July 22, 2005

Mr. Gene St. Pierre
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 INTEGRATED INSPECTION REPORT 05000443/2005005

Dear Mr. St. Pierre:

On June 30, 2005, the NRC completed an inspection at the Seabrook Nuclear Power Station. The enclosed report documents the inspection findings which were discussed on July 14, 2005, with yourself 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 one self-revealing finding of very low safety significance (Green). This finding was determined to involve a violation of NRC requirements. However, because of its very low safety significance and because it was entered into your corrective action program, the NRC is treating this finding as a non-cited violation, in accordance with Section VI.A of the NRC Enforcement Policy.

If you contest the non-cited violation, 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, D.C. 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at Seabrook.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm.html

Sincerely,

/RA/

Paul G. Krohn, Chief
Projects Branch 6
Division of Reactor Projects

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

Enclosure: Inspection Report No. 05000443/2005005
w/ Attachment: Supplemental Information

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U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.:	05000443
License No.:	NPF-86
Report No.:	05000443/2005005
Licensee:	Florida Power & Light Energy Seabrook, LLC (FPL)
Facility:	Seabrook Station, Unit 1
Location:	Post Office Box 300 Seabrook, New Hampshire 03874
Dates:	April 1, 2005 to June 30, 2005
Inspectors:	Glenn Dentel, Senior Resident Inspector Steve Shaffer, Resident Inspector Thomas Moslak, Health Physicist Brice Bickett, Reactor Inspector Tony Cerne, Contract Engineer Ken Jenison, Senior Project Engineer Nicole Sieller, Reactor Engineer Josephine Talieri, Reactor Inspector Michael Dudek, Nuclear Safety Professional Shriram Iyer, Project Engineer Fred Jaxheimer, Resident Inspector - Susquehanna Sam McCarver, Project Engineer Jeffrey Kulp, Reactor Engineer Nancy McNamara, Emergency Preparedness Specialist
Approved by:	Paul G. Krohn, Chief Projects Branch 6 Division of Reactor Projects

Enclosure

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SUMMARY OF FINDINGS

IR 05000443/2005005; 4/1/2005-6/30/2005; Seabrook Station, Unit 1; Post-Maintenance Testing.

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

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Barrier Integrity

- Green. A non-cited violation of 10 CFR 50, Appendix B, “Corrective Action” revealed itself when the “B” containment building spray pump failed to start during surveillance testing. From April 24 to June 20, 2005, Seabrook did not identify that the emergency power sequencer card for the “B” containment building spray pump was in an inoperable condition such that the spray pump would not have automatically started during a high containment pressure actuation signal. This finding was associated with the cross-cutting area of problem identification and resolution in that the failed card was not identified for approximately 60 days despite opportunities both inside and outside the control room to have identified the deficiencies.

  The finding was more than minor because it affected the Barrier Integrity cornerstone objective to provide reasonable assurance that the containment design barrier would remain intact to protect the public and was associated with the attribute of equipment performance. The failure of the “B” containment spray pump to start impacted one of two containment pressure suppression components. The finding was determined to be of very low safety significance since the containment building spray system failure did not impact core damage probability or large early release frequency. (Section 1R19)

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

The plant began the inspection period in the tenth refueling outage (OR10). On April 30, 2005, the unit entered Mode 2 and achieved criticality. On May 1, the reactor was manually tripped following a main turbine trip on high vibration (see Section 4OA3). On May 2, the unit returned to power operations. The main generator breaker was closed and later reopened as part of turbine vibration data gathering. On May 3, the main generator breaker was closed following balancing of the turbine. On May 4, power was reduced and the main generator was taken offline to repair a leak on a non-safety related main steam drain line. The repair was completed on May 4 and the unit was synchronized to the grid. On May 10, the unit reached full power operation. On May 10, the unit increased reactor thermal power to 3587 megawatt thermal after receiving a 5.2 percent power uprate. On May 20, the unit was reduced to 55 percent power to perform planned maintenance on the "A" main feedwater pump. On May 21, 2005, the unit was returned to full rated thermal power and operated at or near full power through the end of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment (71111.04)

2. Full System Walkdown – Spent Fuel Cooling and Purification System (71111.04S - One Sample)

a. Inspection Scope

The inspectors conducted a detailed review of the alignment and conditions of the Spent Fuel Cooling and Purification System. The inspectors performed a walkdown to verify that system alignment was maintained in accordance with system drawings and procedures. The inspectors reviewed and evaluated the potential impact on system operation from open work orders, condition reports and tagged equipment. The system health report was reviewed, verified during the walkdown, and discussed with the system engineer. Documents reviewed to support the walkdown and to verify proper system alignment are listed in the Attachment.

b. Findings

No findings of significance were identified.

2. Partial System Walkdowns. (71111.04Q - Three Samples)

a. Inspection Scope

The inspectors performed the following partial system walkdowns:

- On April 5 through 7, 2005, the inspectors performed a walkdown of the “A” and “B” residual heat removal system prior to reactor cavity fill during the tenth refueling outage.

- On April 6 through 7, 2005, the inspectors performed a walkdown of the reserve auxiliary transformer while the unit auxiliary transformer was out-of-service for planned maintenance.

- On April 6 and 7, 2005, the inspectors performed a walkdown of the cooling tower while the ocean service water (SW) system was out-of-service for planned maintenance. The ocean SW system provides the normal mode of heat transfer from the primary component cooling water (PCCW), secondary component cooling water (SCCW), and diesel generator heat exchangers.

The inspectors conducted a walkdown of each system to verify that the critical portions of selected systems, such as valve positions, switches, and breakers, were correctly aligned in accordance with Seabrook's procedures and to identify any discrepancies that may have had an operability effect.

Documents reviewed to support the walkdown and to verify proper system alignment are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope (71111.05Q - Eleven Samples)

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:

- Fuel storage building, all elevations

- Containment building, 26' elevation
- Containment building, 0' elevation
- Containment building, -26' elevation
- East main steam/feedwater pipe enclosure, all elevations
- West main steam/feedwater pipe enclosure, all elevations
- Train “A” Residual Heat Removal (RHR), Containment Building Spray (CBS), Safety Injection (SI) Equipment Vault, -50' and -61' elevations
- Train “B” RHR, CBS, SI Equipment Vault, -50' and -61' elevations
- Primary auxiliary building, 7' elevation
- Primary auxiliary building, 25' elevation
- Cooling tower pump house, 46' elevation

The inspectors verified that the fire areas were in accordance with appropriate portions of the following documents:

- Fire Protection Pre-Fire Strategies and Fire Hazard Analysis
- Compensatory List of Fire Protection Equipment out-of-service
- Fire Protection Equipment Layout Drawings
- BISCO sealant Material parameters S-12, dated June 7, 1985
- Fire Hazard Analysis RHR-F-1A-Z, Revision 7
- P&ID -S12 -Pipe and conduit through three hour fire barrier, dated June 7, 1985

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06 - Three Samples)

a. Inspection Scope

The inspectors reviewed three samples of flood protection measures. These reviews were conducted to evaluate Seabrook's protection of safety-related systems from internal and external flooding conditions. The inspectors reviewed two areas where preventative maintenance on drain systems for preventing internal flooding events had been completed. These areas consisted of the Containment Building Drain System and the Turbine Building Drain System. In addition, an external walkdown of the Primary Auxiliary Building was conducted.

