

May 2, 2003

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

SUBJECT: SEABROOK STATION - NRC INSPECTION REPORT 50-443/03-02

Dear Mr. Warner:

On March 29, 2003, the NRC completed an inspection at the Seabrook Station. The enclosed report documents the inspection findings which were discussed on April 15, 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 two NRC-identified findings of very low safety significance (Green), both of which were determined to involve violations of NRC requirements. However, because of the very low safety significance and because they are entered into your corrective action program, the NRC is treating these two findings as non-cited violations (NCV) in accordance with Section VI.A of the NRC Enforcement Policy. Additionally, a licensee-identified violation which was determined to be of very low safety significance is listed in Section 4OA7 of this report. If you contest any NCV in this report, 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 the Seabrook facility.

Since the terrorist attacks on September 11, 2002, the NRC has issued five Orders (dated February 25, 2002, January 7, 2003, and April 29, 2003) and several threat advisories to licensees of commercial power reactors to strengthen licensee capabilities, improve security force readiness, and enhance controls over personnel access authorization. The NRC also issued Temporary Instruction (TI) 2515/148 on August 28, 2002, that provided guidance to inspectors to audit and inspect licensee implementation of the interim compensatory measures (ICMs) required by the February 25 Order. Phase 1 of TI 2515/148 was completed at all commercial nuclear power plants during calendar year (CY) '02, and the remaining inspections are scheduled for completion in CY '03. Additionally, table top security drills were conducted at several licensees to evaluate licensee protection and mitigative strategies. Information gained and discrepancies identified during the audits and drills were reviewed and dispositioned by the Office of Nuclear Safety and Incident Response. For CY '03, the NRC will continue to monitor overall safeguards and security controls, conduct inspections, and perform force-on-force

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exercises at selected power plants to pilot a long-term program that will test the adequacy of licensee security and safeguards strategies. Should threat conditions change, the NRC may issue additional Orders, advisories, and temporary instructions to ensure adequate safety is being maintained at all commercial power reactors.

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 management system (ADAMS). ADAMS is accessible from the NRC web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Robert J. Summers, Chief
Projects Branch 6
Division of Reactor Projects

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

Enclosure: NRC Inspection Report No. 50-443/03-02
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 and Light Company
Office of the Attorney General
Town of Exeter
Board of Selectmen

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- K. Jenison, DRP
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REGION I

Docket No.: 50-443

License No.: NPF-86

Report No.: 50-443/03-02

Licensee: FPL Energy Seabrook, LLC

Facility: Seabrook Station, Unit 1

Location: Post Office Box 300
Seabrook, New Hampshire 03874

Dates: December 29, 2002 to March 29, 2003

Inspectors: Glenn Dentel, Senior Resident Inspector
Javier Brand, Resident Inspector
Martha Barillas, Reactor Engineer
Mel Gray, Senior Reactor Inspector
Thomas Moslak, Health Physicist
Mike Modes, Senior Reactor Inspector
Steve Vias, Inspector-Region II

Accompanied by: Alexander Velazquez, NRR Intern

Approved by: Robert J. Summers, Chief,
Reactor Projects Branch 6
Division of Reactor Projects

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SUMMARY OF FINDINGS

IR 05000443-03-02, FPL Energy Seabrook, LLC; on 12/29/02 - 3/29/03, Seabrook Station, Unit 1. Resident Inspection Report. Operability Evaluations.

The report covered a 13-week period of inspection by resident inspectors, a senior reactor engineer, a health physics inspector, and a reactor engineer providing assistance to the resident inspectors. Two Green non-cited violations (NCVs) were identified. 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 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 NCV of Technical Specification 6.7.1.a, "Procedures and Programs," in that operators did not take appropriate action to correct or address a deficiency (indications of an oil leak) which resulted in the inoperability of the motor driven emergency feedwater (MDEFW) pump, as specified by Operation Management Manual 10.8. In addition, the inspectors identified that Seabrook's evaluation and corrective actions did not address all causes, such as the operators' action, for the inoperability of the pump.

The finding was considered more than minor since the MDEFW pump availability was impacted. The finding was determined to be of very low safety significance in accordance with Phase I of the Reactor Safety SDP because the total unavailability time was less than the allowed outage time in the Technical Specifications. Because the finding is of very low safety significance and the finding was captured in Seabrook's corrective action program, this finding is being treated as a NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. (Section 1R15)

- Green. The inspectors identified a NCV of 10 CFR 50, Appendix B, Criterion XVI "Corrective Action," in that corrective actions taken were not adequate in recognizing and correcting the effects of a long-standing turbine driven emergency feedwater (TDEFW) pump steam supply valve leakage. The inadequate compensatory corrective actions for this degraded condition resulted in a frozen section of the steam trap discharge piping rendering the steam trap inoperable in February 2003.

The finding was considered more than minor because the inoperable steam trap challenged the operability of the TDEFW pump and could have affected the availability and reliability of the pump. The finding was determined to be of very low safety significance in accordance with Phase I of the Reactor Safety SDP because the frozen steam trap discharge piping did not result in an actual failure of the TDEFW pump. Because the finding is of very low safety significance and the finding was captured in Seabrook's corrective action program, this finding is being treated as a NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. (Section 1R15)

B. Licensee Identified Violations

A violation of very low safety significance, which was identified by the licensee, has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and its corrective action tracking number are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

The plant was operated at approximately 100 percent power for the duration of the inspection period. On March 21, operators declared an Unusual Event due to an intrusion detection alarm and a dark object seen at the protected area fence line. Extensive plant searches were conducted by coordinated teams between the Seacoast Emergency Response Team (SERT), the New Hampshire State Police, Seabrook Police Department, and Seabrook Station Security personnel. Seabrook concluded that there was no evidence of a human intruder inside the plant protected area and plant equipment was not affected. The plant remained at 100 percent power (See Section 4OA3).

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

The inspectors reviewed operators' response to a low temperature alarm in the tank farm room. The most risk significant component in the tank farm is the refueling water storage tank (RWST). The inspectors reviewed the temporary measures taken to increase temperature in the room and the RWST. Measures included placing the RWST on recirculation to eliminate any stratification, increasing temperature of the RWST auxiliary heating system, and placing a temporary cover on the outside vents. The inspectors verified the most susceptible areas of the RWST (level instruments) were not adversely affected by taking independent temperature readings with a contact pyrometer. The inspectors also verified the adverse conditions in the room were captured in the corrective action system (CR 03-00610).

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

.1 Full System Walkdown - Service Water System

a. Inspection Scope

The inspectors performed a detailed review and a full system walkdown of the service water (SW) system, involving equipment in both trains. The review included the ocean water and the cooling tower (CT) portion of the SW system, associated piping and in-line components.

