

July 29, 2003

Mr. Mark E. Warner  
Site Vice President  
c/o Mr. James M. Peschel  
FPL Energy Seabrook, LLC  
Seabrook Station  
P.O. Box 300  
Seabrook, NH 03874

SUBJECT: SEABROOK STATION - NRC INTEGRATED INSPECTION REPORT  
05000443/2003003

Dear Mr. Warner:

On June 28, 2003, the NRC completed an inspection at the Seabrook Nuclear Power Station. The enclosed report documents the inspection findings which were discussed on July 9, 2003 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.

This report documents three NRC-identified findings of very low safety significance (Green). Three of these findings were determined to involve violations of NRC requirements. However, because of their very low safety significance and because they are entered into your corrective action program, the NRC is treating these findings as non-cited violations, in accordance with Section VI.A of the NRC Enforcement Policy. If you contest the non-cited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Seabrook Station.

Since the terrorist attacks on September 11, 2001, the NRC has issued five Orders and several threat advisories to licensees of commercial power reactors to strengthen licensee capabilities, improve security force readiness, and enhance controls over access authorization. In addition to applicable baseline inspections, the NRC issued Temporary Instruction 2515/148, "Inspection of Nuclear Reactor Safeguards Interim Compensatory Measures," and its subsequent revision, to audit and inspect licensee implementation of the interim compensatory measures required by order. Phase 1 of TI 2515/148 was completed at all commercial power nuclear power plants during calendar year 2002 and the remaining inspection activities for Seabrook Station were completed during calendar year 2003. The NRC will continue to monitor overall safeguards and security controls at Seabrook Station.

Mr. Mark E. Warner

2

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm.html>

Sincerely,

*/RA/*

Brian J. McDermott, Chief  
Reactor Projects Branch 6  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000443/2003003  
w/Attachment: Supplemental Information

cc w/encl:

J. A. Stall, FPL Senior Vice President, Nuclear & CNO

J. M. Peschel, Manager - Regulatory Programs

G. F. St. Pierre, Station Director - Seabrook Station

R. S. Kundalkar, FPL Vice President - Nuclear Engineering

D. G. Roy, Nuclear Training Manager - Seabrook Station

J. Devine, Polestar Applied Technology

D. Bliss, Director, New Hampshire Office of Emergency Management

D. McElhinney, RAC Chairman, FEMA RI, Boston, Mass

R. Backus, Esquire, Backus, Meyer and Solomon, New Hampshire

D. Brown-Couture, Director, Nuclear Safety, Massachusetts Emergency Management Agency

S. McGrail, Director, Massachusetts Emergency Management Agency

R. Hallisey, Director, Dept. of Public Health, Commonwealth of Massachusetts

M. Metcalf, Seacoast Anti-Pollution League

D. Tefft, Administrator, Bureau of Radiological Health, State of New Hampshire

S. Comley, Executive Director, We the People of the United States

W. Meinert, Nuclear Engineer, Massachusetts Municipal Wholesale Electric company

R. Shadis, New England Coalition Staff

P. Brann, Assistant Attorney General

M. S. Ross, Attorney, Florida Power & Light Company

Office of the Attorney General

Town of Exeter

Board of Selectmen

Distribution w/encl: (VIA E-MAIL)

- H. Miller, RA
- J. Wiggins, DRA
- J. Jolicoeur, EDO
- J. Clifford
- V. Nerses, PM, NRR
- B. McDermott, DRP
- K. Jenison, DRP
- G. Dentel, SRI - Seabrook
- DRS Branch Chief (5)
- T. Moslak, DRS
- P. Frechette, DRS
- N. McNamara, DRS
- Region I Docket Room (with concurrences)

DOCUMENT NAME: C:\ORPCheckout\FileNET\ML032100721.wpd

After declaring this document "An Official Agency Record" it **will** be released to the Public.

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	RI/DRP		RI/DRP	E	RI/DRP			
NAME	GDentel/ <i>KMJ for</i>		KJenison/ <i>KMJ</i>		BMcDermott/ <i>BJM</i>			
DATE	07/29/03		07/29/03		07/29/03			

OFFICIAL RECORD COPY

**U. S. NUCLEAR REGULATORY COMMISSION**

REGION I

Docket No.: 05000443

License No.: NPF-86

Report No.: 05000443/2003003

Licensee: Florida Power & Light Energy Seabrook, LLC (FPL)

Facility: Seabrook Station, Unit 1

Location: Post Office Box 300  
Seabrook, New Hampshire 03874

Dates: March 30, 2003 to June 28, 2003

Inspectors: Glenn Dentel, Senior Resident Inspector  
Javier Brand, Resident Inspector  
Martha Barillas, Reactor Engineer  
Kenneth Jenison, Senior Project Engineer  
Barry Norris, Senior Reactor Engineer  
Paul Frechette, Security Specialist  
Greg Smith, Senior Security Specialist

Accompanied by: Alexander Velazquez, NRR Intern

Approved by: Brian J. McDermott, Chief  
Projects Branch 6  
Division of Reactor Projects

## TABLE OF CONTENTS

	<u>Page</u>
SUMMARY OF FINDINGS .....	iii
REACTOR SAFETY .....	1
1R04 Equipment Alignment .....	1
1R05 Fire Protection .....	2
1R07 Heat Sink Performance .....	3
1R11 Licensed Operator Requalification .....	6
1R12 Maintenance Rule Implementation .....	6
1R13 Maintenance Risk Assessments and Emergent Work Evaluation .....	7
1R14 Personnel Performance During Non-routine Plant Evolutions .....	8
1R15 Operability Evaluations .....	9
1R16 Operator Work-Arounds .....	12
1R17 Permanent Plant Modifications .....	13
1R19 Post-Maintenance Testing .....	13
1R22 Surveillance Testing .....	14
1R23 Temporary Plant Modifications .....	17
SAFEGUARDS .....	17
3PP2 Access Control .....	17
3PP3 Response to Contingency Events .....	18
3PP4 Security Plan Changes .....	18
OTHER ACTIVITIES [OA] .....	19
4OA1 Performance Indicator Verification .....	19
4OA2 Problem Identification and Resolution .....	20
4OA6 Meetings, including Exit .....	21
SUPPLEMENTAL INFORMATION .....	A-1
KEY POINTS OF CONTACT .....	A-1
LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED .....	A-1
LIST OF DOCUMENTS REVIEWED .....	A-2
LIST OF ACRONYMS .....	A-4

## SUMMARY OF FINDINGS

IR 05000443/2003-003; 03/30/2003 - 06/28/2003; Seabrook Station, Unit 1; Heat Sink Performance, Operability Evaluations, and Surveillance Testing.