The inspectors determined whether internal and external flooding conditions were adequately addressed by Seabrook. The inspectors reviewed Seabrook’s Updated Final Safety Analysis Report (UFSAR) and other design basis documents. The inspectors compared the as-found equipment and conditions to ensure they remained consistent with those indicated in the design basis documentation, flooding mitigation documents, and risk analysis assumptions.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07)

1. Annual Resident Inspector Review (71111.07A - One Sample)

a. Inspection Scope

The inspectors examined the "B" PCCW heat exchanger to determine whether the heat exchanger could fulfill its design functions. The PCCW heat exchanger receives cooling from the Service Water (SW) system. The inspectors reviewed the data and trending results used to evaluate and monitor the thermal performance of "B" PCCW heat exchanger. The inspectors reviewed condition reports to verify the condition of the "B" PCCW heat exchanger. The inspectors interviewed the system engineers to evaluate the process used to monitor the "B" PCCW heat exchanger and maintain its thermal capabilities. Documents reviewed are listed in the Attachment.

b. Findings.

No finding of significance were identified.

2. Biennial Review (71111.07B - Three Samples)

a. Inspection Scope

Based on plant specific risk importance and resident inspector input, the inspector selected the “A” Primary Component Cooling Water (PCCW) heat exchanger (CC-E-17A) and both Emergency Diesel Generator (EDG) Jacket Water Heat Exchangers (DG-E-42 A&B) for this biennial review.

For the selected components, the inspector reviewed the testing and cleaning methods used by the licensee to ensure heat removal capabilities were consistent with commitments made in response to Generic Letter 89-13, “Service Water System Problems Affecting Safety-Related Equipment” and accepted industry practices. The inspector determined that test conditions were appropriate for the chosen test method and that acceptance criteria were consistent with design basis values. Also, the inspector reviewed methods for monitoring and controlling biotic and macro-fouling to verify that they were implemented effectively.

The inspector completed walk downs of the selected components and the associated service water intake and discharge structures to assess the general material condition of the selected heat exchangers and associated service water components. The inspector reviewed a sample of Condition Reports (CR) related to the selected heat exchangers to

ensure that problems related to these components were appropriately identified, characterized, and corrected.

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection (71111.08P - Three samples)

a. Inspection Scope

The inspectors observed in-process nondestructive examination (NDE) activities. The sample selection was based on the inspection procedure objectives and risk priority of those components and systems where degradation could result in an increase in risk of core damage. The direct observations and documentation reviews were performed to verify activities were performed in accordance with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section XI requirements. The inspectors reviewed a sample of inspection reports initiated to document the performance and record results of in-service inspection (ISI) examinations completed during the previous refueling outage. Also, the inspectors evaluated Seabrook's effectiveness in resolving relevant indications identified during ISI activities.

The inspectors observed in-process manual ultrasonic testing (UT) of the reactor coolant system steam generator nozzle inner radius weld, RC E-11A 2A-IR and performed a documentation review of the manual UT examinations of the steam generator nozzle to vessel welds, RC E-11A 2A-NZ and 2B-NZ to verify the effectiveness of Seabrook's program for monitoring degradation of risk significant piping systems, structures, and components. Inspectors observed the in-process manual UT examination of the 'C' feedwater nozzle elbow to pipe and pipe to nozzle safe end welds. The inspectors reviewed the documentation for the liquid penetrant examination of the charging system pipe weld CS 0328-02 04 and the UT examination for charging system pipe welds CS 0366-02 06 and CS 0366-02 05. The inspectors evaluated the examinations, personnel qualifications, and equipment certifications for compliance with the requirements of ASME Boiler and Pressure Vessel Code, the Electric Power Research Institute (EPRI) performance demonstration initiative standards, and station procedures.

The inspectors reviewed the examination results to determine whether there were any examinations with recordable indications that required evaluation beyond the ASME Code limits of acceptability.

Inspectors also observed the welding of one control rod drive mechanism (CRDM) attachment cavity seal weld. Although this is not an ASME Section XI pressure boundary weld repair, the welding of the canopy seal is an important long term corrective action to prevent the recurrence of boric acid leakage on the reactor vessel

head from CRDM canopy seals. Noting that only two CRDM attachment cavity seal welds were completed during the Seabrook refueling outage due to tooling difficulty and radiological exposure challenges, the inspectors verified that there were no existing canopy seal leaks. There was no welding on pressure boundary Class I or II systems completed to review.

The inspectors evaluated the inspections of pressurizer penetrations and steam space piping connections made from Alloy 82/182/600 materials by direct field observation of as-found conditions at five pressurizer penetration nozzles. The inspectors verified personnel qualifications and the examination instruction used for the inspection provided adequate guidance for the examination and documentation of the inspection including evaluation and disposition of discrepancies identified during the bare metal visual (VT-2) examination.

The inspectors assessed Seabrook's ability to identify boric acid corrosion and leaks. Seabrook's boric acid inspection procedures were reviewed to determine if they provided adequate scope and guidance on examination criteria and corrective actions for identified boric acid deposits. The inspectors conducted a boric acid walkdown of containment to verify that there were no active boric acid leaks and reviewed Seabrook's boric acid walkdown results for indications of active boric acid leaks or boric acid corrosion of carbon steel components.

Seabrook is a low susceptibility plant and the bare metal visual and volumetric examinations for the reactor vessel upper head are scheduled next outage in response to NRC Order EA-03-009.

Since there was no eddy current testing of steam generator tubes during this refueling outage, inspectors used the guidance found in Technical Guidance 9900, "Steam Generator Tube Primary-To-Secondary Leakage," to review the methods used to quantify primary to secondary leak rate and the calculated primary to secondary leak rate results for the last two operating cycles. These reviews were performed to verify that the primary to secondary leak rate was less than three gallons per day and to determine the effectiveness of Seabrook's procedures, equipment and practices for monitoring and responding to primary-to-secondary leakage.

