November 7, 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 05000443/2003004

Dear Mr. Warner:

On September 27, 2003, the NRC completed an inspection at the Seabrook Nuclear Power Station. The enclosed report documents the inspection findings which were discussed on October 1, 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. No significant findings were identified.

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 calender 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.

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/adams.html.

Sincerely,

/RA/

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

Docket No. 05-443
License No: NPF-86

Enclosure: Inspection Report No. 05000443/2003004
w/Attachment: Supplemental Information

cc w/encl:
J. A. Stall, FPL Senior Vice President, Nuclear & CNO
J. M. Peschel, Manager - Licensing
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 Coordinator
J. Clifford, NRR
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)

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U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.:	05000443
License No.:	NPF-86
Report No.:	05000443/2003004
Licensee:	Florida Power & Light Energy Seabrook, LLC (FPL)
Facility:	Seabrook Station, Unit 1
Location:	Post Office Box 300 Seabrook, New Hampshire 03874
Dates:	June 29, 2003 to September 27, 2003
Inspectors:	Glenn Dentel, Senior Resident Inspector Javier Brand, Resident Inspector Ken Jenison, Senior Project Engineer Jason Jang, Senior Radiation Specialist Dave Silk, Senior Emergency Preparedness Specialist Nancy McNamara, Emergency Preparedness Specialist Steve Shaffer, Reactor Engineer
Approved by:	Brian J. McDermott, Chief Projects Branch 6 Division of Reactor Projects

Enclosure

CONTENTS

SUMMARY OF FINDINGS

IR 05000443/2003-004; 06/29/2003 - 09/27/2003; Seabrook Station, Unit 1; Routine Integrated Report.

The report covered a 13-week period of inspection by resident inspectors, and announced inspections by a senior radiation specialist and a senior emergency preparedness specialist. 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

No significant findings were identified.

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

Initiating Events/Mitigating Systems/Barrier Integrity [REACTOR - R]

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

The inspectors completed three inspections using the adverse weather procedure.

High Temperature Alarms

On July 7, the inspectors reviewed the effect on plant equipment and Seabrook's response to increased ambient temperatures. The inspectors verified that the increased temperatures did not significantly affect plant equipment. The inspectors performed walkdowns of the affected areas and the control room, reviewed applicable temperature data and associated control room alarms, and interviewed control room operators to assess their understanding of the effect of the high ambient temperature on plant equipment. The inspectors focused the inspection on high temperatures observed in the "A" and "B" battery rooms and the emergency feedwater pump house.

Train "B" SW Pump House Ventilation Damper Failure

On July 2, during a scheduled loss of power surveillance test, the "B" train service water (SW) pump house ventilation damper (1- SW-DP-39B) failed to open as required. The inspectors reviewed temperature increases due to the failed damper and evaluated the impact on operability of the service water system. The inspectors performed field walkdowns, interviewed the system engineer, and reviewed condition report (CR) 03-05665.

Hurricane/Severe Weather Preparations

The inspectors reviewed Seabrook's preparations for weather related risks associated with tornados, hurricanes, and high winds. The inspectors performed walkdowns of the outside areas of the plant during preparations for hurricane Isabel. The inspectors also reviewed the testing, condition, and previous corrective actions for tornado dampers and tornado seals at the site. The inspectors reviewed the following documents:

- OS1200.03, "Severe Weather Conditions," Rev. 11
- NM 11800, "Hazardous Condition Response Plan," Rev. 11
- Various maintenance work orders on tornado seals
- MA 5.7, "Station Barriers, Penetration Seals, and Fire Barrier Wrap," Rev. 4

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

Full System Walkdown - Emergency Feedwater System

The inspectors performed one full system walkdown of the emergency feedwater (EFW) system, involving equipment in both trains, and associated piping and in-line components.

The inspectors verified the material condition and operational lineup for the EFW system by conducting a thorough walkdown of the system and reviewing the following documents:

- Piping and instrumentation drawings (P&ID);
- Equipment alignment, operating and emergency procedures;
- Vendor Manuals;
- System health reports;
- Open work requests and condition reports.

Partial System Walkdowns

The inspectors performed three partial system walkdowns:

- On July 23, the inspectors performed a partial walkdown of the “A” emergency diesel generator (EDG) while the “B” EDG was out-of-service for scheduled maintenance. The inspectors conducted a walkdown of the "A" EDG, the control room, and the essential switchgear to verify proper system alignment.

