to review plant performance.

.3 End-of-Cycle Performance Meeting

On June 15, 2001, Mr. Richard Crlenjak, Deputy Division Director, Division of Reactor Projects, and Mr. Curtis Cowgill conducted the end-of-cycle performance meeting with Mr. Ted Feigenbaum and other members of licensee management. A separate public meeting was held in the evening with Mr. Cowgill presenting the NRC reactor oversight process and Seabrook Station's performance during the past year.

## ATTACHMENT

## SUPPLEMENTARY INFORMATION

a. Key Points of Contact

C. Brown	Processing Analyst
R. Faix	Engineering Supervisor
P. Freeman	Manager, Nuclear Design Engineering (Electrical)
M. Ginsburg	Assistant Chief - Burns
J. Grillo	Assistant Station Director
R. Hickok	NRC Coordinator
A. Kodal	Service Water System Engineer
R. LeGrand	Manager, Work Control and Outages
W. Leland	Manager, Chemistry/Health Physics
T. Nichols	Manager, Plant Engineering
J. Pandolfo	Manager, Security
J. Peschel	Manager, Regulatory Programs
B. Plummer	Manager, Operations
D. Roy	Manager, Nuclear Training
P. Ryan	Security Supervisor Operations
G. Sessler	System Engineer
R. Sherwin	Manager, Maintenance
G. St. Pierre	Station Director
J. Vargas	Director, Engineering
R. White	Manager, Nuclear Design Engineering (Mechanical)

b. List of Items Opened, Closed and DiscussedOpened and Closed:

05000443/2001-007-01	NCV	Inadequate procedures regarding debris levels in the service water intake structure.
05000443/2001-007-02	NCV	Failure to identify and correct in a timely manner degraded emergency feedwater pump oil bubblers.

c. List of Documents Reviewed**Heat Sink Inspection**Condition Reports

01-03578	SW-V-174 leaking
01-02738	SW-V-174 leaking
01-01842	SW-V-174 and 176 leaking
01-01784	SW-V-176 leaking
01-00960	SW-V-174 and 176 leaking
00-03701	SW-V-174 leaking
00-03510	SW-V-176 leaking
00-03212	SW-V-174 and 176 leaking
01-02804	SW Pump P-41D had step increase in vibrations
01-01528	SW Pumps P-41B and 110A had new design pumps per DCR 99-0028. New pumps have higher flow margin about 1000 gpm.
00-12846	During hydrolase of EDG jacket water HXs, a large amount of sediment removed.
00-12795	Two tubes partially blocked on "B" EDG HX.
00-12740	Tube sheet inspection of "A" PCCW HX
00-09155	Develop tube plugging guidelines for all Hxs.
00-09152	Thermal performance analysis of "B" EDG HX done using wrong number of tubes plugged.
00-08925	No safety evaluation done for differences between as-built and design heat transfer rates with tubes plugged for A and B EDG HXs
00-08360	"B" EDG HX thermal performance dropped below 10% margin
99-08924	Cooling tower spray header distribution piping has severe external corrosion
00-11673	Sand and silt accumulated in SW discharge piping to ocean
00-07931	During vent of SW flow indicator SW-FI-6150, the high side snubber was found plugged
01-04888	Determine if formal inspection required for SW metal expansion joints
99-16373	Discrepancy in design life of rubber expansion joints

Other Reports

SW System Performance Report, March 2001

SW System Walkdown Report, April 2, 2001

Report of Underwater Inspection of Service Water and Circulating Intake Structures, Performed October 16 - November 16, 2000

Report of Underwater Inspection of Offshore Intake and Discharge, Cooling Tower, Service Water, and Circulating Water Intake Pump Houses, Performed May 12 - June 6, 1997

Expert Panel Review - OR07 Train "A" Service Water Piping Inspection - Work Deferral Justification

DCR 99-0028 - Major Upgrade of Service Water Pump Parts - Columns, Bowls, Suction Bells, Shafting and Impellers with "Super Austenitic" Steel.

Rubber Expansion Joint Inspection Report - July 31 - August 1, 2000

Procedures/Documents

Plant Engineering Guideline 62 , Rev. 00, Service Water System Performance Monitoring  
 Service Water System Design Basis Document, Rev. 2, August 21, 2000  
 ES1850.017, Service Water Heat Exchanger Program

Calculations/Data

C-S-1-83612 Ocean and Cooling Tower Service Water Pump Design Flows  
 DG-E-42-B Temperatures HX Performance Data for Test on October 18, 2000  
 DG-E-42-A Temperatures HX Performance Data for Test on September 8, 2000  
 S-S-1-E-0073 PCCW Heat Exchanger Specification Data Sheet

**Security Inspection**

Site Access Program- Fitness for Duty Training  
 Physical Security and Access Authorization, Audit Report No. 01-A04-01  
 Fitness For Duty Semi-Annual Report, July - December, 2000  
 Fitness For Duty Semi-Annual Report, January - June, 2000  
 Security Loggable event report, 01/00-03/01  
 CR-01-03931, Cross Unit Tunnel Access  
 CR-01-04090, Contraband Detection Equipment Configuration Evaluation

d. List of Acronyms

CR	Condition Report
EDG	Emergency Diesel Generator
EFW	Emergency Feedwater
EP	Emergency Preparedness
ESFAS	Engineered Safety Features Actuation System
gpm	gallons per minute
HX	Heat Exchanger
MR	Maintenance Rule
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
OD	Operability Determination
OE	Operational Experience
PCCW	Primary Component Cooling Water
RCS	Reactor Coolant System
RFO	Refueling Outage
SCCW	Secondary Component Cooling Water
SDP	Significance Determination Process
SFP	Spent Fuel Pool Cooling
SI	Safety Injection
SSC	Structure, System, or Component
SSPS	Solid State Protection System
SUFW	Startup Feedwater Pump
SW	Service Water

TDEFW Turbine Driven Emergency Feedwater  
TS Technical Specifications