The inspectors observed a portion of the video taped, remote in-vessel, visual Foreign Object Search and Retrieval steam generator inspections performed for the 'B' steam generator and performed a documentation review of the steam generator sludge lancing and secondary side inspection work packages. Inspectors also reviewed the technical basis for the extension in frequency of steam generator steam drum visual and UT thickness examinations. Inspectors evaluated equipment performance, frequency, inspection technique, and verified the comprehensive examination of steam generator internals to ensure tube structural integrity is maintained as described in the response to Generic Letter 97-06.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

1. Quarterly Resident Inspector Review (71111.11Q - One Sample)

a. Inspection Scope

The inspectors observed the conduct of licensed operators during a simulator training session on May 12, 2005. The inspectors reviewed the physical fidelity of the simulator in order to verify its likeness to the Seabrook control room. The inspectors examined the operators' ability to perform actions associated with high-risk activities, the Emergency Plan, and the correct use and implementation of procedures. The inspectors observed the training evaluator's critique of the operators' performance and verified that deficiencies were adequately identified and discussed.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

1. Resident Inspector Quarterly Inspection (71111.12B - Four Samples)

a. Inspection Scope

The inspectors evaluated Maintenance Rule implementation for the (1) Emergency Diesel Generator (EDG) system including fuel oil, lubrication oil, and jacket water subsystems, (2) 125 Volt DC system including J13 Relays, (3) Service Water system including associated flow indication (annubars) and (4) Emergency Feedwater system including eight Rotorque flow control valves. The EDG was categorized as 10 CFR 50.65(a)(1) by Seabrook, as a result of a combination of failures and maintenance related issues. The inspectors interviewed engineers, reviewed specific maintenance rule criteria, and examined the apparent root cause determination and corrective actions associated with the systems. The inspectors reviewed the implementation of the a(1) improvement plan and system monitoring plan and evaluated the activities against 10 CFR 50.65.

The inspectors also reviewed the Seabrook UFSAR, specific maintenance rule criteria, the system health reports for the above systems and numerous CRs associated with each system. Corrective actions and maintenance rule functional failure evaluations were assessed against 10 CFR 50.65 requirements and against the guidance in

NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 2.

b. Findings

No findings of significance were identified.

2. Biennial Inspection (71111.12B - Five Samples)

a. Inspection Scope

The inspectors reviewed FPL's periodic evaluation of the implementation of the Maintenance Rule required by 10 CFR 50.65 (a)(3). This evaluation covered a period from April 2003 through September 2004. The inspectors reviewed the periodic evaluation to ensure that Seabrook effectively assessed its (a)(1) goals, (a)(2) performance criteria, system monitoring, and preventive maintenance activities. The inspectors verified that the assessment was completed within the required time period, that Seabrook incorporated relevant industry operating experience where practicable, and that there was an appropriate balance of equipment reliability with unavailability when planning maintenance activities.

The inspectors selected the following five systems included in the scope of the Maintenance Rule to verify that the structures, systems, and components were properly characterized: Emergency Diesel Generators; Enclosure Air Handling; Emergency Feedwater; Service Air; and Post Accident Monitoring.

The inspectors reviewed these systems to ensure that goals and performance criteria were appropriate and that performance was being effectively monitored in accordance with Seabrook's Maintenance Rule procedures, especially when (a)(1) classification was appropriate. Four of the systems were in (a)(1) status at some point during the assessment period, and the inspectors reviewed the corrective action plans for these systems to verify their timeliness and adequacy.

The inspectors also reviewed corrective action documents for malfunctions and failures of these systems to determine if they had been correctly categorized as functional failures and if those functional failures had been categorized as maintenance preventable when appropriate.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed the scheduling and control for one planned maintenance activity and four emergent work troubleshooting activities in order to verify that Seabrook had properly evaluated the effect of the activity 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 compensatory measures against Seabrook procedures, Maintenance Manual 4.14, "Troubleshooting," and Work Management Manual 10.1, "On-Line Maintenance." Specific risk assessments were conducted using Seabrook's "Safety Monitor." The inspectors reviewed the following items:

- During the period of April 8 through April 20, 2005, the inspectors reviewed the troubleshooting efforts, maintenance assessment, and activities following the discovery of galling on the valve stem of RH-V-26. The inspectors reviewed work orders (WO) 0336026, 0403061, and 0511998. The inspectors interviewed the engineers and observed the maintenance work.

- On April 24 and 25, 2005, the inspectors reviewed the troubleshooting plan following a voltage excursion on the "B" EDG during a maintenance run following maintenance activities on the engine. The inspectors reviewed the engineering evaluation EE-05-021 and WO 0513885. The inspectors also interviewed the system engineer and maintenance technicians.

- On May 5, 2005, the inspectors reviewed the maintenance assessment for performing a forged branch connection (WFI Pipet or equal), weld neck flange, and blind flange repair of a through-wall leak of SW piping. The inspectors reviewed the work activities (WO 0511095), CR 05-03939, the degraded condition, and minor modification (05MMOD505). The degraded condition and the work documents were evaluated against the ASME Code, Section III, and Seabrook’s procedures.

- On May 19, 2005, the inspectors reviewed the plant risk configuration during maintenance on the ‘A’ component cooling water pump and ‘C’ condensate pump, surveillance testing on the undervoltage relays for the ‘B’ reactor coolant pump, and a switchyard outage for one of the three offsite power lines. The inspectors reviewed the sequence of the activities and controls established to reduce risk.

- On June 24, 2005, the inspectors reviewed the troubleshooting plan associated with identification of fuel oil in the EDG rocker arm lube oil tank. The inspectors

observed the maintenance activities, interviewed system engineers, and examined CR 05-07548.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance Related to Non-Routine Plant Evolutions and Events (71111.14 - Two Samples)

a. Inspection Scope

Residual Heat Removal System Fill and Vent
The inspectors reviewed Seabrook engineering and operations personnel performance during a non-routine fill and vent operation to restore the operability of the "A" RHR system.

A portion of the "A" RHR system had been drained for maintenance work. The tagout boundary for this work was subsequently expanded to allow emergent repair work on a "B" RHR valve. The inspectors reviewed both "A" and "B" tag clearances and discussed the method of restoration for the affected "A" RHR system with operations and engineering personnel. The appropriate P&ID drawings for the RHR and SI systems were examined to identify the affected boundary valves and establish the location of vent valves and the piping that would remain drained after system restoration. The inspectors evaluated the method to fill the RHR piping, conduct a static vent, and complete a dynamic vent against Seabrook procedure OS1013.03, "Residual Heat Removal Train A Startup & Operation." The inspectors reviewed Engineering Evaluation SS-EV-980002, Revision 1 and OX1456.02, "ECCS Monthly System Verification" as part of the verification of an adequate fill and vent. Through examination of the "A" RHR system lineup and interviews with the cognizant shift operations personnel, the inspectors confirmed that the affected flow path had been functionally restored for shutdown cooling.

Changing from three Condensate Pump Operation to two Condensate Pump Operation
On May 12, 2005, the inspectors observed the changing from three condensate pump operation to two condensate pump operation. This was the first time this operational change had been performed since Seabrook had attained 100 percent power after receiving a 5.2 percent power uprate. The inspectors reviewed procedure ON1034.03, "Condensate System Operation," Revision 6. The inspectors interviewed the control room operators prior to pump shutdown and reviewed system response following pump shutdown.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15 - Five Samples)

a. Inspection Scope

The inspectors reviewed operability evaluations and/or condition reports (CRs) in order to verify that the identified conditions did not adversely affect safety system operability or plant safety. The evaluations were reviewed using criteria specified in Generic Letter 91-18, "Resolution of Degraded and Nonconforming Conditions" and Inspection Manual Part 9900, "Operable/Operability - Ensuring the Function Capability of a System or Component." In addition, where a component was determined to be inoperable, the inspectors verified the Technical Specification (TS) limiting condition for operation implications were properly addressed. The inspectors performed field walkdowns, interviewed personnel, and reviewed the following items:

- CR 05-04260, which evaluated degraded or non-conforming conditions associated with the Service Water system and the installation of its annubar flow measurement devices.