- On July 23, the inspectors performed a walkdown of the "A" residual heat removal (RHR) system while the “B” EDG was out-of-service for maintenance. The “B” EDG provides emergency power to the “B” RHR train.

- Between August 24 and 27, the inspectors performed a walkdown of the control room ventilation and air-conditioning system. The inspectors also conducted walkdowns of the computer room cooling system, the control room HVAC system, control building, vital area exteriors, and selected adjoining spaces.

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

- Applicable piping and instrumentation drawings;
- CRs 03-0096 and 03-1714;
- Applicable operational lineup procedures;
- OX1426.18, "Aligning DG 1A Controls for Auto Start," Rev. 3.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspectors examined eight 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:

- "A" and "B " essential switchgear room-control building, 21’6" elevation;
- "A," "B," "C," and "D" battery rooms, 21’6" elevation;
- Cable spreading room, 50’0" elevation;
- Service water pump house, 21’0" elevation;
- Emergency feedwater pump house, 27’0" elevation;
- "A " and "B " charging pump cubicles, 7’0" elevation;
- Primary component cooling water pump area, 25’0" elevation;
- Control room ventilation envelope, 75’0" elevation.

The following documents were used to support this inspection activity:

- Fire Protection Pre-Fire Strategies and Fire Hazard Analysis;
- Compensatory List of Fire Protection Equipment out-of-service;
- Fire Protection Equipment Layout Drawings;
- Technical Requirements Manual;
- FP2.1 "Control of Ignition Sources."

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors completed both one external and one internal inspection of flood protection barriers for the safety related cable spreading room. The inspectors performed walkdowns to assess the material condition of the barriers and to inspect the cable spreading room floor and floor penetrations for cracks. The inspectors verified that flood protection equipment and barriers were in accordance with station drawings and procedures. The inspectors also reviewed several engineering evaluations, the applicable design basis document, condition reports, the updated final safety analysis report (UFSAR), and interviewed the flood protection engineer to verify that Seabrook had implemented measures to protect safety-related equipment from flooding events.

Documents reviewed during the inspection are listed in the attachment.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

a. Inspection Scope

Quarterly Resident Inspector Review

On September 18, the inspectors observed one operator training session 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 Implementation (71111.12)

a. Inspection Scope

The inspectors completed three maintenance rule samples including two system reviews and one specific issue review.

System Reviews

The inspectors evaluated Maintenance Rule (MR) implementation for the emergency feedwater and control room ventilation systems (control room ventilation and air conditioning (CAB) system and the containment air handling (CAH) system). The

inspectors reviewed the effectiveness of maintenance through the review of deficiencies identified, historical performance, and overall system performance. The following documents applicable to the selected systems were reviewed:

- Condition reports for the most recent eight months;
- MR scoping document and MR performance criteria;
- System health and system walkdown reports;
- MR performance data including maintenance rule function failures (MRFFs) and unavailability data;
- Vibration, oil analysis and inservice testing data;
- Applicable operating experience information.

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

Maintenance Rule Functional Failure (MRFF) Review

The inspectors reviewed the application of the MR for five safety-related 4kv breaker failures. The failures were the result of diode failures and occurred from October 2000 to July 2003. The corrective action aspect of these failures was described in the NRC Inspection Report 05-443/03-03. The inspectors specifically examined the MRFF evaluations against the guidance in NUMARC 93-01, Revision 3, "Industry Guideline for Monitoring the effectiveness of Maintenance at Nuclear Power Plants," Rev. 3.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation (71111.13)

a. Inspection Scope

The inspectors reviewed the scheduling and control for two planned maintenance activities and three emergent maintenance troubleshooting 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 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." Seabrook's specific risk assessment was conducted using Seabrook's "Safety Monitor." The inspectors reviewed the following items.

- On September 9, the inspectors reviewed the risk associated with planned maintenance on the "A" and "B" reserve auxiliary transformers. The inspectors also observed portions of the maintenance conducted using procedure, LN 0561.02, "Westinghouse Sudden Pressure Relay Test," Rev. 1.

- On September 2 and 3, the inspectors reviewed the risk associated with planned maintenance on safety-related 480V substation bus 51, "A" emergency diesel generator, and "A" charging pump. The inspectors also reviewed the on-line maintenance assessment form for bus 51 and associated engineering calculations that supported the cross-tie of two safety-related buses.