The report covered a 13-week period of inspection by resident and regional inspectors. Three Green non-cited violations (NCVs) were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

### A. NRC-Identified and Self-Revealing Findings

#### Cornerstone: Mitigating Systems

- Green. The inspectors identified a non-cited violation of 10 CFR 50, Appendix "B," Criteria XI, "Test Control." The licensee failed to develop a test program for routine performance monitoring of the enclosure air handling (EAH) system, which is designed to maintain the room temperatures for safety equipment within design limits during normal and accident conditions. Such testing is required since the EAH system cools the charging pumps, safety injection pumps, the residual heat removal pumps and heat exchangers, and the containment spray pumps and heat exchangers.

The finding is more than minor because it affected the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding was of very low safety significance because the EAH-supported equipment remained operable and there was no loss of safety function. (Section 1R07)

- Green. The inspectors identified a non-cited violation of 10 CFR 50, Appendix "B," Criterion XVI, "Corrective Action." Seabrook did not perform a root cause analysis for either of two failures of diodes associated with 4kV safety-related breakers and in one case did not take corrective actions to prevent recurrence.

The finding is more than minor because it affected the Mitigating Systems cornerstone objective of ensuring the reliability of systems that respond to initiating events to prevent undesirable consequences. The reliability of 4kV breakers was reduced based on the multiple failures that occurred and the potential for additional failures. The inspectors determined that the finding was of very low safety significance since the failures in 2002 and 2003 would not have resulted in a loss of function for the mitigating system or train. (Section 1R15)

- Green. The inspectors identified a non-cited violation of Technical Specification 3.8.1.1, for failure to properly test the "B" emergency diesel generator (EDG) for a potential common cause issue on the "A" EDG. On June 10, Seabrook had identified a defective condition on one exhaust valve assembly of the "A" EDG, which could have affected operability and/or ability to perform its intended safety function. Although not considered a corrective action violation, this was the second violation in twelve months related to TS required testing of the redundant EDG for common cause potential.

The finding is considered more than minor because if the condition had existed on the remaining EDG and was left uncorrected, it could have degraded and impacted the operability and availability of the remaining EDG. The finding was determined to be of very low safety significance because: 1) the "B" EDG was successfully tested under fully loaded conditions on June 19; 2) an extent of condition evaluation was completed with no adverse conclusions; and 3) operability determinations for the potential common cause issues were completed, concluding the "B" EDG was operable. (Section 1R22)

B. Licensee-Identified Violations

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



## REPORT DETAILS

### Summary of Plant Status

The plant began the period at full rated thermal power and operated at or near full power for the entire report period.

#### **1. REACTOR SAFETY**

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity [REACTOR-R]

#### 1R04 Equipment Alignment

##### a. Inspection Scope

##### Full System Walkdown - Emergency Diesel Generators (EDGs)

The inspectors performed a full system walkdown of the emergency diesel generators (EDG) and a sample of the EDG support systems, involving equipment in both trains, and associated piping and in-line components.

The inspectors reviewed the following documents to support the walkdown and to verify proper system alignment:

- Piping and instrumentation drawings (P&IDs) for the EDG, EDG jacket water cooling, EDG fuel oil, EDG lubrication oil, EDG starting air, EDG electrical vital and control circuits, EDG ventilation system;
- System health reports for the EDG and service water systems;
- Technical Specification (TS) 3.8.3 and other supporting TSs;
- A sample of historical condition reports (CRs) and CRs that were generated during this inspection period that applied to the EDG and its support systems.

##### Partial System Walkdowns

The inspectors performed the following partial system walkdowns:

- On April 12, the inspectors performed a walkdown of the redundant battery chargers, inverters, and associated breakers while the "B" inverter was removed from service to replace a transformer and seven capacitors.
- On April 14, the inspectors performed a walkdown of the "B" spent fuel pool system while the "A" spent fuel pool pump was removed from service to repair the mechanical seal.
- On April 30, the inspectors performed a walkdown of the "A" charging pump while the "B" charging pump was out of service for scheduled maintenance.

Enclosure

- On June 9, the inspectors performed a walkdown of the ventilation systems associated with the west steam chase, the control building, and the containment enclosure. In addition, the inspectors reviewed CR 03-05688 which evaluated an unmonitored release pathway from the radiological controlled area via the west steam chase ventilation. The inspectors interviewed the system engineer and chemistry personnel, and reviewed a sample of containment purge dose calculations from 1997 to present, to verify that any dose from radioactive effluents via the unmonitored release pathway remained within 10 CFR Part 50, Appendix I requirements. In addition, the inspectors verified that adequate corrective actions were initiated.
- On June 18 and 19, the inspectors performed a walkdown of the startup feedwater pump and associated piping following an unexpected pressure pulse that occurred on the system during valve testing on June 18. The inspectors examined pipe supports, piping conditions, and other structural items to determine whether the system remained operable.

Documents reviewed during the inspections are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors examined several areas of the plant to assess: 1) the control of transient combustibles and ignition sources; 2) the operational status and material condition of the fire detection, fire suppression, and manual fire fighting equipment; 3) the material condition of the passive fire protection features (fire doors, fire dampers, fire penetration seals, etc.); and 4) the compensatory measures for out-of-service or degraded fire protection equipment. The following areas were inspected:

- Primary Component Cooling Water Room, 25' elevation;
- Residual Heat Removal Vaults, Trains "A" and "B," (-) 61' and (-) 50' elevations;
- Fuel Storage Building (all elevations);
- Mechanical Penetration Area, (-) 34'-6" and (-) 26'-0" elevations;
- Mechanical Penetration Area, (-) 20', (-) 11' and (-) 8' elevations;
- Control Building - Control Room Complex, 75' elevation;
- Emergency Diesel Generator Building (all elevations).

The inspectors reviewed the following documents:

- Fire Protection Pre-Fire Strategies and Fire Hazard Analysis;
- Compensatory List of Fire Protection Equipment out-of-service;
- Fire Protection Equipment Layout Drawings;

- IX1642.922, "CP-446 Mechanical Penetration Area Fire Detection Operational Test";
- Technical Requirements Manual Requirements;
- Fire Protection System Performance Results;
- FP2.1 "Control of Ignition Sources."

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

1. Resident Inspection Sample - Residual Heat Removal Heat Exchangers

a. Inspection Scope

The inspectors examined residual heat removal (RHR) heat exchangers (HXs) to determine whether the components can fulfill their design function. The HXs receive their cooling from the primary component cooling water system (PCCW). The inspectors reviewed the monitoring data used to evaluate the thermal performance of the RHR HXs during the last three refueling outages. The inspectors also reviewed PCCW chemistry data to determine if there was any indication of degradation of the RHR HXs.