- CR 04-04016, which evaluated the long-term corrective actions taken for mechanical binding issues on a turbine driven emergency feedwater pump coupling and the potential impact on operability.

- CR 05-04230, which evaluated debris found in the emergency diesel generator storage tank. The inspectors examined the immediate corrective actions and reviewed the extent of condition evaluation.

- CR 05-05540, which evaluated the voltage excursion on the "B" EDG during a maintenance run on April 24, 2005. The inspectors reviewed the CR, WO 0513885, and engineering evaluation EE-05-021. The inspectors also interviewed the engineering personnel involved.

- CR 05-08201, which evaluated the reactor coolant delta temperature sensor time response testing results. The inspectors reviewed the 10 CFR 50.59 evaluation on revisions to the testing acceptance criteria, portions of DCR 02-007 “Elimination of Periodic Response Time Testing,” and Nuclear Safety Advisory Letter 98-011 “Acceptance Criteria for Response Time Testing.”

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17 - Two Samples)

a. Inspection Scope

Emergency Diesel Generator Governor Modification
The inspectors reviewed the design change DCR 01-005, "Emergency Diesel Generator Governor Replacement," to include the revisions incorporated up to and including design change notice DCN #14. Work on the "B" EDG to implement this modification was in progress and available for field inspection during the current refueling outage. The newly installed "B" EDG governor, which provides the capability for slow EDG starts for maintenance and surveillance testing applications, was inspected, as were the modifications to the local control panel, 1-DG-CP-76A, and the normal start switch circuitry on the main control board. Operational considerations, including provisions for the conduct of slave relay testing to meet TS requirements, were discussed with the cognizant design engineer. The inspectors confirmed that this modification retained the safety-related capability to fast start the EDG within design parameters at any time during receipt of an emergency start signal and that this function would be tested.

The inspectors evaluated the instrumentation and controls added with the implementation of this design change and reviewed the existing design specification provisions for quality installation and qualification requirements. The new speed position controls and alarm functions were checked for features conforming to the details in the DCR, along with the UFSAR commitments and relevant licensee engineering documents and databases. During this review the 10 CFR 50.59 safety evaluation, the UFSAR change request, and the relevant TS surveillance requirements were also examined for consistency with the design change description. Additionally, the post-modification test plans were reviewed and the conduct of specific testing activities (see Section 1R19) was witnessed to confirm acceptable "B" EDG performance with the newly installed governor and slow-start circuitry controls.

Supplemental Emergency Power System
The inspectors reviewed design change, DCR 03-002, "Supplemental Emergency Power System." The newly installed supplemental emergency power system (SEPS) was being tested during the current refueling outage and was available for field inspection. The SEPS system will be used to supply alternating current (AC) power to an emergency bus if both EDGs fail to start and load in a loss of an offsite power event.

During this review, the inspectors reviewed the 10 CFR 50.59 safety evaluation, the UFSAR change requests, and the relevant TS Limiting Conditions for Operation (LCOs) and surveillance requirements for consistency with the design change description. The inspectors also reviewed the applicable CRs associated with the installation and testing of the new SEPS system. Operational considerations, including testing, design changes, recent failures, and operator mistakes regarding the SEPS engines were discussed with the cognizant design engineers. The inspectors confirmed that the SEPS system had the capability to start and supply AC power to an emergency bus

upon receipt of an emergency start signal and that this function would be tested periodically.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19 - Six Samples)

1. Untimely Identification of Failed Emergency Power Sequencer Card

a. Inspection Scope

On June 20, 2005, the "B" containment building spray (CBS) pump failed to start during testing due to an emergency power sequencer (EPS) card failure. The same card failed on April 23, 2005. The inspectors reviewed the maintenance history of this card and examined the following documents:

- WO 0524893, Troubleshooting June 20, 2005 failure of "B" CBS to start
- WO 0513233, Troubleshooting April 23, 2005 failure of emergency power sequencer card
- WO 0513246, Retest following card replacement on April 23, 2005
- WO 0513168, Train B Emergency Power Sequencer 18 Month Operability Test

b. Findings

Introduction. From April 24 to June 20, 2005, Seabrook did not identify that the emergency power sequencer card for the "B" containment building spray pump was in an inoperable condition such that the spray pump would not have automatically started during a high containment pressure actuation signal. This self-revealing finding was determined to be of very low safety significance (Green) and was characterized as an NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action."

Description. On June 20, 2005, the "B" CBS pump failed to start during testing. Subsequent troubleshooting identified a failed emergency power sequencer card. On April 23, 2005, the same EPS card had failed during surveillance testing. On April 24, the card was replaced and retested satisfactorily. Later on April 24, 2005, the CBS function of the card failed and went undetected until the June 20, 2005 surveillance test. The licensee determined that the apparent cause for the EPS card failure was a random premature failure of the card.

The inspectors determined that Seabrook did not promptly identify the card failure in accordance with 10 CFR 50, Appendix B, "Corrective Action." The inspectors concluded that two opportunities existed to potentially identify the failure. Late on April 24, 2005, 55 control room data logger alarms were received in a 30-second period. A review of

the data logger would have identified the failed EPS card. The inspectors noted that the data logger was within close proximity of the normal duty station for both a licensed reactor operator and senior reactor operator, and that, although not a formal operations department requirement, some operators review the data logger results as part of the normal turnover process. Also, from April 24 to June 20, 2005, indicating lights in an essential switchgear cabinet indicated the failed card. This cabinet was locked and is not routinely examined by operators. Subsequent to the June 20, 2005 failure, operators issued CR 05-08105 and instituted periodic rounds of the cabinet.

Analysis. Seabrook's untimely identification of the failed EPS card, associated with the "B" containment spray pump, was considered a performance deficiency that was reasonably within the licensee's ability to foresee and correct. 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.

The finding was more than minor because it affected the Barrier Integrity cornerstone objective to provide reasonable assurance that the containment design barrier would remain intact to protect the public and was associated with the attribute of equipment performance. The failure of the "B" containment spray pump to automatically start impacted one of two containment pressure suppression components. Using Appendix H of Manual Chapter 0609, "Containment Integrity Significance Determination Process," dated May 6, 2004, the finding was determined to be of very low safety significance (Green) since containment building spray system failure does not impact core damage probability (Type B Finding in Appendix H) or large early release frequency (Tables 4.1 and 6.1 in Appendix H).