- On August 20 and 21, the inspectors reviewed the risk associated with scheduling and controls of emergent maintenance activities for troubleshooting and repair of a letdown leak. The leak occurred following operators flushing the 2B letdown mixed bed demineralizer. Seabrook determined that the leak was from several diaphragm valves as a result of a pressure transient which occurred following realigning the letdown flow to the volume control tank after the demineralizer bed flush (see Section 1R14). The inspectors attended several pre-job briefs, performed field and control room walkdowns, reviewed operating procedure OS 1002.05, "Operation of Mixed Bed Demineralizers," Rev. 8 and conducted interviews to assess Seabrook's evaluation of the overall risk.

- On July 28 to 31, the inspectors reviewed the online maintenance assessment for emergent work/troubleshooting for two average temperature (Tave)/delta temperature instrument failures. System engineers determined the cause of the first failure was a bad circuit board, and that the second failure occurred because the wrong circuit card had been replaced following the initial troubleshooting. The inspectors performed control room walkdowns, observed portions of the work activity, examined the work order and associated documents, and interviewed cognizant maintenance technicians, operators, and engineers. In addition, the inspectors reviewed condition reports 03-06541, 03-06330 and 03-06261 to assess Seabrook's evaluation and corrective actions to prevent recurrence of this event.

- On July 23, the inspectors reviewed the risk associated with emergent work to investigate a "B" EDG loss of automatic voltage adjustment and to implement repairs. The problem was identified during a post maintenance test run conducted as part of a scheduled EDG outage. Engineering determined that the condition was caused by a failure of the automatic motor operator control (MOC-1). Engineers also determined that the redundant manual motor operator control (MOC-2) was not affected and was available for proper loading of the "B" EDG during an emergency condition. The inspectors performed control room and EDG walkdowns, and interviewed technicians, operators, and engineers, attended the pre-evolution briefing, and observed work activities to assess Seabrook's control and evaluation of risk.

b. Findings

No findings of significance were identified.

1R14 Operator Performance During Non-Routine Evolutions and Events (71111.14)

a. Inspection Scope

The inspectors reviewed operator response to four non-routine evolutions.

August 14 Grid Fluctuation

The inspectors reviewed operators' and the plant response to the grid voltage and frequency fluctuations on August 14. The grid fluctuations resulted in extensive blackouts in the Midwest and Northeast regions. Seabrook experienced a decrease of less than 10% electrical power (approximately 100 MWe). The inspectors reviewed operator response by reviewing operating procedures and observing activities in the control and switchgear rooms. Additional inspection efforts included examining computer logs, reviewing expected turbine and steam dump control system response, interviewing plant personnel, and examining event team actions. In addition, the inspectors reviewed the operator's critique and verified that minor deficiencies identified during their review were entered into the corrective action process.

Power Coastdown before Refueling Outage

Prior to Seabrook's October refueling outage, the plant began a planned coastdown in power. To maximize the time at higher power level, the average reactor coolant temperature (Tave) was allowed to coast down or reduce in value (Tave coastdown). The inspectors reviewed the following documents and interviewed operators to examine Seabrook's preparation and the operators' response to the Tavg coastdown.

- UFSAR Changer Request 03-037, "End of Cycle 9 Tavg Coastdown"
- OS 1000.10, "Operation at Power," Section 4.2, "Controlling Plant Operation during End of Cycle Coastdown," Rev. 4
- Standing Operation Order 03-019, "Additional Restrictions on Calorimetric Instruments during the Tavg Coastdown"
- Licensed Operator Requalification Phase 03-05, L1731C - Tavg Coastdown

Letdown System Leakage

On August 20, operators received an alarm for increased RCS leakage after placing the boron thermal recovery portion of the letdown system in service. The operators took various actions to identify and isolate the leak. Repairs were conducted on diaphragm valves; however, the leak recurred on August 22. In both cases, the RCS leakage was isolated when the non-safety letdown system was isolated. The inspectors reviewed operators' response to the indications of increased RCS leakage and evaluated their

actions against abnormal operating procedure, OS 1201.02, "RCS Leak," Rev. 10. The inspectors also reviewed the troubleshooting activities and risk (See Section 1R13).