The inspectors reviewed condition reports to verify chemical parameters out of the control range and abnormal temperature trends were identified and resolved. In addition, the inspectors interviewed plant engineers and chemistry personnel to evaluate the process used to ensure a proper functionality of the RHR HXs and reviewed Generic Letter (GL) 89-13 for its applicability to the RHR HXs.

The following documents were reviewed:

- CRs 01-13539, 00-09151, 00-10256, 98-15495, 99-15352, 98-19263, 98-2042, 98-15495, 97-07308;
- CP3.1, "Primary Chemistry Control Program," Rev. 27;
- PEG-30, "Performance Monitoring Guidelines," Rev. 4;
- GL 89-13, Service Water System Problems Affecting Safety-Related Equipment;
- ASTM E230-93, Standard Temperature-Electromotive Force Tables for Standardized Thermocouples.

b. Findings

No findings of significance were identified.

2. Biennial Heat Sink Inspection

a. Inspection Scope

The inspectors reviewed Seabrook's methods (inspection, cleaning, maintenance, and performance monitoring) used to ensure the heat removal capability of the following safety-related systems and components: (1) the mechanical draft evaporative cooling tower; (2) the area room coolers for the emergency core cooling systems (ECCS) and the EDGs; and (3) the containment building spray (CBS) heat exchanger. The cooling tower was designed to function as the ultimate heat sink if the service water system were to become unavailable. The ECCS room cooling function is provided by the containment enclosure air handling (EAH) system, and the EDG room cooling function is provided by the diesel air handling (DAH) system. The CBS heat exchanger and the EAH cooling coils are cooled by the PCCW system, which is cooled by the service water system (the normal ultimate heat sink).

As part of the inspection, the inspectors reviewed Seabrook's response to GL 89-13. In addition, the inspectors walked down the selected systems, and reviewed applicable sections of the Updated Final Safety Analysis Report (UFSAR), the TS, P&IDs, system performance reports, and surveillance and operating procedures. The inspectors also reviewed CRs and work orders (WOs) for the selected systems to determine if Seabrook was properly identifying and resolving problems.

b. Findings

Introduction. The inspectors identified that Seabrook had failed to develop a test program for routine performance monitoring of the EAH system, which was designed to maintain the area temperatures of engineered safety function equipment within design limits. This finding was determined to be of very low safety significance (Green) and a non-cited violation (NCV) of 10 CFR 50 Appendix "B," Criteria XI, "Test Control."

Description. The EAH system was designed to provide a safety-related support function. Specifically, it was designed to maintain safety-related equipment (charging pumps, safety injection pumps, residual heat removal pumps and heat exchangers, and containment spray pumps and heat exchangers) at or below their maximum design operating temperatures during normal and accident conditions. The EAH system was credited with performing this function in UFSAR Section 9.4.6, and the system was identified as a maintenance rule risk significant system. During normal conditions, one-half of the system air is replaced with fresh air from outside. Under accident conditions, the outside air is isolated and the warm air in the system is recirculated, such that EAH becomes a closed system.

During the review, although monitoring of PCCW flow to the HX was conducted, Seabrook did not provide information documenting the completion of routine performance monitoring tests for the EAH system. NRC GL 89-13 states that an intermediate system (i.e., PCCW) used between safety-related items and the ultimate heat sink performs the function of the service water system and is included in the scope of the generic letter. An acceptable program for meeting the objective of the second recommended action is contained in Enclosure 2 to GL 89-13, "Program for Testing Heat Transfer Capability." The enclosure recommends monitoring, recording, and trending the cooling water flow rate and the inlet and outlet temperatures for all affected

heat exchangers. For air-to-water heat exchangers, the enclosure recommends efficiency testing under maximum obtainable heat load to verify heat removal capacity, with results corrected to design conditions. 10 CFR 50, Appendix "B," Criterion XI, "Test Control," requires the licensee to establish a test program to assure that all testing required to demonstrate that systems will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents.

Seabrook initiated CR 03-04899 to document the lack of performance monitoring to verify that the EAH system has not degraded since pre-operational testing.

Analysis. This finding is a performance deficiency because Seabrook failed to test the heat removal capability of the EAH system on a periodic basis since the initial pre-operational testing. Seabrook could not provide documented evidence that the function and operability of this safety-related support system were monitored as part of the station test control program.

Traditional enforcement does not apply because the issue did not have any actual safety consequences or potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements or Seabrook's procedures.

The inspectors determined that this finding was more than minor because it affected the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was associated with the attribute of procedure quality (pre-event testing procedures). The inspectors determined that the finding was of very low safety significance (Green) by the SDP Phase 1 screening worksheet for Mitigating Systems because the EAH-supported equipment remained operable and there was no identified loss of safety function. The inspectors did not identify any indications of degradation of the system during walkdowns and Seabrook did not identify any potential air-cooling performance issues through their monitoring of high temperature alarms and local temperature indicators in the pump cubicles.

Enforcement. 10 CFR 50, Appendix "B," Criterion XI, "Test Control," requires a test program be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents.

Contrary to this, Seabrook had not established written procedures to demonstrate that the safety-related EAH system was operating satisfactorily. Such testing is required since the EAH system cools required safety-related mitigating equipment to support emergency core cooling and containment spray functions. However, because of the very low safety significance of this issue and because it was entered into Seabrook's corrective action program as CR 03-04899, this issue was treated as a Non-Cited Violation (NCV), consistent with Section VI.A of the NRC Enforcement Policy.  
**(NCV 05000443/2003003-01, Enclosure Air Handling System Testing)**

1R11 Licensed Operator Requalification1. Quarterly Resident Inspector Reviewa. Inspection Scope

On April 17, 2003, 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 or not deficiencies were identified and discussed during critiques.

b. Findings

No findings of significance were identified

1R12 Maintenance Rule Implementationa. Inspection Scope

The inspectors evaluated Maintenance Rule (MR) implementation for the enclosure air handling (EAH) and EDG systems. The inspectors reviewed the effectiveness of maintenance through the review of CRs, minor modifications, operator work-arounds, WOs, historical performance, system availability determinations, performance indicator calculations, and overall system performance. The following documents were reviewed:

- Last nine months of condition reports for EAH, selected items were reviewed in greater detail;
- a sample of approximately 82 CRs for the EDGs and supporting systems;
- MR scoping documents and MR performance criteria;
- EAH and EDG System Health Reports;
- PEG-10 System Walkdown Reports for EAH;
- MR performance data including maintenance rule function failure (MRFF) data and unavailability ratios.