The inspectors also reviewed technical specification requirements for the SW system, the applicable sections of the UFSAR, and performed a review of available industry

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operational experiences to assess Seabrook's susceptibility to SW system problems experienced in the nuclear industry.

The inspectors reviewed the following documents to support the detailed review and full equipment alignment inspections of the SW system:

- Piping and instrumentation drawings;
- Service water system performance report;
- Service water system health report;
- DBD-SW-01, "Design Basis Document - Service Water System";
- Service water system Work Order Overview Report;
- OS1016.01B, "Service Water Train 'A' and Common System Lineup";
- OS1016.01B, "Service Water Train 'B' and Common System Lineup";
- OS1016.01C, "Cooling Tower System Lineup";
- WO 0209223, "Service Water Valve Verification," dated August 4, 2002;
- OX1416.01, "Monthly Service Water Valve Verification," Rev.7;
- WO 0229470, "Cooling Tower Basin Temperature Weekly Surveillance," dated January 18, 2003;
- OX1416.08, "Cooling Tower Basin Temperature Weekly Surveillance," Rev. 7;
- List of open temporary alterations and temporary modifications;
- List of all service water system related condition reports issued in the last six months;
- List of operations work-arounds and impact items;
- Licensee Events Reports (LER) listing;
- LER 2002-001-00, "Silt Levels in Main Intake Structure Exceeded Allowable Values";
- Technical Specification 3.7.4;
- UFSAR Sections 9.2.2, and 9.2.5.

The inspectors also reviewed the following CRs in detail to evaluate any degrading trends or significant problems: CRs 03-00847, 02-12478, 02-08981, 02-05588, 02-07660, 02-05972, and 02-05369.

b. Findings

No findings of significance were identified.

.2 Partial System Walkdowns

a. Inspection Scope

The inspectors performed the following partial system walkdowns:

- On January 21, the inspectors performed a walkdown of the "B" residual heat removal train while the "A" train was removed from service for maintenance.

- On February 21, the inspectors performed walkdowns of both the motor driven and turbine driven emergency feedwater pumps and associated components.
- On March 27, the inspectors performed a walkdown of the "B" safety injection pump, while the "A" safety injection pump was removed from service for maintenance.

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

- Piping and instrumentation drawings for the residual heat removal, safety injection, and emergency feedwater systems;
- OS1013.04, "Residual Heat Removal Train B Startup and Operation," Rev. 10;
- OS1036.01, "Aligning the Emergency Feedwater System (EFW) for Automatic Initiation," Rev. 8;
- OS1036.03, "Resetting the Steam Driven EFW Pump Trip Valve," Rev. 2;
- FR-H.1, "Response to Loss of Secondary Heat Sink," Attachment C, "SG Feed from Fire Pumps," Rev. 25;
- Tag Hang List for WW04-22-10 (SI Pump 6A).

The inspectors also reviewed CRs generated for configuration control issues in the last six months to evaluate any degrading trends or significant problems.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

.1 General Plant Areas 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:

- Waste Processing and Nuclear Storage Tank Farm - RWST, 20' elevation;
- "B" High Head Safety Injection Pump Room - Primary Auxiliary Building, 7' elevation;
- Main Steam (MS) Feedwater Pipe Enclosure - West, 21'0" and 27'6" elevation;
- Fuel Storage Building, 21'6" elevation;
- Unit 2 - all elevations;

- Cable Spreading Rooms and Mechanical Rooms - Control Building, 50'0" elevation;
- Primary Auxiliary Building, 53' elevation;
- Service Water Pump House, all elevations;
- Cooling Tower, all elevations.

The inspectors reviewed the following documents:

- Fire Protection Pre-Fire Strategies;
- Fire Hazard Analysis;
- FP 2.2 "Control of Combustible Materials," Rev. 6;
- Technical Requirements Manual (TRM) Sections 2.7;
- Completed Surveillance Tests for TRM 2.7;
- IX1642.908, "CP-380 Service Water Pumphouse Fire Detection Operational Test," Rev. 4;
- IX1642.909, "CP-381 Service Water Cooling Tower Fire Detection Operational Test," Rev. 4.

b. Findings

No findings of significance were identified.

.2 Fire Drill Evaluation

a. Inspection Scope

On February 13, the inspectors observed an unannounced drill involving a simulated fire in the containment air purge fan (CAP-F-40), located at the 53-foot elevation of the primary auxiliary building. The inspectors verified that performance criteria were established commensurate with safety significance and compared the fire brigade performance against criteria contained in procedure ODI 49, "Management Expectation for Fire Drill Performance," Rev. 2. The inspectors verified the following: 1) the communications between the fire brigade leader, brigade members, and the control room operators 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 used. In addition, the inspectors evaluated the fire brigade drill critique and reviewed the post-drill report to ensure any deficiencies were identified and evaluated.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

a. Inspection Scope

The inspectors reviewed Seabrook's internal flood protection program in regards to the service water system. The inspectors performed walkdowns of both the ocean service water and cooling tower subsystems to assess the condition of the internal flood protection barriers and procedures. Station drawings and other applicable documentation were used to verify that flood protection equipment and barriers were in good condition and installed in the field where required. The inspectors also reviewed several engineering evaluations, the applicable design basis document, condition reports, and the UFSAR to verify that the licensee had implemented measures to protect safety-related equipment from flooding events.

The following documents were reviewed:

- UFSAR Sections 9.3.3 and 9.3.4, "Equipment and Floor Drainage System";
- UFSAR Sections 3.4.1, "Flood Protection";
- UFSAR Section 2.4.8.2, "Reservoirs";
- UFSAR Section 3.6(b), "Protection Against Dynamic Effects Associated With the Postulated Rupture of Piping";
- TP-7, Moderate Energy line Break Study";
- Design Basis Document, DBD-PB-01, "Plant Barriers," Rev. 1;
- Engineering Evaluation, SS-EE-97-002, Rev.00, "Plant Drainage System Guidelines";
- Engineering Evaluation, 90-50, "Internal Flooding Potential Through Plant Drain and Sump Systems";
- OS0243.02, "Fire Main Break," Rev. 8;
- OS1025.01, "Floor and Equipment Drain System Operation," Rev.10.

b. Findings

No findings of significance were identified.