Increase in "D" Reactor Coolant Pump #1 Seal Leakoff

On September 22, operators noted an increase in the #1 Seal Leakoff for the "D" reactor coolant pump (RCP) with the excess letdown flow path in service. The inspectors observed the operators' response and use of abnormal operating procedure, OS 1201.01, "RCP Malfunction," Rev. 9. The inspectors also reviewed operators' control and oversight of various troubleshooting activities including swapping of seal injection filters, restoration of letdown, and various other activities that could impact the "D" RCP seal. The licensee was able to reverse the leakoff trend and is scheduled to replace the seal during the 9th refueling outage.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed three operability evaluations and/or condition reports in order to verify 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 Technical Specifications (TS) limiting condition for operation implications were properly addressed. The inspectors performed field walkdowns, interviewed personnel, and examined applicable documents during review of the following items:

- CR 03-06404, which described the loss of the local annunciator panel for the "B" EDG on July 23 following maintenance activities. The inspectors examined the operators' determination that the EDG remained available but inoperable with loss of the panel.

- CR 03-06556, which described the trip of the "A" EDG air supply fan on August 6. The inspectors examined the operability of the "A" EDG with the air supply fan unavailable, the exhaust fan functioning, and outside temperatures ranging between 65 and 85 degrees Fahrenheit. The inspectors reviewed calculation C-S-1-62003, "EDG Supply and Exhaust Fan Outage Study," Rev. 0 and Technical Requirement 24, "Area Temperature Monitoring."

- CR 03-07259, which addressed unfiltered in-leakage into the control room envelope greater than design. The inspectors reviewed the operability evaluation, examined associated calculations, and conducted interviews with

cognizant plant engineering staff to assess the adequacy of Seabrook's treatment of this degraded condition.

b. Findings

No findings of significance were identified.

1R16 Operator Work-Arounds (71111.16)

a. Inspection Scope

The inspectors completed one cumulative inspection of operator work-arounds and reviewed in detail one specific operator work-around.

Review of Open Work-Arounds and Operation Impact Items

The inspectors reviewed Seabrook's current listing of open operator work-arounds and operator impact items. The inspectors examined the Operations Administrative Instruction OAI.20 "Operations Work-Arounds and Operational Impact Items," Rev. 16 and verified the cumulative effect of the open items was properly assessed. The inspectors also verified the items were properly tracked and scheduled for completion based on the priority and impact on the plant. The inspectors independently evaluated whether the work-arounds adversely impacted the ability of the operators to implement emergency procedures or respond to plant transients.

Back-seated Reactor Coolant Pumps Seal Injection Isolation Valves

The inspectors reviewed the actions required by operators to operate the reactor coolant pumps (RCP) seal injection isolation valves during accident conditions. In addition, the inspectors reviewed the applicable control room clearance tags which required operators to partially exercise the valves by hand prior to their remote /electrical operation. The RCP seal injection valves are motor operated and are part of the containment isolation boundary. In addition, these valves must be maintained in the open position during full power operation to insure proper flow to the RCP seals. The valves were manually placed in their back seat to stop excessive valve packing leaks. The inspectors also reviewed design documents, the emergency response procedures, the applicable work orders, and interviewed operators to verify that the allowable back-seating torque was not exceeded and that the capability of the operators to isolate containment (isolate seal injection flow to the reactor coolant pumps) was not affected. The inspectors reviewed emergency operating procedures, engineering calculations, and environment conditions that could impact manual operator actions.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed four post maintenance testing (PMT) 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:

- On July 24, OS1026.09, “Operation of DG 1B,” Rev. 8, following completion of several scheduled work activities and replacement of a motor operated controller (MOC-1) required for automatic operation of the voltage regulator. The voltage regulator controller failed on July 23, at the start of a post maintenance run, resulting in a loss of automatic reactive load control and failure of the post maintenance test run (See Section 1R13).

- On July 24, the inspectors reviewed completed paperwork regarding the PMTs for 17 work orders completed during the "B" EDG maintenance outage.

- On August 27, the inspectors reviewed completed paperwork regarding the PMTs for several work orders completed to repair leaking letdown valves. In addition, the inspectors reviewed procedure OS1002.02, "Operation of Letdown, Charging and Seal Injection," Rev. 12, used by operators to restore letdown after repairs were completed.