Based on issues identified in the review of above documents, the inspectors assessed: 1) the application for MR scoping and MR reliability/availability performance criteria; 2) the corrective actions for deficient conditions; 3) the extent of condition reviews for common cause issues; 4) the contribution of deficient work controls or work practices to any degraded conditions and availability; 5) the cumulative effect of a large maintenance backlog; and 6) the impact of skid-mounted component testing and performance monitoring.

b. Findings

No findings of significance were identified.

## 1R13 Maintenance Risk Assessments and Emergent Work Evaluation

### a. Inspection Scope

The inspectors reviewed the scheduling and control of maintenance activities in order to evaluate the effect on plant risk. The inspectors conducted interviews with operators, risk analysts, maintenance technicians, and engineers to assess their knowledge of the risk associated with the work, and to ensure that other equipment was properly protected. The inspectors reviewed the routine planned maintenance and emergent work for the following equipment removed from service and evaluated the mitigating actions against Seabrook procedures, Maintenance Manual 4.5, "Configuration Control During Maintenance and Troubleshooting," and Work Management Manual 10.1, "On-Line Maintenance."

- On April 16, the inspectors reviewed the risk associated with scheduled diagnostic testing of the motor operator for the containment building spray (CBS) valve CBS-V-2. The valve is the common suction line for both the "A" CBS and "A" RHR pumps. The inspectors reviewed the on-line maintenance assessment and reviewed other planned work activities for the day.
- On May 13, the inspectors reviewed the risk associated with maintenance activities on a service water pump and a service water isolation valve. The inspectors evaluated the calculated risk using Seabrook "safety monitor."
- On May 14, the inspectors reviewed Seabrook's response to intermittent chattering of a reactor protection system auxiliary relay. Troubleshooting by instrumentation and control (I&C) technicians and system engineers determined that the relay was associated with the alarm circuit and did not involve a reactor trip function. The inspectors reviewed the troubleshooting plan and conducted interviews to assess Seabrook's evaluation of the potential risk associated with the relay chattering and the troubleshooting activities. In addition, the inspectors observed portions of the associated work activity (WO 0319391).
- On June 3, the inspectors reviewed the risk associated with maintenance activities to replace a house power supply for the main turbine electro-hydraulic control system. The power supply was drifting high causing unintended movement of the turbine steam supply valves which resulted in a minor reactor thermal power transients. The inspectors attended the pre-job brief and conducted interviews to assess Seabrook's evaluation of the potential risk associated with the house power supply replacement. In addition, the inspectors observed portions of the associated work activity (WO 0319651), verified the proper use of procedures, and reviewed the engineering apparent cause evaluation documented in CR 03-04717.
- On June 9 to June 13, the inspectors reviewed the scheduling and control of EDG emergent maintenance activities in order to evaluate the effect of these activities on plant risk. The inspectors reviewed the routine planned

maintenance and resultant emergent work for the EDG and the starting air and lubrication supporting systems.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-routine Plant Evolutions

1. Loss of Instrument Air Compressors 137A and 137B

a. Inspection Scope

On April 4, the "A" instrument air compressor tripped due to high resistance on the starter auxiliary contacts. The redundant train, "B" instrument air compressor picked up the load and subsequently tripped. Upon troubleshooting, Seabrook determined "B" compressor tripped due to a failed controller. At the time of the event, the operators took action to start a temporary backup compressor and to restart the "A" compressor to keep pressure above 100 psig. No adverse plant conditions were experienced.

The inspectors reviewed operator logs, plant computer data and Seabrook's Abnormal Procedures, ON1242.01 "Loss of Instrument Air" to verify proper operator response to the trip of the two instrument air compressors. The inspectors also interviewed operators and the system engineer.

b. Findings

No findings of significance were identified.

2. "B" Vital Inverter Transformer and Tuning Capacitors Replacement

a. Inspection Scope

From April 2 to 12, the inspectors reviewed the activities associated with replacement of the "B" inverter transformer and tuning capacitors. The replacements were made to eliminate intermittent ground alarms experienced in the Bus 11B ground detector panel (ED-CP-232) since December 2002. The replacement required the removal of the "B" vital inverter from service and the momentary de-energization of the associated power panel. In addition, the work involved use of the reactor trip bypass breaker which required entry into a six-hour TS shutdown action statement. The inspectors reviewed the on-line maintenance plan, the plant engineering action register, and procedure OS1046.24, "Removing EDE-I-1B From Service During Power Operation," Rev. 0. In addition, the inspectors attended the pre-job briefings, performed field walkdowns, interviewed maintenance technicians, operators and the system engineer, and observed portions of associated work activities to assess the effect on plant safety.

b. Findings



No findings of significance were identified.

3. Startup Feedwater System Pipe Water Hammer

a. Inspection Scope

On June 18, a "water hammer" or pressure transient occurred in the startup feedwater system. This condition occurred during routine surveillance testing as a result of the failure of a pressure control valve in the keep-fill system. The inspectors reviewed operator actions in response to the condition, the initial evaluation of the condition including the operability determination for the startup feedwater system, and immediate compensatory/corrective actions. The startup feedwater pump can function as a backup pump for the emergency feedwater system.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

1. 4kV Breaker Diode Failures

a. Inspection Scope

The inspectors reviewed the operability determination for safety-related 4kV breakers following identification of a failed diode associated with the "C" service water pump breaker on April 21, 2003 (CR 03-04364). The inspectors also reviewed the immediate corrective actions taken and corrective actions for three previous diode failures (CRs 03-00043, 01-04512, and 00-11301).

b. Findings

Introduction. The inspectors identified that Seabrook failed to perform cause analyses for two failures of diodes associated with 4kV safety-related breakers and in one case failed to take corrective actions to prevent recurrence. This finding was determined to be of very low safety significance (Green) and was characterized as an NCV of 10 CFR 50, Appendix "B," Criterion XVI, "Corrective Action."

Description. On April 21, 2003, during testing, Seabrook identified a failed diode associated with the "C" service water pump 4kV breaker. The diode had failed by allowing excessive reverse current. This excessive reverse current would prevent a second closure of the breakers under certain scenarios. The service water breaker diode failed during testing at higher than normal voltage; therefore, actual performance when called upon was indeterminate. Seabrook had previous diode failures associated with excessive reverse current as listed:

- "B" containment building spray pump breaker on October 25, 2000;

- "D" primary component cooling water pump breaker on May 15, 2001;
- "A" charging pump breaker on December 26, 2002.

Seabrook's cause analysis following the 2000 failure was that the failure was a single random failure and the method of failure (reverse leakage) was unique. Following the additional failures in 2001 and 2002, Seabrook did not perform cause evaluations nor was the original cause analysis revisited. Corrective action was not taken following the 2001 failure. Corrective actions were taken following the 2002 event including identifying the need to further evaluate and test the potentially affected population of 4kV breakers. Following each failure, the individual diode, affected by the failure, was replaced.