1R08 In-service Inspection

In NRC Inspection Report 50-443/02-03, completed on June 25, 2002, an administrative error was identified in that the following inspection was inadvertently omitted from the report. See Section 4OA4.

a. Inspection Scope

The inspector reviewed the eddy current data acquisition and analysis of the A, D, and C steam generators. The inspector interviewed the Seabrook independent resolution analysts. The inspector reviewed the results of:

Eddy Current Data Calibration using Standard EP5501291
 Eddy Current Inspection of Row 5 - Col 62, SG D, 4 Hot Support
 Eddy Current Inspection of Row 4 - Column 63, SG D, 4 Hot Support
 Eddy Current Inspection of Row 4 - Column 65, SG D, 6 Hot Support
 Eddy Current Inspection of Row 5 - Column 80, SG D, 3 Hot Support

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Eddy Current Inspection of Row 9 - Column 24, SG D, 4 Hot Support
 Eddy Current Inspection of Row 2- Column 102, SG D, 6 Hot Support

The results, reviewed by the inspector, were from a population of what is believed to be outside diameter stress corrosion cracking, in the D steam generator, which occurred at the tube support of fifteen tubes, in Rows 2 to 9, at 42 Intersections.

The inspector reviewed the remote video inspection of the secondary side of the "C" steam generator:

Support 6 Cold Side Column 76 From Top
 Support 5 Hot Side Column 76 From Bottom
 Support 8 Hot Side Column 76 From Top
 Support 6 Hot Side Column 76 From Top
 Support 5 Cold Side Column 76 From Top

The inspector reviewed elements of the steam generator management program including their data management, degradation assessment, and plugging criteria.

The inspector reviewed radiographs of weld MS-4001-F001, MS-4000-F001, and the shop repair of MS-4000-F003. The inspector reviewed the accompanying ASME Section XI Repair/Replacement Plan Traveler for 01B8790, CR 02 0490701 and 01B8792, CR 02 0490701.

The inspector reviewed two condition reports picked from a list of condition reports attributed to the steam generator program - Condition Report 00-07526 for trip from a low steam generator level signal and 02 07075 for aging of the flexitallic gasket of a steam generator manway cover. The review of conditions reports were to determine if Seabrook is entering problems into the corrective action program at an appropriate threshold and resolving the problems in a timely manner.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

On January 16, the inspectors observed operator training focusing on human performance of time critical tasks. The inspectors reviewed the operators' abilities 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

.1 Review of Maintenance Rule Periodic Assessment

a. Inspection Scope

The inspectors reviewed Seabrook's most recent maintenance rule program assessment, covering the period April 2000 to December 2001, and the adjustments made, to verify that these activities met the scope and timeliness requirements of 10 CFR 50.65a(3). This regulation requires that at least every 24 months, licensees assess the effectiveness of their maintenance activities and make adjustments as necessary, to maintain an appropriate balance between reliable equipment operation and equipment unavailability due to preventive maintenance. The inspectors reviewed Seabrook's assessment by selecting the following systems or components that were being monitored against goals to improve their performance (identified as systems in a(1) status).

- Radiation Monitoring Instruments
- Service Air Compressors
- Main Steam System
- Instrument Air Dryers
- Emergency Diesel Generators

The inspectors also reviewed associated maintenance rule expert panel meeting reports, system improvement plans, and corrective action condition reports. The inspectors reviewed the effectiveness of corrective actions, noting that while some systems had been in a(1) status for a number of years (radiation monitoring and instrument/service air components), the corrective actions were largely complete and the subsequent performance of these systems has been satisfactory, such that they were due to be removed from a(1) status by the end of the year. The inspectors further reviewed Seabrook's assessment of the balance between equipment reliability and unavailability time due to maintenance, and the use of industry experience in making decisions about maintenance activities.

Finally, the inspectors evaluated the effectiveness of Seabrook's maintenance program assessment by reviewing their monitoring of the following systems determined to be reliable (identified as systems in a(2) status).

- Primary Component Cooling System
- Service Water System
- Solid State Protection System
- Emergency Feedwater System

System performance criteria, monitoring data, and Seabrook's assessment of the data in system performance reports were reviewed to verify Seabrook personnel were adequately monitoring the effectiveness of their maintenance activities.

b. Findings

No findings of significance were identified.

.2 Maintenance Rule Implementation - Main Steam, Reactor Coolant, and Service Water Systems

a. Inspection Scope

The inspectors evaluated Maintenance Rule (MR) implementation for the Main Steam (MS), Service Water (SW), and Reactor Coolant (RC) systems. The inspectors reviewed the effectiveness of maintenance through the review of deficiencies identified, historical performance, and overall system performance. The following documents were reviewed:

- Last six months of condition reports for the MS, SW, and RC systems, selected items were reviewed in greater detail;
- List of 10 CFR Part 21 Generic Issues for the last six months;
- List of NRC Regulatory Issues Summaries for the last six months;
- List of NRC Information Notices for the last six months;
- List of NRC Bulletins for the last six months;
- MR scoping document and MR performance criteria;
- MS, SW, and RC system health reports;
- Maintenance rule (a)(1) improvement plan for MS;
- MR performance data including maintenance rule function failures (MRFFs) and unavailability data.

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; and 4) the contribution of deficient work controls or work practices to any degraded conditions.

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 reviewed the routine planned maintenance and emergent work for the following equipment removed from service.

- On January 15 and 16, the inspectors reviewed the operator's actions to assess risk following declaration of the "A" emergency feedwater pump inoperable on January 15 due to a frozen drain line. The inspectors examined the other equipment out of service, the actions taken to mitigate the risk, and compensatory actions implemented.
- On January 23, the inspectors reviewed the risk associated with maintenance activities for a scheduled replacement of the "A" cooling tower pump discharge check valve (1-SW-V-53). The inspectors reviewed the on-line maintenance assessment, work order WO 02A3615, and performed visual inspections of the check valve and associated piping after removal. The inspectors observed portions of the work activity to ensure that other equipment was properly protected and interviewed technicians and plant operators. The inspectors reviewed condition report CR 03-00655, which evaluated minor damage of the polyurethane liner on the valve's downstream flange, and verified that an extent of condition review was performed.
- On February 3, the inspectors reviewed the risk associated with maintenance on the emergency diesel generator (EDG) ventilation system. The inspectors reviewed operator actions conducted to mitigate risk as described in OS1023.74, "Maintenance of safety-related HVAC Systems - Compensatory Ventilation Procedure," Rev. 0. The inspectors evaluated the engineering basis supporting the actions documented in Engineering Evaluation 93-21, "Compensatory Actions for Non-Functional safety-related HVAC Systems and Components," Rev. 3 and calculation, C-S-1-62003, "DGB Supply and Exhaust Fan Outage Study," Rev. 0.
- On March 3, the inspectors reviewed the risk associated with maintenance activities on a switchyard breaker, an enclosure air handling filter, and a containment building spray pump. The inspectors evaluated the calculated risk using the Seabrook "safety monitor" and compared risk mitigating actions against the guidance in NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Rev. 3 and Work Management Manual 10.1, "On-Line Maintenance," Rev. 3. The inspectors interviewed operators to assess their knowledge of the guidance and tools to assess risk.
- On March 20, the inspectors reviewed the risk associated with maintenance activities on a charging pump, a boric acid transfer pump, and an emergency diesel generator ventilation supply fan. The inspectors evaluated the calculated risk using the Seabrook "safety monitor" and compared risk mitigating actions against the guidance in NUMARC 93-01 and Work Management Manual 10.1.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