- During the weeks of September 22 and September 30, the inspectors reviewed paperwork for the PMT and restoration of letdown temperature control valve, CS-TV-130 following completion of valve changeout per WO 0228267. The inspectors also conducted interviews with various site personnel, attended pre-evolution meetings, and reviewed actions to address the emergent issues with high reactor coolant pump seal leakoff (See Section 1R14).

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed portions of three surveillance testing activities for safety-related systems to verify that the systems and components were capable of performing their intended safety function, to verify operational readiness, and to ensure compliance with required TS 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 July 23, OX1426.16, "DG 1A Tech Spec Action Statement Surveillance," Rev. 4. This surveillance test run was performed to demonstrate operability of the "A" EDG, after a voltage regulator problem was identified in the "B" EDG at the start of a post maintenance run. The inspectors performed field walkdowns, and interviewed technicians and the system engineer to verify that the "A" EDG voltage regulator operated satisfactorily.

- On July 29, CS0910.01, "Primary Systems Sampling at SS-CP-166A, " Rev.9 and CX0901.02, "Determination of Dose Equivalent I-131, " Rev. 10.

- The inspectors observed portions of surveillance testing activities conducted in response to the NRC Generic Letter 2003-01, Control Room Habitability. The inspectors completed the review to verify that the CAB with 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, (4) tested in accordance with American Society of Testing Materials (ASTM) -741 "Standard Test Method for Determining Air Change in a Single Zone by Means of a Tracer Gas Dilution" and 5) in compliance with required TS and surveillance procedure requirements. In support of this inspection activity, the inspectors: 1) attended various evolution related briefings and meetings; 2) performed system and control room walkdowns; 3) observed operators and technicians perform test evolutions; 4) observed surveillance testing that was performed by a contractor using third party procedures, equipment, and calculations; 5) inspected a root cause and extent of condition engineering effort; 6) reviewed supporting system parameters; and 7) interviewed a system engineer, design engineers, control room operators, field operators, oversight personnel, a contract engineer and site management.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed one temporary alteration and associated implementing documents to verify Seabrook’s design basis and affected system/component operability were maintained. Temporary alteration 03-021 was a modification to a fire protection panel.

The inspectors verified appropriate controls for the temporary alteration were in accordance with NRC requirements and Seabrook's Maintenance Manual, MA 4.3A, "Temporary Modifications and Temporary Alterations," Rev. 16. The inspectors also examined the combined effect of the temporary alteration with the other outstanding temporary modifications and alterations.

b. Findings

No findings of significance were identified.

Emergency Preparedness [EP]

1EP2 Alert and Notification System (ANS) Testing (71114.02)

a. Inspection Scope

An onsite review of Seabrook's ANS was conducted to assess Seabrook's capability for prompt notification of the public to take protective actions. The inspector interviewed the technical services supervisor, who oversees the siren program, and reviewed condition reports associated with the siren system to assess the timeliness and adequacy of corrective actions. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 02, and the applicable planning standard, 10 CFR 50.47(b)(5) and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

b. Findings

No findings of significance were identified.

1EP3 Emergency Response Organization (ERO) Augmentation Testing (71114.03)

a. Inspection Scope

An onsite review of Seabrook's ERO augmentation staffing requirements and the process for notifying the ERO was conducted to ensure the readiness of key staff for responding to an event and timely facility activation. The inspector reviewed Seabrook's emergency plan qualification records for key ERO positions, 2003 communication pager test records, and associated condition reports. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 03, and the applicable planning standard, 10 CFR 50.47(b)(2) and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

a. Inspection Scope

The inspectors completed an in-office review of Seabrook submitted changes for the Emergency Plan-related documents received during the period of March-October 2002 to determine if the changes decreased the effectiveness of the Plan. A thorough review was conducted of documents related to the risk significant planning standard (RSPS) whereas a cursory review was conducted for non-RSPS documents.