This finding was associated with the cross-cutting area of problem identification and resolution in that the failed card was not identified for approximately 60 days despite opportunities both inside and outside the control room to have identified the deficiencies. This issue was entered into Seabrook's corrective action program as CR 05-07984.

Enforcement. 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action" requires "measures shall be established to assure that conditions adverse to quality, such as failures . . . are promptly identified."

Contrary to the above, from April 24 to June 20, 2005, the licensee did not identify that the EPS card for the "B" containment building spray pump was in an inoperable condition. This would prevent the "B" containment building spray pump from automatically starting during a high containment pressure actuation signal. The licensee did not identify this inoperable card even though there were indicating lights in the essential switchgear room cabinet and 55 control room data logger alarms. Because this finding was of very low safety significance and the licensee entered this finding into their corrective action program (CR 05-07984), this finding is being treated as an NCV

consistent with Section VI.A.1 of the Enforcement Policy **(NCV 05000443/2005005-01, Untimely Identification of Failed Emergency Power Sequencer Card).**

2. Other Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed post-maintenance testing (PMT) activities to ensure that: 1) the PMT was appropriate for the scope of the maintenance and modification work completed: 2) the acceptance criteria were clear and demonstrated operability or, in the case of a modification, the component and system functionality described in the approved design change documents; and 3) the PMT was performed in accordance with approved procedures. The following PMTs were reviewed:

- On April 20, 2005, Seabrook performed OX1426.27, "DG 1B Semiannual Operability Surveillance," Revision 0, following the 18-month overhaul of the "B" diesel engine. The inspectors observed the test and reviewed the procedure and WO 0512929.

- On April 21 and 22, 2005, the inspectors observed and reviewed the post-maintenance activities for WO 0401537 following power factor testing of the unit auxiliary transformer 2A. The inspectors also interviewed maintenance technicians and operators.

- On April 24, 2005, Seabrook performed OX1426.03, "Emergency Power Sequencer 18 Month Operability Test," Revision 7, following replacement of a failed relay driver card. The inspectors observed the surveillance and reviewed the procedure and WO 0513233.

- Seabrook performed EX1804.067, “Bravo Diesel Generator Governor Post Modification Testing,” Revision 2. The inspectors reviewed the procedure for consistency with the installation and functional test criteria delineated in design change DCR 01-0005. In particular, the acceptance criteria corresponding to the TS requirements for the “B” EDG were assessed, and various test parameters and controls (e.g., the EDG measurements and conditions establishing the test termination criteria) were checked and evaluated. On April 19, 2005, the inspectors observed the last two major testing activities which included the isochronous load addition and rejection and the full load reject test. During the conduct of this PMT, the cognizant design engineer and the lead system test engineer were interviewed regarding ongoing activities, system measurements, testing controls, and the final test results.

- On May 24, 2005, Seabrook partially performed OX1456.01, "Charging Pump A & B Quarterly Flow and Valve Stroke Test and 18 Month Remote Position Indication Verification," Revision 10 following the pump speed increaser push pin

inspection and maintenance associated with a lubricating oil leak. The inspectors observed the work and reviewed the procedure and WOs 0433730 and 0441447.

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities (71111.20 - One Sample)

a. Inspection Scope

The inspectors reviewed operational, maintenance, and scheduling activities prior to and during the ninth refueling outage to evaluate Seabrook's ability to assess and manage the outage risk. Prior to the outage, the inspectors reviewed the outage plan and the risk assessment of the schedule. During the outage, the inspectors examined the following activities: shutdown of the plant; cooldown; drain down to the reactor vessel flange; fuel handling operations; heatup; plant startup; and ascension to full power operations. The inspectors reviewed applicable procedures, observed control room activities, conducted walkdowns, and interviewed key personnel. The inspectors also conducted periodic outage reviews of the following items: clearance activities; reactor coolant system instrumentation; electrical power configuration; residual heat removal system operation; spent fuel pool cooling system operation; inventory control measures; reactivity control measures; and containment closure requirements. Specific documents reviewed during the inspection are listed in the Attachment. The inspectors evaluated the activities against Technical Specifications requirements, Seabrook's procedures, and other applicable requirements.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 - Ten Samples)

a. Inspection Scope

The inspectors observed portions of surveillance testing activities of safety-related systems to verify that the system and components were capable of performing their intended safety function, to verify operational readiness, and to ensure compliance with required Technical Specifications 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 system engineers and field operators. The test data recorded was compared to procedural and technical specification

requirements and to prior tests to identify any adverse trends. The following surveillance procedures were reviewed:

- On April 5, 2005, OX1405.13, “Safety Injection Comprehensive Pump Test,” Revision 0
- On April 5, 2005, OX1456.92, "Centrifugal Charging Comprehensive Pump Test," Revision 0
- On April 8, 2005, OX1413.07, “RH-P-8A Comprehensive Pump Test,” Revision 0
- On April 23 and 24, 2005, OX1426.21, "Diesel Generator 1B 18 Month Operability and Engineered Safeguards Pump and Valve Response Time Testing Surveillance," Revision 2
- On April 25 and 26, 2005, OX1426.20, “Diesel Generator 1A 18 Month Operability and Engineered Safeguards Pump and Valve Response Time Testing Surveillance,” Revision 3
- On May 2, 2005, ON1431.09, "Actual 105% Backup Overspeed Turbine Trip Test," Revision 4
- On May 16 and 17, 2005, IS1642.973, "FP-CP-451 and FP-CP-511 East MS and FW Pipe Chase Fire Detection Sensitivity Test," Revision 5 and IX1642.923, "FP-CP-451 and FP-CP-511 East MS and FW Pipe Chase Fire Detection Testing," Revision 5
- On May 18, 2005, OX143608, “Startup Feed Pump Quarterly Surveillance,” Revision 9
- On May 24, 2005, IS1699.330, "In Service Testing (IST) Instrumentation Calibration"
- On June 22, 2005, OX1401.02, “RCS Steady State Leak Rate Calculation,” Revision 6

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23 - One Sample)

a. Inspection Scope

The inspectors reviewed temporary alteration 05-045 and associated implementing documents to verify Seabrook’s design basis and affected system/component operability were maintained. The temporary alteration, associated with the main generator breaker protection circuitry, involved the lifting of close checking switch inputs for the closing supervision relay. The lifting of the leads prevents the backup pole discordance trip from tripping the generator breaker. The inspectors interviewed engineers and operators, completed field walkdowns, and reviewed the Maintenance Manual, MA 4.3A, “Temporary Modifications and Temporary Alterations,” Revision 16.