.1 Oil Leak on the Motor Driven Emergency Feedwater Pump

a. Inspection Scope

On December 12, 2002, a nuclear system operator (NSO) identified, during routine midnight operator rounds, that the oil level in the outboard bearing oil bubbler for the motor driven emergency feedwater (MDEFW) pump was low. Approximately eight hours later, the day shift NSO identified that the level had dropped further and the pump was declared inoperable. Within an hour of the day shift NSO identification, an oil leak on the oil sight glass was repaired, oil added, and the pump returned to service. The inspectors reviewed the cause of the oil leak, the causes of the inoperability of the pump, the operator's response to the event, and the corrective actions identified by Seabrook. The inspectors interviewed operators, system engineers, and maintenance technicians. The following documents were examined:

- Operations Department roving nuclear system operator (NSO) logs;
- Operations Department narrative logs for December 12;
- CR 03-00422, "Apparent cause [for CR 02-16528]... reopened by Plant Engineering because Operations failed to address decision-making process during initial evaluation";
- CR 02-16528, "B" MDEFW pump bearing oil below minimum and declared inoperable;
- Guidance for operators for oil bubblers.

b. Findings

Introduction

The inspectors identified that operators did not take appropriate action to correct or address a deficiency (indications of an oil leak) which resulted in the MDEFW pump becoming inoperable. This issue was assessed as having very low safety significance (Green) and was determined to be a NCV of Technical Specification 6.7.1.a, "Procedures and Programs."

Description

On December 12, a midnight shift NSO identified decreased level in an oil bubbler and oil on the base plate of the MDEFW pump. Although the oil level in the sight glass remained above operable limits, the NSO declared the reading unsatisfactory and communicated the information to the work control senior reactor operator. The action planned to address the decreasing oil was to perform an oil addition on a day shift. The

Enclosure

day shift NSO reported that the MDEFW pump oil sight glass level dropped below minimum required and the pump was declared inoperable. With the oil level below the minimum and with a pump start, the pump bearings would fail and the pump would not be able to perform its design function.

Seabrook completed a review of the issue under CR 02-16528 and examined the cause of the oil leakage. The inspectors concluded the corrective actions to address the cause of the oil leakage was satisfactory; however, the inspectors determined that the corrective actions did not address all causes for the inoperability of the MDEFW pump. Seabrook station reopened the CR to address operator decision making that contributed to the MDEFW pump inoperability. This corrective action aspect is described in Section 4OA2. The inspectors concluded that subsequent corrective actions to address the inadequacy of the operators' actions were adequate.

Analysis

Seabrook operators not taking appropriate action to correct or address a deficiency (indications of an oil leak) resulting in the MDEFW pump becoming inoperable is considered a performance deficiency since Seabrook's Operation procedures require operators to take appropriate actions to identified deficiencies.

The finding affected the mitigating system cornerstone and was considered more than minor since the MDEFW pump availability was impacted. Using Appendix "A," Phase 1 of Manual Chapter (MC) 0609, the finding was determined to be of very low safety significance (Green) since the total unavailability time was less than the allowed outage time in the Technical Specifications.

Enforcement

Traditional enforcement does not apply because the issue did not have any actual safety consequence 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.

Technical Specification 6.7.1.a, "Procedures and Programs," requires that written procedures be implemented covering the activities in Regulatory Guide 1.33, Revision 2, Appendix A. Regulatory Guide 1.33, Appendix A, requires administrative procedures for authorities and responsibilities for safe operation and shutdown. Operation Management Manual 10.8 states that "operators shall take appropriate action to correct or report deficiencies noted during tours." Contrary to the above, on December 12, operators did not take appropriate action to correct or address the deficiency which resulted in the pump becoming inoperable. Because this violation was of very low safety significance and Seabrook entered this finding into its corrective action program (CR 03-00422 and 02-16528), this violation is being treated as a NCV consistent with section VI.A.1 of the NRC Enforcement Policy (**NCV 50-443/03-02-01**).

.2 Frozen Turbine Driven Emergency Feedwater Pump Steam Trap Piping

a. Inspection Scope

The inspectors reviewed actions taken in response to a frozen vent line identified on January 15, 2003, in one of the three steam traps for the turbine-driven emergency feedwater (TDEFW) pump. The inspectors assessed through field inspections and interviews with the system engineer and plant operators the action taken to recover the TDEFW pump. In addition, the inspectors reviewed the cause of the frozen line, the operators' response to the event, the engineering root cause evaluation documented per condition report CR 03-00416, and the corrective actions identified by Seabrook. The following documents were also examined for this inspection:

- Engineering Evaluation EE-03-001, "Basis for Emergency Feedwater System Operability," Revision 0;
- Seabrook Station Updated Safety Analysis Report, Section 6.8, "Emergency Feedwater";
- Technical Report TR-7239-2, "Seabrook Station EFW Pump Turbine Supply Line Condensate Distribution with Larger Orifice Areas," Rev.0;
- Main steam drawing MS-4000-32, Rev.12;
- 1-MS-4000-101, "Main Steam Piping Erection Isometric," Rev.1.

b. Findings

Introduction

The inspectors identified that Seabrook's corrective actions were not adequate in recognizing and correcting the effects of long-standing turbine driven emergency feedwater (TDEFW) pump steam supply valve(s) leakage. This condition resulted in a frozen steam trap vent line, which rendered the steam trap inoperable and challenged the availability and reliability of the TDEFW pump. This issue was assessed as having very low safety significance (Green) and was determined to be a NCV of 10 CFR 50, Appendix "B," Criterion XVI "Corrective Action."

Description

On January 15, 2003, a plant operator identified a frozen vent line off one of the steam traps for the TDEFW pump. The pump was declared inoperable and immediate actions were implemented to defrost the pipe and to evaluate the cause of the event. The root cause evaluation documented under CR 03-00416 determined that condensation of the steam leaking past the seats of the two steam supply valves (MS-V-393 and 394) froze due to sustained cold ambient temperature. The evaluation also determined the pump operability was not affected and that the pump would have been able to perform its design safety function.