An onsite review of Seabrook's revisions to the emergency plan, implementing procedures, and emergency action level changes was performed to determine that the changes had not decreased the effectiveness of the plan. The revisions covered the period from 2002 and 2003 and the inspector reviewed the 10 CFR 50.54(q) reviews associated with selected samples of those revisions. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 04, and the applicable requirements in 10 CFR 50.54(q) were used as reference criteria.

b. Findings

No findings of significance were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies (71114.05)

a. Inspection Scope

The inspector reviewed corrective actions identified by Seabrook pertaining to findings from drill/exercise reports for 2002 and 2003 and the associated condition reports to determine the significance of the issues and to determine if repeat problems were occurring. A list of these condition reports and corrective action program procedures are contained in an attachment to this report. In addition, the inspector reviewed the audit reports from 2001 and 2002, as well as, self-assessments performed in 2003. This inspection was conducted according to NRC Inspection Procedure 71114, Attachment 05, and the applicable planning standard, 10 CFR 50.47(b)(14) and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors reviewed the operators' emergency classification and notification completed during requalification training (See Section 1 R11). The inspectors evaluated

the results against Seabrook's Emergency Response Manual 1.1, "Classification of Emergencies" and NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Rev. 2.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Public Radiation Safety (PS)

2PS3 Radiological Environmental Monitoring Program (REMP) (71122.03)

a. Inspection Scope

The inspector evaluated the effectiveness of Seabrook's Radiological Environmental Monitoring Program (REMP) at the Seabrook Station and at the Contractor Laboratory (Framatom ANP, Environmental Laboratory, Westboro, Massachusetts). The requirements of the REMP are specified in the Technical Specifications/Technical Requirements Program 5.2/Offsite Dose Calculation Manual (TS/TRP 5.2/ODCM).

Documents reviewed during the inspection are listed in the attachment.

The inspector toured and observed the following activities to evaluate the effectiveness of Seabrook's REMP.

- observation of the operation of meteorological monitoring instruments at the tower and the control room;
- observation of air iodine/particulate and water sampling techniques; and
- walkdown for determining whether all air samplers, milk farms, and 25% TLDs were located as described in the offsite dose calculation manual (ODCM) (including control and indicator stations) and for determining the material condition of the equipment.

b. Findings

No findings of significance were identified.

2PS4 Radioactive Material Control Program (71122.02)

a. Inspection Scope

The inspector reviewed the following documents to ensure that Seabrook met the requirements specified in their program for the unrestricted release of material from the Radiologically Controlled Area (RCA):

- the most recent calibration results for the radiation monitoring instrumentation (Small Article Monitor, SAM-9), including the (a) alarm setting, (b) response to the alarm, (c) the lower sensitivity, and (d) the failure rate at the alarm setting;
- Seabrook' s criteria for the survey and release of potentially contaminated material using gamma spectroscopy (calibration efficiency for bulk sample analyses);
- the methods used for control, survey, and release from the RCA; and
- associated procedures and records to verify for the lower limits of detection for bulk sample analyses.

The review was evaluated against criteria contained in 10 CFR 20, NRC Circular 81-07, NRC Information Notice 85-92, NUREG/CR-5569, Health Position Data Base (Positions 221 and 250), and Seabrook's procedures.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

Heat Removal System/Emergency Feedwater System Unavailability

The inspectors reviewed the performance indicator (PI) for the EFW system for the time period from July 2002 to June 2003 against the applicable criteria specified in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Rev. 2 to verify that all conditions that met the NEI criteria were recognized and included in the performance indicator. The inspectors reviewed records including, corrective action program records, control room operators' logs, and PI data summary reports. The inspectors reviewed in detail the operator logs and operations procedures completed during December 2002 and January 2003. The inspectors interviewed system engineers and operators to ensure that proper compensatory measures were taken when equipment was declared inoperable but available.

Safety System Functional Failures

The inspectors reviewed the PI data for safety system functional failures to determine whether NEI 99-02 was properly implemented. The inspectors reviewed the data collected, PI definitions, and 10 CFR 50.73 requirements described in detail in NUREG 1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73, " Rev. 2. The inspectors verified the accuracy of the reported data through reviews of the Licensee Event Reports submitted during the period of September 2002 to August 2003.

Reactor Coolant System Activity

The inspectors reviewed the PI data for reactor coolant system activity to determine whether NEI 99-02 was properly implemented during the period of July 2002 to June 2003. The inspectors verified the calculations and observed the reactor coolant system sample and analysis using CS0910.01 and CX0901.02 (See Section R22, Surveillance Testing). The inspectors reviewed the following documents in the evaluation of the PI data:

- Regulatory Guide 1.109, “Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I,” Rev. 1;
- JD0999.910, “Reporting Key Performance Indicators Per NEI 99-02,” Rev. 0;
- RCS sample results given in iodine 131 to 135 and as dose equivalent iodine;
- TS 3.4.8, “Specific Activity”

Reactor Coolant System Leakage

The inspectors reviewed the PI data for reactor coolant system leakage to determine whether NEI 99-02 was properly implemented during the period of July 2002 to June 2003. The inspectors reviewed a sample (April, May, and June data) of the data used to determine the maximum monthly leakage. The inspectors reviewed procedure OX1401.02, “RCS Steady State Leak Rate Calculation,” Rev. 6 and independently completed a calculation of RCS identified leakage. The inspectors also reviewed the RCS leakage TS requirements and verified the PI calculation.