Analysis. Seabrook's failure to evaluate the cause of 4kV breaker diode failures and to take corrective action for one of the failures is considered a performance deficiency since the corrective action program is required to assure the cause of significant conditions is determined and corrective action taken to preclude repetition. Traditional enforcement does not apply because the issue did not have any actual safety consequences or potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements or Seabrook's procedures.

The finding was more than minor because it affected the Mitigating Systems cornerstone objective of ensuring the reliability of systems that respond to initiating events to prevent undesirable consequences. The reliability of 4kV breakers was reduced based on the multiple failures that occurred and the potential for additional failures. Using Appendix "A," Phase 1 of Manual Chapter 0609, the finding was determined to be of very low safety significance (Green) since the failures in 2002 and 2003 would not have resulted in loss of function for the mitigating system or train. Although the "D" service water pump was potentially affected, Seabrook has two service water pumps per train; therefore, the loss of one pump does not result in loss of function for the mitigating train.

Enforcement. 10 CFR 50 Appendix "B" Criterion XVI, "Corrective Action," states, in part, that "in the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition." Contrary to the above, Seabrook failed to evaluate the cause of 4kV breaker diode failures in 2001 and 2002 and failed to take corrective actions to preclude repetition following the failure in 2001. Because this violation was of very low safety significance and Seabrook entered this finding into its corrective action program (CR 03-05854), this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy. **(NCV 05000443/2003003-02, Root Cause Analysis for Diode Failures)**

## 2. Emergency Diesel Generator Operability Evaluations

The inspectors reviewed two operability determinations (ODs), and related historical ODs, in order to verify that the identified conditions did not adversely affect safety

system operability or plant safety. CR 03-05007 "Potential Cracked Belleville Washer on Cylinder Head Exhaust Valves" and CR 03-05105 "Degraded Lube Oil Pressure" were assessed with other related ODs, to determine if the "B" EDG was evaluated for a common mode failure in consideration of the conditions identified by the Seabrook on the "A" EDG. The inspectors interviewed engineering personnel, reviewed applicable technical reference material, and verified the operation of both EDGs, supporting systems and related components. The inspectors assessed Seabrook's event response, root cause evaluation, extent of condition reviews, corrective actions, and the value added by Seabrook's Quality Organization. Finally, the activities of the Site Operations Review Committee (SORC) were observed and evaluated.

b. Findings

No findings of significance were identified.

3. Additional Operability Evaluations

a. Inspection Scope

The inspectors reviewed several ODs in order to determine that the identified conditions did not adversely affect safety system operability or plant safety. In addition, where a component was determined to be inoperable, the inspectors verified the TS limiting condition for operation implications were properly addressed. The inspectors performed field walkdowns, interviewed personnel, and reviewed the following items:

- CR 03-02974, which addresses the "A" and "B" instrument air compressor trips. The inspectors reviewed the Plant Engineering Action Plan Register, UFSAR section 9.3.1, operator shift logs, and WO 0311534 to determine the impact on operability of service air system during the air compressor trips on April 4 and assess their overall impact on the plant.
- CR 03-03488, which evaluates a relay which failed to meet the acceptance criteria during a loss of a voltage surveillance test. The relay was repaired and later replaced following the testing. The inspectors reviewed the CR, interviewed maintenance technicians and engineers, and WO 0312851 to determine past operability of the component and the overall impact on plant systems.
- OD 03-3600, which evaluated increased levels of copper in the charging pump motor (CS-P-2A) lubricating oil samples. Seabrook's evaluation of this condition identified a degraded trend (increase) since March 2002. The inspectors reviewed the history of condition reports (CR 02-04623, 02-13869, 03-03480, and 03-3600), interviewed engineering personnel, reviewed the history of lubricating oil samples and vibration data for both the pump and the motor, and performed field walkdowns to assess Seabrook's conclusion that the function of the "A" charging pump was not affected.

b. Findings

No findings of significance were identified.

1R16 Operator Work-Arounds

a. Inspection Scope

The inspectors reviewed Seabrook's current listing of operator work-arounds and operator impact items. The inspectors examined the Operations Administrative Instruction OAI.20 "Operations Work-arounds and Operational Impact Items," Rev. 20 and verified that this procedure provided the necessary guidance to adequately address the cumulative effects these work-arounds had on the operation, reliability, and availability of affected systems. The inspectors also reviewed selected CRs to verify the items were properly tracked and scheduled for completion based on the priority and impact on the plant. The inspectors evaluated whether the work-arounds adversely impacted the ability of the operators to implement emergency procedures or respond to plant transients.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications

a. Inspection Scope

The inspectors reviewed plant modification MSE 03-0048, which removed the flood barriers installed in the three charging pumps cubicles to eliminate a significant personnel trip hazard. The engineering evaluation for the modification, determined that the existing 12 inch high removable metal flood barriers had been installed in April 1976 per design change DCN 08/0139, and that they did not perform any flood protection function. The evaluation concluded that a much smaller elevated threshold was required for the design basis fire in each of the three charging pumps' cubicles. Per MSE 03-0048, the three plates were replaced with new 3/4 inch plates. The inspectors performed field walkdowns, examined the new barriers, interviewed the design engineer, and reviewed the UFSAR, the 10 CFR 50.59 screening, and engineering evaluation EE-99033, "Charging Pump Cubicle Internal Flooding," Rev. 0.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed the on-line maintenance assessment form, and several post-maintenance testing (PMTs) activities to ensure: 1) the PMT was appropriate for the

scope of the maintenance work completed; 2) the acceptance criteria were clear and demonstrated operability of the component; and 3) the PMT was performed in accordance with procedures. The following PMTs was reviewed:

- On April 9, IN1649.902, "Setup and Functional Test of Service Air Compressor 137B," Rev. 0, following replacement of the failed controller. The inspectors reviewed WO 0311519, condition reports and interviewed the system engineer.
- On April 12, LS0556.09, "Replacement of Ferro-Resonant Transformer Tuning Capacitors-7.5 KVA Westinghouse Inverters," Rev. 1, following replacement of the "B" inverter transformer and tuning capacitors. In addition, the inspectors reviewed WO 0305866, observed portions of the work activities, and interviewed electrical maintenance technicians and the system engineer.
- On April 24, LX0563.06, "4.16 KV Loss of Voltage Protection Monthly Surveillance," Rev. 3, following replacement of a failed Bus 5 lockout relay (27B2) per WO 0312851.
- On May 1 and 2, OX1456.01, "Charging Pump A and B Quarterly Flow and Valve Stroke Test and 18 Month Remote Position Indication Verification," Rev. 10, following completion of several scheduled work activities in the "B" charging pump including an oil change, oil reservoir gasket replacement, oil leaks repair at pipe plugs and speed increaser housing, and inspection and lubrication of the pump coupling.
- On June 20, OX1436.02, "Turbine Driven Emergency Feedwater Pump Quarterly and 18 Month Surveillance Test and Monthly Valve Alignment," Rev. 8, following maintenance on steam traps (1-MSD-T-10 and 11) in the steam supply portion of the emergency feedwater system. The inspectors reviewed the WOs 0305813/0305814 and interviewed various work control personnel and the system engineer.
- On June 23, OX1456.01, "Charging Pump A and B Quarterly Flow and Valve Stroke Test and 18 Month Remote Position Indication Verification," Rev. 10 following inspection of the "B" charging pump motor inboard bearing and housing. The inspectors reviewed WO 0321101, interviewed maintenance technicians and the system engineer, and observed portions of the work activities. The inspection was performed to evaluate discoloration of the lubricating oil and identification of increased wear particles following a recent oil change and oil sample analysis. The inspectors also performed a documentation review of the completed "B" charging pump PMT.
- On June 9 to 13, the inspectors reviewed the on-line maintenance assessment form, numerous technical testing documents and observed portions of several PMT activities related to the removal from and return to service of the "A" EDG.

b. Findings

Enclosure

No findings of significance were identified.

1R22 Surveillance Testing

1. EDG Testing

a. Inspection Scope

The inspectors observed portions of several surveillance testing activities on the EDGs and supporting systems to verify that the EDGs, supporting systems and components were 1) capable of performing their intended safety function, 2) verified to be in state of operational readiness, 3) not subject to a common mode failure and 4) in compliance with required TS and surveillance procedure requirements. In support of the observations, the inspectors performed the following: 1) attended some of the pre-evolution briefings; 2) performed system and control room walkdowns; 3) observed operators and technicians perform test evolutions; 4) observed system engineers guide and plan the recovery of the "A" EDG; 5) observed several root cause and extent of condition engineering efforts; 6) reviewed EDG and supporting system parameters; and 7) interviewed systems engineers, design engineers, control room operators, field operators, QA oversight personnel, and site management.

b. Findings

Introduction. The inspectors determined that Seabrook did not meet its TS requirements when a condition was identified during routine maintenance on the "A" EDG that represented the potential for a common mode failure mechanism of the remaining EDG. Specifically, Seabrook identified a defective condition on the "A" EDG, #3 cylinder, exhaust valve assembly. The failure to meet the requirements of TS was assessed as having very low safety significance (Green) and was determined to be a non-cited violation of 10 CFR 50, Appendix "B," Criterion XVI "Corrective Action."

Description. On June 10, Seabrook identified a defective condition on one exhaust valve assembly of the "A" EDG, which could have affected its operability and/or ability to perform its intended safety function. At the time of discovery, the "A" EDG was undergoing scheduled online maintenance. To determine applicability of a common cause, TS 3.8.1.1 requires that the operability of the remaining EDG be demonstrated within 24 hours, by verifying the remaining EDG starts from standby conditions and functions (fully loaded) for a period of 60 minutes. Contrary to the TS requirements, an unloaded run was conducted within the 24-hour period following discovery.

Analysis. The finding was considered more than minor because if the condition had existed on the remaining EDG and was left uncorrected, it could have degraded and impacted the operability and availability of the remaining EDG. Using Appendix "A" Phase 1 of Manual Chapter 0609, the finding was determined to be of very low safety significance (Green) because: 1) a fully loaded operation of the "B" EDG was demonstrated subsequent to this finding on June 19; 2) an extent of condition evaluation

was accomplished by Seabrook; and 3) two operability determinations were performed that found the "B" EDG to be operable.

Although not considered a corrective action violation, this was the second violation in twelve months related to TS required testing of the redundant EDG for common cause potential (see NRC Inspection Report 05000443/2002010).

Traditional enforcement does not apply because the issue did not have any actual safety consequences or potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements or Seabrook's procedures.

Enforcement. TS 3.8.1.1 requires with one EDG inoperable demonstrate operability of the remaining EDG by performing TS 4.8.1.1.2a.5 within 24 hours of identification of a potential common mode failure (paraphrased from the TS and associated footnote). TS 4.8.1.1.2a.5 requires starting the remaining EDG and through its footnote to load and operate the EDG for one hour. Contrary to the above, Seabrook failed to perform a loaded run of the "B" EDG within 24 hours following identification of a potential common mode failure on the "A" EDG. Because this violation was of very low safety significance and Seabrook entered this finding into its corrective action program (CR 03-05753), this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy. **(NCV 05000443/2003003-03, Post Maintenance Testing of Emergency Diesel Generators)**

## 2. Additional Surveillance Testing Samples

### 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 TSs and surveillance procedures.

The inspectors attended some of the pre-evolution briefings, performed system and control room walkdowns, observed operators and technicians performed test evolutions, reviewed system parameters, and interviewed the system engineers and field operators. The following surveillance procedures were reviewed.

- On April 17, OS1414.04, "Spent Fuel Pumps Test," Rev. 0
- On May 15, LX0563.06, "4.16 KV Loss of Voltage Protection Monthly Surveillance," Rev. 3.
- On May 20, LX0558.01, "4.16 KV Breaker Inspection, Testing, and PM," Rev. 1.
- On May 20, the inspectors performed a sample inspection of Seabrook's procedures used for testing safety-related logic circuits. The inspectors used GL

96-01 and reviewed the applicable electrical logic diagram, to ensure that all portions of the logic circuit for the overpower-delta temperature function are adequately covered in the surveillance procedures and that complete testing of the associated components is being performed as required by the TSs. The inspectors reviewed drawing 1-NHY-509007, "Loop I Delta T/Tavg Protection Set I," Rev. 6 and procedures' IX1662.410, IX1662.420, IX1662.450, and IX1680.921.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed temporary alteration (modification) 03-TALT-ZMM03 and related implementing documents to verify Seabrook's design basis and affected system/component operability were maintained. This temporary modification involved the installation of temporary, skid-mounted equipment to provide high pressure air to the safety-related EDG starting air flasks. The inspectors verified appropriate controls in accordance with NRC requirements and plant procedures were completed for the temporary modification. These controls included tagging on plant equipment affected by the temporary modification, and procedural changes. The inspectors verified 10 CFR 50.59 reviews and 10 CFR 50.65 (a)(4) risk evaluations were completed correctly.

b. Findings

No findings of significance were identified.