The inspectors identified that Seabrook's previous evaluation of this long standing degraded condition failed to recognize the need to address a potential freeze concern due to condensation of the steam leakage past the seats of the two TDEFW steam

supply valves. The inspectors also determined that previous corrective actions were ineffective in preventing seat leakage past the two steam supply valves.

The inspectors determined that an adequate extent of condition review was performed. In addition, the inspectors verified that corrective actions were implemented and/or planned to prevent future freezing of the TDEFW steam trap discharge piping, and to address the steam supply valves seat leakage.

Analysis

Seabrook's inadequate corrective actions for seat leakage past the two TDEFW steam supply valves is considered a performance deficiency since the corrective action program is required to assure that the cause of significant conditions is determined and corrective actions taken to preclude repetition. Seabrook's corrective actions did not adequately evaluate the consequences of the steam leakage during sustained cold weather, nor provided for interim compensatory actions. Inadequate compensatory corrective actions for this degraded condition resulted in a frozen section of the steam trap discharge piping rendering the steam trap inoperable in February 2003.

The finding affected the mitigating system cornerstone and was considered more than minor because the inoperable steam trap challenged the operability of the TDEFW pump resulting in emergent work to correct the condition, and could have affected the availability and reliability of the TDEFW system. Using Appendix "A," Phase 1 of Manual Chapter MC 0609, the finding was determined to be of very low safety significance (Green) since the frozen TDEFW steam trap pipe did not result in actual failure of the TDEFW pump.

Enforcement

Traditional enforcement does not apply because the issue did not have any actual safety consequence 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.

10 CFR 50, Appendix "B," Criterion XVI "Corrective Action," requires that for significant conditions adverse to quality, measures shall be established to assure the cause of the condition is determined and corrective action taken to preclude repetition. Contrary to this requirement, Seabrook did not implement adequate corrective actions to preclude recurring seat leakage past the TDEFW steam supply valves, or to ensure it would not impact operability of the TDEFW pump during sustained cold weather. Because this violation was of very low safety significance and Seabrook entered this finding into its corrective action program (CR 03-00416), this violation is being treated as a NCV consistent with section VI.A.1 of the NRC Enforcement Policy **(NCV 50-443/03- 02-02)**.

.3 Miscellaneous Operability Evaluations

a. Inspection Scope

The inspectors reviewed several operability determinations (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:

- OD 03-00043, which evaluated a charging pump (CS-P-2A) control circuit malfunction that occurred on December 26, during a scheduled quarterly slave relay test. Seabrook's evaluation of this condition identified a degraded circuit breaker diode. The inspectors interviewed engineering personnel, reviewed applicable charging pump wiring diagrams (1-NHY-310891, sheets a through h) and verified that the function of both charging pumps was not affected. The inspectors also verified that Seabrook's investigation included an extent of condition review to ensure that the safety function of other components in applicable safety-related systems was not affected.
- OD 02-16455, which evaluated a possible over-compression of the service water pumps discharge expansion joints identified on December 19 during a scheduled inspection. Seabrook's evaluation determined that there was no plastic deformation of the expansion joint bellows convolutions and that the joints remained capable of performing their intended function.
- The inspectors reviewed Seabrook's lubricating oil preventive maintenance (PM) process to assess acceptance for not having a specified schedule for replacing the charging pumps lubricating oil. The inspectors interviewed the system engineer and reviewed the PM task implementation (1-CS-P-2-A-L1) for the charging pumps. Seabrook's PM technical basis states that there were no in-service testing, equipment qualification, NRC regulations or commitments requiring lubricating oil changes at a specified frequency. Seabrook determined that based on past performance and pump manufacturer recommendations, the charging pumps were highly reliable and that oil changes should be based on lubricating oil sample analysis results.

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 were reviewed.

Enclosure

- On January 24, OX1416.05, "Service Water Cooling Tower Pumps Quarterly and 2 Year Comprehensive Test, " Rev. 7, following the replacement of the "A" cooling tower pump discharge check valve (1-SW-V-53).
- On February 5, thermography performed during OX1426.05, "DG 1B Monthly Operability Surveillance," Rev. 9, following repair/replacement of lugs and wires in the diesel generator control panel cabinet using WO 0229620. The inspectors also verified on a sampling basis that the quality of the crimped lugs was maintained.
- On February 10, the inspectors reviewed documentation of the "B" diesel engine driven fire pump (FP-P-20B) post-maintenance test completed on January 17. The pump was tested per OX0443.01, "Diesel Fire Pump Weekly Test, " Rev. 6, following a complete overhaul of the pump. In addition, the inspectors reviewed condition report CR 02-16553, which documented an apparent cause evaluation of a water/glycol leak into the fire pump engine, and reviewed the historical data of lubricating oil analysis for the pump and engine.
- On March 3, OX1406.02, "Containment Spray Pump and Valve Quarterly Operability, 18-Month Position Indication and Comprehensive Pump Testing," Rev. 9, following repair of oil leaks on the pump completed per WO 0236182.
- On March 12, OX1412.02, "PCCW Train B Quarterly Operability, 18-Month Position Indication, and Comprehensive Pump Testing," Rev. 9, following inspection of the primary component cooling water discharge check valve (CC-V-298) and repair of a small leak on the seal water piping to the pump casing joint.
- On March 27, OX1405.07, "Safety Injection Quarterly and 18 Month Pump Flow and Valve Test," Rev. 7, following inspection and megger testing of the safety injection pump per WO 0241758.

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 TSs and surveillance procedures.

The inspectors attended some of the pre-evolution briefings, 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 reviewed.

- On January 15, LX0557.15, "Inspection and PM Single and Double Pole Molded Case Breakers," (Circuit 1 - Reactor Head Vent and Circuit 19 - "B" Pressurizer Power Operator Relief Valve), Rev. 17.
- On January 28, OX0443.01, "Diesel Fire Pump Weekly Test," Rev. 6.
- On January 31, OX1431.02, "Main Turbine Stop Valves Weekly Operability Test," Rev. 8 and OX1431.04, "Combined Intermediate Valves Weekly Cycling Test," Rev. 7.
- On March 10, IX1622.244, "CBS-L-933 Refueling Water Storage Tank Level Operational Test," Rev. 06.
- The inspectors reviewed the historical data of the highest risk significant valves in the service water system to assess their performance and operability. In addition, for the motor operated valves (MOVs), the inspectors reviewed the operability testing performed per Seabrook's procedure OX1456.81, "Operability Testing of IST Valves," and the MOV Diagnostic Testing Summary Report for the applicable valves completed per ES1850.003, "Motor Operated Valves Performance Monitoring." The inspectors reviewed CRs 02-08981 and 00-03131 which identified lower than anticipated seating torque during testing. The inspectors verified that minor discrepancies identified during testing had been properly evaluated and corrective actions planned or implemented.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed temporary modification 03-TMOD-0002, Rev. 1, and related implementing documents to verify Seabrook's design basis and affected system/component operability were maintained. This temporary modification involved use of temporary equipment to monitor an intermittent voltage increase being experienced on the ground for the "B" power panel. The "B" power panel supplies power to multiple channel II instrumentation control panels and recorders. Channel II is one of the four safety instrumentation channels.