EP Indicators

The inspector reviewed Seabrook’s procedure, EPDP-03, "Emergency Preparedness Performance Indicators," Rev 10, for developing the data for the EP PIs which are: (1) Drill and Exercise Performance (DEP); (2) ERO Drill Participation; and (3) ANS Reliability. The inspector reviewed Seabrook’s drill/exercise reports, training records, and ANS testing data to verify the accuracy of the reported data. The period of review included the fourth quarter of 2002 through, and including, the third quarter of 2003. The acceptance criteria used for the review was 10 CFR 50.9 and NEI 99-02.

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution (71152)

a. Inspection Scope (71122.03)

The inspector reviewed the following 2002-2003 Condition Reports (CRs) to evaluate the effectiveness of Seabrook's problem identification and resolution processes in the areas of the REMP:

- CRs for Routine REMP (02-05007, 02-08891, 02-14575, 02-14585, 03-03166, 03-03668, and 03-06109);
- CRs for Meteorological Monitoring Program (02-01517, 02-13994, 02-16942, 03-01142, 03-02978, and 03-03169); and
- CRs for Radioactive Material Control Program (02-05754, 02-09013, 02-09020. 03-01459, and 03-01472).

The inspector also reviewed Seabrook's groundwater tritium trending and tracking evaluation results from June 1999 to August 2003. In June 1999, Seabrook discovered tritium activity in a containment annulus ground water sample. The identification of the tritium source was documented in CR 99-2720. Seabrook identified that the tritium source in the ground water was from spent fuel pool (SFP) water. The inspectors had previously reviewed the condition during periodic REMP inspections and conducted additional reviews during this inspection.

The inspectors reviewed the engineering evaluation and examined the sampling data to verify that Seabrook was within the radioactive liquid effluent concentration limit for tritium at the site boundary as established in 10 CFR 20, App. B, Table 2 and the ODCM.

b. Findings

No findings of significance were identified.

4OA5 Other Activities

Third Party Assessment Report Review

The inspectors reviewed the final report of an Institute of Nuclear Power Operations evaluation conducted in August of 2002.

4OA6 Meetings, including Exit

Exit Meeting Summary

The inspectors presented the inspection results to Mr. G. St. Pierre on October 1, 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.

Site Management Visit

On August 12 and 13, Mr. Brian McDermott, Chief, Projects Branch 6, toured the site and met with Mr. Mark Warner and other members of licensee management.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

G. St. Pierre, Station Director
P. Freeman, Engineering Director
M. Kiley, Operations Manager
M. Makowicz, Plant Engineering Manager
D. Sherwin, Maintenance Manager
J. Giarrusso, Security Manager
M. O'Keefe, Regulatory Compliance Supervisor

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened, Closed and/or Discussed:

None.

LIST OF DOCUMENTS REVIEWED

Section 1R06 Flood Protection Measures

Documents:

UFSAR Sections 9.3.3 and 9.3.4, "Equipment and Floor Drainage System
UFSAR Sections 3.4.1, "Flood Protection"
UFSAR Section 9.5.1, "Fire Protection System"
UFSAR Section 9.5.1.2.c.4 "Deluge Systems"
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
1-NHY-BD-2007-1, "Control Building-CTL Room Complex, Elev. 75'-0," Rev. 3
1-NHY-BD-2006, "CNTRL Building-Cable Spreading RMS and Mechanical Rooms, Elev. 50'-0," Rev. 2
Report TP-7, "Seabrook Station Moderate Energy Line Break," Rev. 5
MX0599.02, "18 Month Inspection of Technical requirement Fire Rated Assembly Penetration Seals," Rev. 1

Section 1EP2 Alert and Notification System (ANS) Testing

Documents/Procedures:

Seabrook Station Radiological Emergency Response Plan, Appendix E, Rev 28
Siren Department Instruction: SIR.25, Rev 1
Siren Department Instruction: SIR.10, Rev 3
Siren Department Instruction: SIR.12, Rev 1
Siren Department Instruction: SIR.18, Rev 1

Condition Reports:

02-15208
03-04821
03-07906
03-07980

Section 1EP3 Emergency Response Organization (ERO) Augmentation Testing

Security Response to a Declared Radiological Emergency, GN1332.00, Rev 25 Change 5
Seabrook Station Emergency Preparedness Facility Inventory Manual, Rev 37
Seabrook Station Radiological Emergency Response Plan, Section 8, Rev 41
Seabrook Team Management Manual, Chapter 3, Section 11, Rev 17
Emergency Response Organization Maintenance Program, EPDP-11, Rev 8

Section 1EP4 Emergency Action Level (EAL) and Emergency Plan Changes

Seabrook Station Radiological Emergency Response Plan, Rev 42, 43, 44
CRC Change Package SB-1736
CRC Change Package SB-1741
CRC Change Package SB-1745
CRC Change Package SB-1749
CRC Change Package SB-1750

Section 1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

Condition Reports:

02-01642	02-14879	02-14895
02-13858	02-14880	02-14980
02-14809	02-14881	02-14984
02-14813	02-14882	02-14998
02-14815	02-14883	02-15017
02-14829	02-14884	02-15018
02-14831	02-14885	02-15051
02-14856	02-14887	02-15054
02-14862	02-14888	02-15057

02-14864	02-14889	02-15058
02-14865	02-14890	02-15059
02-14868	02-14893	03-07916
02-14878	02-14894	03-05465

Documents/Procedures:

Root Cause Analysis for CR 03-02525
Emergency Preparedness Drill and Exercise Manual, Rev 20
Nuclear Oversight Audit Report No. 01-A08-01, Emergency Preparedness
Nuclear Oversight Audit Report No. 02-A08-01, Emergency Preparedness

Section 2PS3 Radiological Environmental Monitoring Program

Seabrook Station Documents
- the 2001 and 2002 Annual REMP Reports;
- selected analytical results for 2003 REMP samples;
- the most recent ODCM and technical justifications for ODCM changes, including sampling media and locations;
- 2003 Quality Assurance (QA) Audit (Audit Number: SBK-03-06) for the REMP/ODCM and meteorological monitoring program implementations and corrective actions;
- Annual QA Surveillance Reports performed by QA Oversight Group;
- Daily Routine Observation Reports performed by QA Oversight Group;
- REMP Self-Assessment Reports;
- the most recent calibration results for all TS/ODCM air samplers;
- the 2003 quarterly calibration results of the primary and backup meteorological monitoring instruments for wind direction, wind speed, and temperatures;
- review of the 2002/2003 meteorological monitoring data recovery statistics;
- the Land Use Census procedure and the 2002 results; and
- associated procedures.

Framatom ANP Environmental Laboratory Documents
- review of QA/QC Manual;
- 2002 Semiannual Analytical and Dosimetry QA Status Reports;
- implementation of the quality control (QC) program;
- implementation of the environmental thermoluminescent dosimeters (TLDs) program; and
- implementation of the interlaboratory and intralaboratory comparisons.

LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
ANS	Alert and Notification System
ASTM	American Society of Testing Materials
CAB	Control Room Ventilation & Air Conditioning
CAH	Containment Air Handling
CR	Condition Report
DEP	Drill and Exercise Performance
EAL	Emergency Action Level
EDG	Emergency Diesel Generator
EFW	Emergency Feedwater
EP	Emergency Preparedness
ERO	Emergency Response Organization
LLD	Lower Limit of Detection
MOC	Motor Operated Control
MRFF	Maintenance Rule Function Failures
MR	Maintenance Rule
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PI	Performance Indicators
P&ID	Piping & Instrumentation Drawings
PMT	Post Maintenance Testing
QA	Quality Assurance
QC	Quality Control
RCA	Radiologically Controlled Area
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
REMP	Radiological Environmental Monitoring Program
RHR	Residual Heat Removal
RSPS	Risk Significant Planning Standard
SAM	Small Article Monitor
SFP	Spent Fuel Pool
SW	Service Water
TLD	Thermoluminescence Dosimeter
TRP	Technical Requirements Program
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report