**3. SAFEGUARDS**

Physical Protection [PP]

3PP2 Access Control

a. Inspection Scope

The following activities were conducted during the inspection period to verify that Seabrook 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 April 8 and 9.

Enclosure



On April 9, testing of all access control equipment was observed, including metal detectors, explosive material detectors and X-ray examination equipment.

b. Findings

No findings of significance were identified.

3PP3 Response to Contingency Events

a. Inspection Scope

The following activities were conducted to determine the effectiveness of Seabrook's Response to Contingency Events, as measured against the requirements of 10 CFR 73.55 and the Seabrook Nuclear Station Safeguards Contingency Plan.

On April 10, a review of documentation associated with the Seabrook's force-on-force exercise program was conducted. The review included documentation and critiques for exercises conducted since the first quarter of 2002, when the exercises were resumed post September 11, 2001.

On April 9, the inspectors conducted performance testing of the Seabrook's intrusion detection and alarm assessment systems. This testing was accomplished by one inspector who toured the entire perimeter and selected areas of potential vulnerability in the intrusion detection system. Concurrently, a second inspector observed the alarm assessment capabilities from the Central Alarm Station. During the walkdown of the intrusion detection system, thirteen specific locations were selected for testing.

b. Findings

No findings of significance were identified.

3PP4 Security Plan Changes

a. Inspection Scope

An in-office review was conducted of changes to the Seabrook's Physical Security Plan, identified as Rev. 30 and 31, Seabrook's Contingency Plan identified as Rev. 14 and 15, and the Seabrook Training and Qualification Plan identified as Rev. 15 and 16. These documents were submitted to the NRC on October 2, 2002, and January 31, 2003, 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 above listed plans. The NRC recognizes that some requirements contained in these Plans may have been superseded by the February 2002 Interim Compensatory Measures Order.

b. Findings

No findings of significance were identified.

#### 4. OTHER ACTIVITIES [OA]

##### 4OA1 Performance Indicator Verification

##### 1. Security Performance Indicators

###### a. Inspection Scope

On April 9, the inspectors reviewed Seabrook's programs for gathering, processing, evaluating, and submitting data for the Fitness-for-Duty, Personnel Screening, and Protected Area Security Equipment Performance Indicators (PIs) to verify these PIs had been properly reported as specified in Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Performance Indicator Guideline, Rev. 1 and Rev. 2. The inspectors examined Seabrook's tracking and trending reports, interviewed personnel, and reviewed security event reports for the PI data collected from the 2nd quarter of 2002 through March 2003.

###### b. Findings

No findings of significance were identified.

##### 2. High Head Safety Injection (HHSI), Residual Heat Removal, and Emergency AC Power, Emergency Diesel Generators Systems Unavailability

###### a. Inspection Scope

The inspectors selectively examined records used by Seabrook to identify safety systems unavailability, which are used to monitor the readiness of important safety systems to perform their intended safety functions in response to off-normal events or accidents.

The inspectors reviewed the performance indicators (PIs) for the HHSI, RHR, and EDG systems for the time period from April 1, 2002 to May 31, 2003 against the applicable criteria specified in NEI 99-02 to verify that all conditions that met the NEI criteria were recognized and identified as performance indicators. The inspectors reviewed records including, corrective action program records, control room operators' logs, PI data summary reports, and Licensee Event Reports. The inspectors reviewed in detail the operator logs and operations procedures completed during April and May 2003. The inspectors interviewed system engineers and operators to ensure that proper compensatory measures were taken when equipment was declared inoperable but available.

###### b. Findings

No findings of significance were identified.

## 4OA2 Problem Identification and Resolution

### 1. Annual Sample Review

#### a. Inspection Scope

The inspectors selected CR 03-02525 for detailed review. This condition report was associated with an Unusual Event declared at Seabrook on March 21, 2003 due to an intrusion detection alarm and a dark object seen at the protected area fence line (See NRC Inspection Report 05000443/2003002 Section 4OA3.2 and Preliminary Notification PNO-I-03-006 for additional details). The inspectors reviewed the following issues:

- Operator response to the event and implementation of emergency procedures;
- Emergency plan classification of the event;
- Communication between the NRC and Licensee;
- Communication between Seabrook Security personnel, Operations personnel, and emergency facilities personnel;
- Response of onsite and offsite security personnel and implementation of security procedures;
- Performance of security equipment (surveillance cameras, video capture system, intrusion detection system);
- Corrective actions to address deficiencies in the above areas.

In evaluating the above areas, the inspectors examined the following documents:

- OS1290.03, "Security Event," Rev. 1 and 2;
- ER 1.1, "Classification of Emergencies," Rev. 34 and 35;
- ER 1.2, "Emergency Plan Activation," Rev. 42;
- NRC Regulatory Issue Summary 2002-16, "Current Incident Response Issues;"
- GN1332.00, "Security Response to a Declared Radiological Emergency," Rev.25;
- NM11800, "Hazardous Condition Response Plan," Rev. 11;
- SDI 003, "Tactical Response Plan," Rev. 0;

The inspectors also conducted interviews of the following individuals:

- Senior Reactor Operators on a shift during a security event
- Security personnel including the Security Manager
- Emergency Preparedness personnel including the Emergency Preparedness Manager

#### b. Findings

No findings of significance were identified.

The inspectors determined that the corrective actions adequately addressed a variety of issues identified for the event. Seabrook's corrective actions included specific measures

Enclosure

to correct deficiencies for the timely communication of key security information to control room personnel.

2. Cross-references to PI&R Findings Documented Elsewhere

Section 1R15 describes a corrective action violation for failure to perform cause analyses for two failures of diodes associated with 4kV safety-related breakers and in one case failure to take corrective actions to prevent recurrence.

Section 1R22 describes a failure to perform the required testing of the redundant EDG for potential common cause issue. This was the 2nd violation for this TS required testing (see NRC Inspection Report 05000443/2002010).

4OA6 Meetings, including Exit

1. Exit Meeting Summary

The inspectors presented the inspection results to Mr. G. St. Pierre on July 9, 2003, following the conclusion of the period. 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 4 and 5, 2003, Mr. Hubert Miller, Regional Administrator-Region I and staff toured the site and met with Mr. Mark Warner and other members of licensee management.