The inspectors interviewed engineers and operators, completed field walkdowns of the TMOD, and reviewed the following documents:

- Maintenance Manual, MA 4.3A, "Temporary Modifications and Temporary Alterations," Rev. 16;
- WO 0239506, Troubleshooting Power Panel 1B for Source of Ground and Correct;
- WO 0302217, Installation of TMOD 03-002;
- Engineering evaluation titled "Impact of a Ground on PP-1B during Plant Operation";
- Plant Engineering Action Plan Register - Momentary Voltage Increase on L1 and L2 ground on PP-1B;
- List of all open temporary modifications and temporary alterations

The inspectors verified appropriate controls in accordance with NRC requirements and plant procedures were completed for the temporary modification. These controls included modifications to plant drawings, 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. The inspectors also examined the combined effect of the modification with the other outstanding temporary modifications and temporary alterations.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness (EP)

1EP6 Drill Evaluation

a. Inspection Scope

On March 20, the inspectors observed portions of the Combined Functional Emergency Preparedness Drill, 03-01, to evaluate the conduct of the drill and adequacy of Seabrook's post-drill critique. The inspectors verified that event classification and notification were properly conducted and priorities were communicated in the simulator control room and the technical support center. The inspectors also verified that identified problems were entered into the corrective action program through observation of the critique, review of the drill evaluation report, interviews of applicable drill participants, and review of the list of condition reports initiated.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01)

a. Inspection Scope

During the period, March 3 to 6, 2003, the inspectors conducted the following activities to verify that Seabrook was properly implementing physical, administrative, and engineering controls for access to locked high radiation areas and other radiologically controlled areas, and that workers were adhering to these controls when working in these areas. Implementation of these controls was reviewed against the criteria contained in 10 CFR 20, applicable industry standards, and Seabrook's procedures.

- Independent radiation surveys were performed in areas of the Primary Auxiliary Building, Fuel Storage Building, Decay Heat Vaults, and Waste Processing Building to confirm the accuracy of survey maps, and assess the adequacy of radiation work permits, associated controls, and postings. Keys to Technical Specification Locked High Radiation Areas (TSLHRA) were inventoried and these areas were verified to be properly secured and posted during plant tours.
- The inspectors reviewed pertinent information regarding cumulative personnel exposure history for 2002, current exposure trends, and recent maintenance activities to assess Seabrook's effectiveness in controlling workers' dose. Included in this review were the ALARA Review (AR) for coating the spent fuel pool cask loading and transfer canal areas (AR#03-01), and the ALARA Evaluation for processing/packaging radioactive trash.
- The inspectors observed various jobs-in-progress to verify that the controls specified in the associated radiation work permit (RWP) were implemented. Work observations included, flushing of a hot spot from the "B" Residual Heat Removal system suction line (RWP No. 03-R-0009) on March 4; safety interlock testing of the Model 81 Sheperd beam irradiator (RWP No. 03-R-0001) on March 5; and the inspection of contaminated components on a Tri-Nuc pump (03-R-00024) on March 6. During the work observations, the inspectors interviewed selected workers on their knowledge of the job site radiological conditions and electronic dosimetry set points.
- The inspectors attended daily Health Physics Department staff meetings to assess the management controls for work in radiologically controlled areas.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator Verification

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

a. Inspection Scope

The inspectors reviewed the accuracy and completeness of performance indicators for unplanned scrams per 7000 critical hours and scrams with loss of normal heat sink. The inspectors verified the January to December 2002 data through reviews of plant records such as Licensee Event Reports (LERs), operating logs, procedures, and also interviews with applicable licensee personnel. The data was evaluated against the criteria specified in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline," Rev. 2.

b. Findings

No findings of significance were identified.

.2 Unplanned Power Changes per 7000 Critical Hours

a. Inspection Scope

The inspectors reviewed the accuracy and completeness of performance indicators for unplanned changes in reactor power for greater than 20 percent per 7000 hours of critical operation. The inspectors verified the January to December 2002 data through reviews of monthly operating reports, shift operating logs, LERs and additional records. The data was evaluated against the criteria specified in Nuclear Energy Institute 99-02, Regulatory Assessment Performance Indicator Guideline, Rev. 2.

b. Findings

No findings of significance were identified.

40A2 Identification and Resolution of Problems (71152)

.1 Access Control to Radiologically Significant Areas

a. Scope

The inspector reviewed fifteen (15) Condition Reports, three (3) Health Physics Department Self-Assessments, five (5) Nuclear Oversight Surveillance Reports, and the minutes from a recent Radiation Safety Committee meeting (No. 02-06). This review assessed Seabrook's threshold for identifying problems, the comprehensiveness of the cause evaluation, and the promptness/effectiveness of the resulting corrective actions. The review was conducted against the criteria contained in 10 CFR 20, Technical Specifications, and Seabrook's procedures.

b. Findings

No findings of significance were identified.

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

Section 1R15.1 describes that Seabrook's evaluation of the MDEFW pump oil leak did not account for the Operation decision making aspect of the pump's inoperability; therefore, Seabrook did not recognize a procedural violation occurred and corrective actions were not taken. Following inspectors questions, the evaluation was re-opened and corrective actions adequately addressed the additional cause of the inoperable pump (CRs 03-00422 and 02-16528).

Section 1R15.2 describes a finding related to inadequate corrective actions involving the effects of long standing seat leakage past the TDEFW steam supply valves MS-V-393 and 394 during sustained cold weather.

4OA3 Event Follow-Up

.1 Minor Electrical Fire in Waste Process Building

a. Inspection Scope

On February 27, the onsite fire brigade responded to a minor fire at an electrical box in the Waste Process Building. The fire self-extinguished within ten minutes. The electrical box was associated with a cask handling crane. The fire was not near nor did it affect any safety-related equipment. The inspectors verified correct actions were taken by the fire brigade and control room personnel in accordance with fire protection pre-fire strategies and the abnormal operating procedures. In addition, the inspectors verified the fire did not require an entry into any emergency action level.

b. Findings

No findings of significance were identified.