The inspectors verified that the temporary alteration was completed in accordance with NRC requirements and plant procedures. The procedural requirements included modifications to plant drawings and tagging of plant equipment affected by the temporary alteration. 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 outstanding temporary modifications.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness (EP)

1EP4 Emergency Action Level (EAL) and Emergency Plan (E-Plan) Changes (IP 71114.04 - One Sample)

a. Inspection Scope

During the period of April 1 through June 23, 2005, the NRC received and acknowledged the changes made to Seabrook's E-Plan in accordance with 10 CFR 50.54(q), which FPL had determined resulted in no decrease in effectiveness to the E-Plan and continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR 50. The inspectors conducted a sampling review of the E-Plan changes which could potentially result in a decrease in effectiveness. This review did not constitute an approval of the changes and, as such, the changes are subject to future NRC inspection. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 4, and the applicable requirements in 10 CFR 50.54(q) were used as reference criteria.

f. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06 - Two Samples)

1. Emergency Preparedness Drill

a. Inspection Scope

On June 8, 2005, the inspectors observed the combined function drill 05-01 to evaluate the conduct of the drill and adequacy of Seabrook's post-drill critique. The inspectors verified that event classifications and notifications were properly conducted in accordance with NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 2. The inspectors observed activities in the technical support center to ensure that priorities were appropriately identified and communicated. The inspectors also verified

that identified problems were entered into the corrective action program through observation of the critique, interviews of applicable drill participants, and review of condition reports initiated. The inspectors reviewed Seabrook's implementation of the following procedures during the drill:

- SDI0003, "Tactical Response Force, Appendix A, Operations Response to Security Event," Revision 6
- SDI0053, "Threat Assessment and Notifications," Revision 3
- SDI0061, "Response to Safeguards Contingency Events," Revision 0
- OS1215.07, "Loss of Spent Fuel Pool Cooling or Level," Revision 7

b. Findings

No findings of significance were identified.

2. Emergency Preparedness Aspects of Operator Training

a. Inspection Scope

The inspectors reviewed the operators' emergency classification and notification completed during a simulator training session on May 12, 2005 (See Section 1R11). The inspectors evaluated the results against Seabrook's Emergency Response Manual 1.1, "Classification of Emergencies," Revision 39 and NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 2.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01 - Ten Samples)

a. Inspection Scope

During the period April 4 through 8, 2005, 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 during the refueling outage. Implementation of these controls was reviewed against the criteria contained in 10 CFR 20, Seabrook Technical Specifications, and Seabrook's procedures.

The 10 outage related access control samples conducted during this period in conjunction with the 11 power operations related samples conducted in January 2005, complete the 71121.01 annual inspection requirements of 21 samples.

Plant Walkdown and RWP Reviews

During the refueling outage, the inspectors identified exposure significant work activities in the containment building, primary auxiliary building, and waste processing building. Specific work activities included reactor head removal, reactor cavity floodup, ISI, and steam generator secondary side sludge lancing/foreign object search and retrieval. The inspectors reviewed radiation survey maps and radiation work permits (RWP) associated with these activities to determine if the associated controls were acceptable.

The inspectors toured accessible radiologically controlled areas, including the residual heat removal vaults, containment building, waste handling building, and primary auxiliary building, and, with the assistance of radiation protection personnel, performed independent surveys of selected areas to confirm the accuracy of survey data and the adequacy of postings.

In evaluating the RWPs, the inspectors reviewed electronic dosimeter dose/dose rate alarm setpoints to determine if the setpoints were consistent with the survey indications and plant policy. The inspectors verified that the workers were knowledgeable of the actions to be taken when the dosimeter alarms or malfunctions for tasks being conducted under selected RWPs. Work reviewed included ISI activities (RWP 05-R-00037), regenerative heat exchanger activities (RWP 05-R-00030), snubber work (05-R-00031), insulation removal (RWP 05-R-00032), motor operated valve maintenance (RWP 05-R-00035) and scaffolding (RWP 05-R-00033).

The inspectors reviewed RWPs and associated instrumentation and engineering controls for potential airborne radioactivity areas located in containment and primary auxiliary buildings. The inspectors confirmed that no worker received an internal dose in excess of 50 mrem due to airborne radioactivity when performing outage related tasks. The inspectors reviewed the dose assessment methodology for internal exposures that were less than 50 mrem to confirm the accuracy of the results.

Problem Identification and Resolution

The inspectors reviewed elements of Seabrook's corrective action program related to controlling access to radiologically controlled areas, completed since the last inspection of this area, to determine if problems were being entered into the program for resolution. Details of this review are contained in Section 4OA2 of this report.

Jobs-In-Progress

The inspectors observed aspects of various ongoing activities to confirm that radiological controls, such as required surveys, area's postings, job coverage, and pre-job RWP briefings were conducted; personnel dosimetry was properly worn; and that workers were knowledgeable of work area radiological conditions. The inspectors

attended the pre-job RWP briefing for pressurizer in-service inspections and reviewed the briefing materials for fuel transfer and reactor vessel specimen removal.

High Risk Significant, High Dose Rate and Very High Radiation Area Controls
Keys to locked high radiation areas (LHRA) and very high radiation areas (VHRA), stored at the control point and in the control room, were inventoried and accessible LHRAs were verified to be properly secured and posted during plant tours.

The inspectors reviewed the physical and procedural controls for securing and transferring highly activated/contaminated materials stored in the spent fuel pool. Included in this review were controls to be implemented for removing and transferring a reactor vessel irradiation surveillance specimen.

The inspectors discussed with radiation protection supervision the adequacy of physical and administrative controls for performing work in potentially VHRA, including the movement of the reactor incore detectors to their storage locations and spent fuel transfers. The inspectors verified that any changes to relevant procedures did not substantially reduce the effectiveness and level of worker protection and evaluated the adequacy of prerequisite communications and authorizations.

Radiation Worker Performance
The inspectors observed radiation worker and radiation protection technician performance during reactor head removal, steam generator sludge lancing, scaffolding installation, pressurizer ISI, and fuel transfers. The inspectors determined that the individuals were aware of current radiological conditions, access controls, that the skill level was sufficient with respect to the potential radiological hazards and the work involved.

The inspectors reviewed condition reports, related to radiation worker and radiation protection errors, and personnel contamination event reports, to determine if an observable pattern traceable to a similar cause was evident.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls (71121.02 - Eight Samples)

a. Inspection Scope

During the period April 4 through 8, 2005, the inspectors conducted the following activities to verify that Seabrook was properly implementing operational, engineering, and administrative controls to maintain personnel exposure as low as is reasonably achievable (ALARA) for tasks conducted during the refueling outage. Implementation of

these controls was reviewed against the criteria contained in 10 CFR 20, applicable industry standards, and Seabrook's procedures.

Radiological Work Planning

The inspectors reviewed pertinent information regarding cumulative exposure history, current exposure trends, and ongoing activities to assess current performance and outage exposure challenges. The inspectors determined the site's 3-year rolling collective average exposure.

The inspectors reviewed the refueling outage work scheduled during the inspection period and the associated work activity dose estimates. Scheduled work reviewed included reactor disassembly, cavity floodup, fuel transfers, pressurizer in-service inspections, and scaffolding installation in containment.

The inspectors reviewed procedures associated with maintaining worker dose ALARA and with estimating and tracking work activity specific exposures. The inspectors reviewed the OR10 dose summary reports, detailing worker's estimated and actual exposures through April 7, 2005, for ongoing jobs.