On June 11, 2003, Mr. Hubert Miller, Regional Administrator-Region I and Mr. Luis Reyes, Regional Administrator-Region II conducted a public meeting with Florida Power and Light Company management in Juno Beach, Florida.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

Licensee personnel

G. St. Pierre, Station Director  
P. Freeman, Engineering Director  
M. Kiley, Operations Manager  
D. Sherwin, Maintenance Manager  
M. O'Keefe, Regulatory Compliance Supervisor  
P. Stroup, Site Services Director  
R. Maier, FPL Nuclear Security Manager  
J. Giarrusso, Security Manager  
S. Perkins-Grew, Emergency Preparedness, Manager  
M. Makowicz, Plant Engineering Manager  
R. Campo, BOP Group Supervisor  
S. Doody, NSSS Group Supervisor (acting)  
B. McAllister, System Engineer EAH  
W. Moore, System Engineer DAH  
R. McCormack, System Engineer SW

**LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

Opened and Closed:

05000443/2003003-01	NCV	Failure to Establish a Test Program to Demonstrate Satisfactory Performance of the Enclosure Air Handling to Cool Safety-Related Equipment (Section 1R07.1)
05000443/2003003-02	NCV	Failure to Evaluate the Cause of the Failure of Diodes associated with Safety-Related 4kV Breakers (Section 1R15.1)
05000443/2003003-03	NCV	Failure to Properly Test the Emergency Diesel Generator in Accordance with Technical Specifications for a Potential Common Cause Issue (Section 1R22.1)

**LIST OF DOCUMENTS REVIEWED**

**Section 1R04: Equipment Alignment**

Procedures

- LS0556.09, "Replacement of Ferro-Resonant Transformer Tuning Capacitors-7.5KVA Westinghouse Inverter"
- MS0523.19, "Bingham-Willamete Spent Fuel Pump Maintenance," Rev. 4
- CS0917.03, "Unmonitored Plant Releases," Rev. 7
- CS0908.01, "Offsite Dose Assessment," Rev. 13
- SM 7.7, "Evaluation of Potential Radiological Release Pathways," Rev. 2
- OX1436.20, "Startup Feed Pump Monthly Valve Operability Surveillance," Rev. 0

Work Orders

- 0305186 "Repair/Replacement of 1-EDE-I-1B"
- 0245210 "Centrifugal Charging Pump Coupling Inspection and Lubrication"
- 0245211 "Centrifugal Charging Pump Speed Increaser Oil Pump Coupling Inspection"
- 0302243 "Centrifugal Charging Pump Bearing Reservoir Oil Change"
- 0321124 "Pressure Regulatory (FW-PCV-4377) Not Maintaining Downstream Pressure"

Miscellaneous Documents

- Technical Specification 3.8.3.1
- Applicable piping and instrumentation drawings
- Tag Hang List WWO7-22-09 ("A" SFP pump)
- On-line maintenance assessment form, dated April 2, 2003
- Design Engineering
- Field Report in response to CR 03-05214
- MMOD 90-0677, "Startup Feed Pump Discharge Header Charging"
- DCR 00-0003, "West Pipe Chase Permanent Augmented Ventilation"

**Section 1R07: Heat Sink**

Condition Reports

- |          |          |          |          |          |          |
|----------|----------|----------|----------|----------|----------|
| 01-04910 | 01-07139 | 01-10365 | 01-10770 | 02-04247 | 02-01008 |
| 02-10903 | 02-13821 | 03-00625 | 03-02404 | 03-03404 | 03-04824 |
| 03-04829 | 03-04856 |          |          |          |          |

Work Orders

- |         |         |         |         |         |
|---------|---------|---------|---------|---------|
| 01C2782 | 01C3157 | 0221748 | 0226548 | 02A4022 |
|---------|---------|---------|---------|---------|

Procedures

- OS1016.05, "Service Water Cooling Tower Operation," Rev. 07, Change 27
- OS1023.74, "Maintenance of safety-related HVAC Systems - Compensatory Ventilation Procedure," Rev. 01
- OS1423.09, "Containment Enclosure Cooling System 31 Day Surveillance," Rev. 07, Change 02
- OX1406.02, "Containment Spray Pump & Valve Quarterly Operability, 18 Month Position Indication and Comprehensive Pump Testing," Rev. 09, Change 27
- OX1412.01, "PCCW Train A Quarterly Operability, 18 Month Position Indication and Comprehensive Pump Testing," Rev. 09, Change 01

#### Piping & Instrument Drawings

- 1-CBS-B20233 - Containment Spray System, Rev. 26
- 1-CC-B20205 - Primary Component Coolant Loop A Detail, Rev. 24
- 1-CC-B20207 - Primary Component Cooling Loop A Detail, Rev. 9
- 1-CC-B20211 - Primary Component Coolant Loop B Detail, Rev. 20
- 1-CC-B20213 - Primary Component Cooling Loop B Detail, Rev. 12
- 1-DAH-B20624 - Diesel Generator Building Air Handling Detail, Rev. 5
- 1-MAH-B20495 - Miscellaneous Air Handling PAB & Containment Enclosure Ventilation Area Detail, Rev. 14
- 1-MAH-B20496 - Miscellaneous Air Handling PAB & RHR Vaults Detail, Rev. 10
- 1-SW-B20792 - Service Water System Nuclear Overview, Rev. 5
- 1-SW-B20794 - Service Water System Nuclear Detail, Rev. 29
- 1-SW-B20795 - Service Water System Nuclear Detail, Rev. 34

#### System Performance Reports (for Mid-Cycle 09)

Containment Building Spray  
Diesel Air Handling  
Enclosure Air Handling  
Service Water Air Handling  
Service Water

#### **Section 3PP2: Access Control**

##### Procedures

71130 - Physical Protection  
Nuclear Oversight Audit Number 02-A04-01, Physical Security, May 11, 2002.  
Nuclear Oversight Audit Number 01-A04-01, Physical Security, May 16, 2001.  
Nuclear Oversight Audit Number 00-A04-02, Physical Security, May 18, 2000.  
Nuclear Oversight Audit Number 99-A04-01, Physical Security, June 1, 1999.  
Safeguards Event Log, March 2002 - March 2003.  
Seabrook Station Physical Security Plan.

### **LIST OF ACRONYMS**

ADAMS	Agencywide Documents Access and Management System
CBS	Containment Building Spray
CR	Condition Report
DAH	Diesel Air Handling
EAH	Enclosure Air Handling
ECCS	Emergency Core Cooling Systems
EDG	Emergency Diesel Generator
EFW	Emergency Feedwater
GL	Generic Letter
HHSI	High Head Safety Injection
HX	Heat Exchanger
I&C	Instrumentation & Control
IMC	Inspection Manual Chapter
kV	Kilo Volt
MR	Maintenance Rule
MRFF	Maintenance Rule Function Failure
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OD	Operability Determination
PARS	Publicly Available Records
PCCW	Primary Component Cooling Water
P&IDs	Piping and Instrumentation Drawings
PI	Performance Indicator
PMT	Post Maintenance Testing
RHR	Residual Heat Removal
SDP	Significance Determination Process
SORC	Site Operations Review Committee
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
WO	Work Orders