.2 Unusual Event Due to Plant Intrusion Alarm

a. Inspection Scope

On March 21, while Seabrook station was operating at 100 percent power, operators declared an Unusual Event due to an intrusion detection alarm and a dark object seen at the protected area fence line. The inspectors responded to the emergency operations facility and to the site, and established communication with site management, NRC Region I and Headquarter Offices.

The inspectors evaluated Seabrook's initial response to the event and verified no vital area alarms occurred. Extensive plant searches were conducted by coordinated teams between the Seacoast Emergency Response Team (SERT), the New Hampshire State Police, Seabrook Police Department, and Seabrook Station Security personnel. Seabrook concluded that there was no evidence of a human intruder inside the plant protected area and plant equipment was not affected.

b. Findings

No findings of significance were identified.

40A4 Administrative Items

.1 Cross-Reference to a Human Performance Finding Documented Elsewhere

Section 15.1 describes a finding in which Seabrook operators did not take appropriate action to correct or address a deficiency which resulted in the motor driven emergency feedwater pump becoming inoperable.

.2 Administrative Correction

In NRC Inspection Report 50-443/02-03, completed on June 25, 2002, an administrative error was identified in that the following inspections were inadvertently omitted from the report. The following omitted sections have been incorporated in the body of this inspection report IR 50-443/03-02:

- Section 1R08, In-service Testing;
- Section 40A5, TI2515/145-Circumferential Cracking of RPV Head Penetration Nozzles.

40A5 Other Activities

In NRC Inspection Report 50-443/02-03, completed on June 25, 2002, an administrative error was identified in that the following inspection was inadvertently omitted from the report.

TI 2515/145 - Circumferential Cracking of RPV Head Penetration Nozzles Vent Follow-Up

a. Inspection Scope

The inspectors reviewed Seabrook's activities in response to Bulletin 2001-01. This included interviews with analyst personnel, the review of qualification records, procedures and observing a sample of the visual examination of the Reactor Vessel Head nozzles. The inspector independently viewed 14 locations around various penetrations examined by the plant staff. In accordance with TI 2515/145, inspectors verified that deficiencies and discrepancies associated with the Reactor Coolant System structures and the examination process was identified and assured they were placed in the corrective action program.

b. Findings

No findings of significance were identified.

The specific reporting requirements of TI 2515/145 are documented in the attachment.

4OA6 Meetings, including Exit

.1 Exit Meeting Summary

The inspector presented the inspection results to Mr. G. St. Pierre and other members of the Seabrook staff on April 15, following the conclusion of the period. The licensee acknowledges 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 March 17, 2003, Mr. Brian McDermott, Branch Chief, Division of Reactor Projects, Branch 6, and Mr. John White, Branch Chief, Division of Radiation Safety and Safeguards, conducted the Seabrook annual assessment meeting with Mr. Mark Warner and other members of your staff. Mr. Victor Nerses, Project Manager for Seabrook Station also attended the annual meeting, and toured the site and met with other members of the Seabrook licensing group on March 18, 2003.

4OA7 Licensee Identified Violations.

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

10 CFR 50 Appendix "B," Criterion XVI "Corrective Action" requires conditions adverse to quality shall be promptly identified and corrected. Contrary to the above, Seabrook's corrective actions were not timely implemented to address operators' knowledge involving inoperability of Power Operated Relief Valves (PORVs). Consequently, licensed operators were not fully aware the PORVs become inoperable during performance of the wide range RCS cold leg temperature surveillance testing. The finding was determined to be of very low safety significance because the actual loss of the PORVs' safety function was less than the one hour T.S. allowed outage time and it was captured in Seabrook's corrective action program (CR 03-00688, CR 03-00721, CR 03-02858).

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

G. St. Pierre, Station Director
B. Plummer, Operations Manager
T. Nichols, Technical Support Manager
D. Sherwin, Maintenance Manager
J. Giarrusso, Security Manager
M. O'Keefe, Regulatory Compliance Supervisor
J. Buyak, Senior Health Physics Technician
W. Cash, Health Physics Department Manager
D. Cormier, Senior Health Physics Technician
M. Debay, Assistant Operations Manager
D. Flahardy, Senior Health Physicist
D. Hampton, Health Physics Supervisor
L. Johnson III, Senior Health Physics Technician
R. Logue, Senior Health Physics Technician
C. Mosher, Nuclear Systems Operator
R. Thurlow, Health Physics Technical Supervisor
E. Metcalf, Assistant Plant Engineering Manager
R. Sanchez, Maintenance Rule Coordinator, Plant Engineering
R. White, Mechanical Engineering Manager
R. Lieder, Engineering Supervisor
K. Whitney, ISI Engineering
K. Larson, Independent Eddy Current Level III

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000443/2003-003-01	NCV	Failure to Take Appropriate Action to Correct or Address a Deficiency in Accordance with Operations Procedures Resulting in Inoperability of the Motor Driven Emergency Feedwater Pump (Section 1R15.01)
05000443/2003-003-02	NCV	Failure to Recognize and Correct the Effects of Seat Leakage Past the Steam Supply Valves to the Turbine Driven Emergency Feedwater Pump (Section 1R15.02)

LIST OF ACRONYMS

ADAMS	Agency Wide Documents Access And Management System
AR	ALARA (As Low As reasonable Achievable) Review
CNO	Chief Nuclear Officer
CFR	Code of Federal Regulations
CR	Condition Report
CT	Cooling Tower
CY	Calendar Year
EDG	Emergency Diesel Generator
EFW	Emergency Feedwater System
EP	Emergency Preparedness
FPL	Florida Power and Light
ICM	Interim Compensatory Measures
IR	Inspection Report
LER	Licensee Event Report
LLC	Limiting Liability Company
MDEFW	Motor Driven Emergency Feedwater
MOV	Motor Operated Valves
MR	Maintenance Rule
MRFF	Maintenance Rule Function Failures
MS	Main Steam
NEI	Nuclear Energy Institute
NSO	Nuclear System Operator
OA	Other Activities
OD	Operability Determination
PARs	Publicly Available Records
PM	Preventive Maintenance
PMT	Post Maintenance Testing
RC	Reactor Coolant
RCS	Reactor Coolant System
RPV	Reactor Pressure Vessel
RWP	Radiation Work Permit
RWST	Refueling Water Storage Tank
SI	Safety Injection
SERT	Seacoast Emergency Response Team
SW	Service Water
TI	Temporary Instruction
TDEFW	Turbine Driven Emergency Feedwater
TMOD	Temporary Modification
TSLHRA	Technical Specification Locked High Radiation Area
TS	Technical Specifications