The inspectors evaluated the exposure mitigation requirements specified in RWPs and ALARA Job Reviews and compared actual worker's cumulative exposure to estimated doses for tasks associated with these activities. The inspectors reviewed in detail those work activities whose actual cumulative exposure approached the estimated dose; e.g., scaffolding installation, which resulted in a subsequent Work-In-Progress ALARA Review by radiation protection management. Jobs reviewed included OR10 Fuel Handling (AR 05-07), OR10 Steam Generator Secondary Side Maintenance & Inspections (AR 05-02), OR10 Reactor Vessel CRDM Canopy Seal Leak Repair (AR 05-12), and OR10 Reactor Vessel Disassembly (OR 05-01).

The inspectors evaluated the departmental interfaces between radiation protection, engineering, operations, and maintenance crafts to identify missing ALARA program elements and interface problems. The evaluation was accomplished by interviewing the Technical Specialist-ALARA and Radiation Protection Manager, reviewing Radiation Safety Committee meeting minutes, reviewing Nuclear Oversight Daily Quality Summaries, attending daily outage turnover meetings, and attending a Work-In-Progress ALARA review meeting for installing scaffolding.

The inspectors compared the person-hour estimates provided by the maintenance planning and other work groups with actual work activity time requirements and evaluated the accuracy of these estimates. Specific jobs reviewed included scaffolding installation in containment and reactor disassembly.

The inspectors determined if work activity planning included the use of temporary shielding, system flushes, and operational considerations to further minimize doses. The inspectors examined temporary shielding installed to support steam generator

maintenance and reactor head inspections. Additionally, the inspectors reviewed the shutdown chemistry controls and efforts to minimize system source terms.

Verification of Dose Estimates and Exposure Tracking Systems

The inspectors reviewed the assumptions and basis for the annual site collective exposure estimate and the refueling outage dose projection. The inspectors reviewed whole body counting data and related calculations for internal dose assessments for selected personnel.

The inspectors reviewed Seabrook's method for adjusting exposure estimates and replanning work when emergent work was encountered. The inspectors attended a Work-In-Progress ALARA review meeting for scaffolding installation, and reviewed actions of the Radiation Safety Committee to monitor and control dose allocations.

The inspectors reviewed Seabrook's exposure tracking system to determine whether the level of detail, exposure report timeliness and dissemination was sufficient to support the control of collective exposures. Included in this review were departmental dose compilations and individual exposure records.

Job Site Inspection and ALARA Control

The inspectors observed maintenance and operational activities being performed for reactor head removal, reactor head inspections, pressurizer inspections, steam generator secondary side flushing, and scaffolding installation to verify that radiological controls, such as required surveys, job coverage, and contamination controls were implemented; personnel dosimetry was properly located; and that workers were knowledgeable of work area radiological conditions.

The inspectors reviewed the exposure of individuals in selected work groups including mechanical maintenance, radiation protection, and site support services to determine if supervisory efforts were being made to equalize doses among the workers.

Source Term Reduction and Control

The inspectors reviewed the status and historical trends for the site source term. Through review of survey maps and interviews with the Technical Specialist-ALARA, the inspectors evaluated recent source term measurements and control strategies. Specific strategies being employed by Seabrook included shutdown chemistry controls, increased letdown flow, system flushes, and temporary shielding.

Declared Pregnant Workers (DPW)

The inspectors reviewed the procedural controls to be implemented for declared pregnant workers. No DPW was currently employed to support outage activities.

Problem Identification and Resolution

The inspectors reviewed elements of Seabrook's corrective action program related to implementing radiological controls to determine if problems were being entered into the

program for resolution. Details of this review are contained in Section 4OA2 of this report.

b. Findings

No findings of significance were identified.

3. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems

1. Routine Condition Report Screening

a. Inspection Scope

As required by Inspection Procedure 71152, “Identification and Resolution of Problems,” and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the Seabrook’s corrective action program. This review was accomplished by accessing Seabrook's computerized database.

b. Findings

No findings of significance were identified.

2. Inservice Inspection Review

a. Inspection Scope

The inspectors reviewed various condition reports which identified deficiencies during nondestructive examination activities described in Section 1R08. This included the condition reports generated during the refueling outage from the NDE project group, boric acid walkdowns, secondary side steam generator work, and the containment qualified coatings project. These reviews were performed to verify that Seabrook was identifying problems at an appropriate threshold, entering them into the corrective action program and taking appropriate corrective actions.

b. Findings

No findings of significance were identified.

3. ALARA Planning and Controls

a. Inspection Scope

The inspectors reviewed thirteen Condition Reports, and associated apparent cause investigative reports, and recent Nuclear Oversight Daily Summary Reports to evaluate the threshold for identifying, evaluating, and resolving problems in implementing the ALARA program. This 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.

4. Problem Identification and Resolution Trend Review

a. Inspection Scope

The inspectors reviewed Seabrook's corrective action program to identify trends that may indicate existence of more safety significant issues. The inspectors reviewed the corrective action database through the review of individual components to identify equipment degradation trends. Additionally, the inspectors reviewed Seabrook's programs for identifying trends through their performance improvement groups, the individual departments, and the condition report oversight group.

b. Findings

No findings of significance were identified.

5. Annual Sample Review (71152 - One Sample) - Three Root Cause Evaluations

a. Inspection Scope

The inspectors reviewed three root cause analyses (CRs 05-00724, 05-02108, 04-09849) to ensure the evaluations were conducted in accordance with Seabrook procedure, OE 4.5, "Root Cause Analysis," Revision 13, and 10 CFR 50 Appendix B, Criterion XVI, "Corrective Action." The condition reports were associated with loss of kilowatt indication during an emergency diesel maintenance test, emergency bus failure to transfer from the unit auxiliary transformer to the reserve auxiliary transformer, and undetected failures on a control room pressurizer level recorder. The inspectors reviewed the root cause evaluations and interviewed the root cause team leaders to assess the depth of the evaluation, the qualifications and quality of the root cause teams, and the independence of the team.

b. Findings and Observations

No findings of significance were identified. The root cause evaluations were found to be thorough and adequate.

6. Annual Sample Review (71152 - One Sample) - Emergency Diesel Generator High Voltage Condition

a. Inspection Scope

On April 24, 2005, during surveillance testing, the "B" EDG output voltage increased above its normal 4160 V to an estimated 6000 V. Operators completed an emergency shutdown of the EDG. The inspectors observed troubleshooting activities, reviewed CR 05-05540, examined the apparent cause and corrective actions, and interviewed system engineers. The inspectors evaluated Seabrook's apparent cause and corrective actions against Seabrook's procedures and 10 CFR 50, Appendix B, "Corrective Action." The high voltage condition existed with no loads on the EDG and its impact was evaluated in Section 1R15.

b. Findings and Observations

No findings of significance were identified. Seabrook determined the apparent cause of the high voltage condition was a malfunction of the "B" rectifier chassis. The condition was intermittent and did not repeat during troubleshooting. Seabrook conducted systematic troubleshooting to evaluate all possible causes of the failure. Seabrook determined the apparent cause based on previous site operating experience and discussions with the vendor. However, Seabrook also identified that a possible contributor to the event was an intermittent failure of the gate firing circuit board. Seabrook's immediate corrective actions included testing of all components, switching to the "A" rectifier chassis, and establishing a contingency work order for a replacement gate firing circuit board. The longer term corrective actions include replacement of the "B" rectifier chassis and further investigative testing of this rectifier to determine the degradation mechanism and potential improvements to the EDG preventive maintenance procedures.