PARTIAL LIST OF DOCUMENTS REVIEWED

Procedures:

ES02-1-101	Steam Generator Data Management
HD0958.03, Rev. 23	Personnel Survey and Decontamination Techniques
HD0958.17, Rev. 12	Performance of Routine Radiological Surveys
HD0958.30, Rev. 23	Inventory and Control of Locked or Very High Radiation Area Keys and Locksets
HD0963.02, Rev. 13	Administrative Guidelines for Health Physics Instrumentation
HD0992.02, Rev. 28	Issuance and Control of Personnel Monitoring Devices
HN0951.04, Rev. 06	Health Physics Repetitive Tasks
HN0958.13, Rev. 25	Generation and Control of Radiation Work Permits
HN0958.25, Rev. 25	High Radiation Area Controls
JD0999.910, Rev. 0	Reporting Key Performance Indicators
RP 2.1, Rev. 15	General Radiation Worker Instruction and Responsibilities
RP 9.1, Rev. 17	RCA Access/Egress Requirements
RP 9.2, Rev. 6	Radiological Access Requirements to Containment Area
RP 13.2, Rev. 4	Storage of Highly Radioactive Material in the Reactor Cavity or Spent Fuel Pool
RP 15.1, Rev. 15	Job Pre-Planning and Review for Radiation Exposure Control
OE 3.1, Rev. 18	Initiating a Condition Report without using the Condition Reporting System
OE 3.6, Rev. 2	Condition Reports

Quality Assurance Reports:

QASR 02-0169	Assessment of the radiological controls and practices with the Spent Fuel Pool diving operations and skimmer maintenance
QASR 02-0187	Boric Acid Leakage Inspection and Evaluation Process
QASR 02-0196	Assessment of Health Physics radiological postings and general material conditions
QASR 02-0202	Boric acid leakage removal and inspection on 1-CBS-P-9-B swagelock fitting
QRNO 03-0033	Annual Assessment of the Radiation Protection Program for 2002

Condition Reports:

03-01660, 03-01060, 03-00905, 03-00784, 03-00890, 03-00658, 03-00569, 03-00045, 02-16679, 02-16540, 02-16442, 02-16298, 02-15680, 02-15509, 02-15477, 01-09865, 03-02212, 01-12681, 02-08565, 03-00625, 02-10604.

Health Physics Departmental Self-Assessments:

02-0084	Shipping Administration
02-0154	HP Planning Process with consideration for high risk jobs

02-0155 Review the Temporary Pumping program for improvements and industry experience

Inservice Testing Documents:

OR08 Degradation Assessment
 TS 3/4.4.5, Steam Generator
 NYN-99049 Steam Generator Tubes Plugged During Sixth Inservice Inspection
 NYN-99074 Inservice Inspection Examination Report
 NYN-00009 Steam Generators Inservice Inspection
 NYN-00097 Steam Generators Tubes Plugged during Seventh Inservice Inspection
 NYN-01036 Inservice Inspection Examination Report
 NYN-01073 Steam Generators Inservice Inspection
 Audit 00-A05-03 Steam Generator Program, 6/9/00
 Audit 00-A10-02 OR07 Outage Audit, 12/21/00
 Organizational Charts 02C, 02C1, 02C2, 02C3, 02C4, 02C5, 02C6, 02C6A, 02C6B
 Plant Engineering System/Component Listing (3/13/02)
 Seabrook Spring 2002 Data Analysis Reference Book
 Seabrook Spring 2002 Appendix H Eddy Current Probe Documentation
 List from the CR System for all CRs with tag numbers for the steam generators (RC-E-11A, RC-E-11B, RC-E-11C, RC-E-11D)
 Data Analysis Reference Book
 Radiation Safety Committee Meeting Minutes

Maintenance Rule Documents:

Meeting No. 02-06 of 12/10/2002
 Periodic Assessment Of Maintenance Rule Program, Seabrook Station, April 2000 through December 2001
 Maintenance Rule Expert Panel Meeting Minutes from February 2001 to February 2003
 Seabrook Nuclear Assurance Quality Report 03-0021, "Assessment of the FPL Energy Seabrook Maintenance Rule Program," 2/14/03
 Maintenance Rule a(1) Improvement Plan for Service Air Compressors
 Maintenance Rule a(1) Improvement Plan for Instrument Air Dryer
 Maintenance Rule a(1) Improvement Plan for Emergency Diesel Generators
 Maintenance Rule a(1) Improvement Plan for Main Steam System
 Maintenance Rule a(1) Improvement Plan for Radiation Monitoring Instruments
 Service Air Compressors Performance Report, February 2003
 Instrument Air System Performance Report, February 2003
 Emergency Diesel Generator Performance Report, February 2003
 Main Steam and Main Steam Drain System Performance Report, February 2003
 Radiation Monitoring System Performance Report, February 2003
 Primary Component Cooling System Performance Report, February 2003
 Solid State Protection Performance Report, February 2003
 Service Water System Performance Report, February 2003

Emergency Feedwater System Performance Report, February 2003
Seabrook Plant Engineering Guideline, "Risk-Informed Approach to System Health,"
Rev. 1
Seabrook Plant Engineering Guideline, "Maintenance Rule Periodic Assessment," Rev.
5
Seabrook Station Administrative Procedure SM 7.10, "Maintenance Rule Program,"
Rev. 1

TEMPORARY INSTRUCTION (TI)

TI 2515/145 - Circumferential Cracking of RPV Head Penetration Nozzles Reporting Requirements

- a.1. The examination was performed by qualified and knowledgeable personnel.
- a.2. The visual examination was in accordance with approved and adequate procedures.
- a.3. The examination was adequate to identify, disposition and resolve deficiencies.
- a.4. The examination performed was capable of identifying the PWSCC phenomenon described in the Bulletin.
- b. The general condition of the Reactor Vessel (RV) head was clean bare metal with some localized staining and grit like debris. The step insulation configuration provided easy access for examination by a remote visual robot.
- c. Small boron deposits, as described in Bulletin 2001-01, probably could be identified around the intersection of the penetration and the head. The deposits probably could be characterized by the visual examination technique used. None were found during this visual inspection.
- d. No material deficiencies associated with concerns in Bulletin 2001-01 were found.
- e. The as low as reasonably achievable (ALARA) radiation exposure controls for the visual examination process seemed to be effective.

TI 2515/145, Section 04.04 c, requires that inspectors report lower-level issues concerning data collection and analysis, and issues deemed to be significant to the phenomenon described in Bulletin 2001-01. There were no lower-level issues identified by the inspector.