The inspectors concluded that appropriate actions were taken to address the most probable cause of the EDG high voltage failure; therefore, no violation of NRC requirements was identified. However, the inspectors identified several weaknesses in addressing the second highest probable cause; the gate firing circuit board. Seabrook did not take actions to fully evaluate the risk of the potentially degraded gate firing circuit board. Seabrook did not take immediate actions to further evaluate the "B" rectifier chassis and positively confirm the rectifier was the cause. Potential actions could have included thermography during troubleshooting and/or immediate removal and timely investigative testing of the "B" rectifier chassis. Seabrook also could have evaluated the adequacy of the contingency action to replace the card by conducting an engineering

evaluation of the impact of an intermittent failure of the gate firing circuit board during an event with the emergency loads on the EDG. This would have potentially given assurance that emergency equipment motors would not be damaged, and the contingency action to replace the board could have been implemented or other compensatory measures established.

7. Annual Sample Review (71152 - One Sample) - Radiation Monitoring System

a. Inspection Scope

The inspectors reviewed Condition Report 04-11293 and supporting documentation. This condition report was generated to address developing a consolidated plan for managing radiation monitoring instrumentation problems. To evaluate Seabrook's response to the CR, the inspectors interviewed the engineering supervisor, radiation monitoring system engineer, a health physics supervisor, and an Operations Department shift manager. The inspectors reviewed the radiation monitoring improvement plan developed by the system engineer to determine if issues were systematically analyzed by categorizing, quantifying, and prioritizing relevant condition reports and a strategy was developed for improving the overall health of the radiation monitoring system. The inspectors walked down selected instrumentation to verify equipment operability and assess instrument material condition. Instrumentation selected included RM-RM-6454, 6486, 6505, 6508, 6510, 6511, 6512, 6512, 6519, 6526, and 6528.

b. Findings and Observations

No findings of significance were identified. The inspectors determined that individual radiation monitoring instrumentation problems have been identified in a timely manner at a conservative threshold, the causes of component failures and spurious alarms have been appropriately evaluated, and the corrective actions have been implemented commensurate with the safety significance of the system. Plant radiological conditions and release pathways were being properly monitored through the use of in-place instrumentation and sampling programs. A well defined strategy has been developed to correct repetitive component failures and spurious alarms. This strategy included upgrading components of selected monitors, replacement of selected portable continuous airborne monitors, and abandonment of unnecessary monitors/channels.

4OA3 Event FollowUp (71153 - One Sample)

High Vibration Turbine Trip and Reactor Trip

a. Inspection Scope

On May 1, 2005, operators manually tripped the reactor following an automatic turbine trip on high vibrations. The turbine tripped following extensive maintenance during the

outage including replacement of the high pressure turbine. The inspectors observed operator response to the high vibrations, reviewed post trip evaluations, and examined corrective actions to address the turbine vibrations. The inspectors verified that actions were taken in accordance with Seabrook's procedures. The following documents were reviewed:

- ON1231.01, "Turbine Generator High Vibration," Revision 9
- ON1031.02, "Stating and Phasing the Turbine Generator," Revision 5
- ON03-01-06, "Post Maintenance Turbine Startup," Revision 0
- OS1000.08, "Post Trip Review," Revision 6

b. Findings

No findings of significance were identified.

4OA4 Cross Cutting Aspects of Findings

Cross-Reference to Problem Identification and Resolution Findings Documented Elsewhere

Section 1R19.1 describes a finding where the licensee did not identify that the emergency power sequencer card for the "B" containment building spray pump was in an inoperable condition such that the spray pump would not have automatically started during a high containment pressure actuation signal. This finding was associated with the cross-cutting area of problem identification and resolution in that the failed card was not identified for approximately 60 days despite opportunities both inside and outside the control room to have identified the deficiencies.

4OA5 Other Activities

1. Temporary Instruction 2515/160, Pressurizer Penetration Nozzles and Steam Space Piping Connections in U.S. Pressurized Water Reactors (TI-2515/160 - One sample)

a. Inspection Scope

The inspectors reviewed Seabrook's response to NRC Bulletin 2004-01, which describes inspection of Alloy 82/182/600 materials used in fabrication of pressurizer penetrations and steam space piping connections at pressurized-water reactors. The inspectors reviewed Seabrook station's inservice inspection activities for examination of pressurizer penetrations and steam space piping connections made from Alloy 82/182/600 materials to determine if the inspection of these components was implemented in accordance with Seabrook's response to NRC Bulletin 2004-01.

The inspectors interviewed examination personnel and reviewed training and qualification records to verify examination personnel were knowledgeable to perform the

examination and disposition and resolve deficiencies identified. The inspectors evaluated the general implementation and effectiveness of the inspection of pressurizer penetrations and steam space piping connections made from Alloy 82/182/600 materials by direct field observation of as-found conditions at five pressurizer penetration nozzles. The inspectors verified that the examination instruction used for the inspection provided adequate guidance for the examination and documentation of the inspection including evaluation and disposition of discrepancies identified during the bare metal visual (VT-2) examination. The specific inspection requirements of TI 2515/160 are documented in Attachment 2.

b. Findings

No findings of significance were identified.

2. TI 2515/163, Operational Readiness of Offsite Power

Cornerstones: Initiating Events, Mitigating Systems

The inspectors performed Temporary Instruction 2515/163, *Operational Readiness of Offsite Power*. The inspectors collected and reviewed licensee procedures and supporting information pertaining to the offsite power system specifically relating to the areas of offsite power operability, the maintenance rule (10 CFR 50.65), and the station blackout rule (10 CFR 50.63). The inspectors reviewed this data against the requirements of 10 CFR 50.63; 10 CFR 50.65; 10 CFR 50 Appendix A General Design Criterion 17, *Electric Power Systems*; and Plant Technical Specifications. This information was forwarded to NRR for further review.

3. TI 2515/161 - Transportation of Reactor Control Rod Drives in Type A Packages

a. Inspection Scope

This area was inspected to verify that Seabrook's radioactive material transportation program complies with specific requirements of 10 CFR 20, 71, and Department of Transportation regulations contained in 49 CFR 173. The inspectors interviewed licensee personnel and determined that Seabrook had undergone refueling/defueling activities between January 1, 2002, and present, but had not packaged and shipped irradiated control rod drives in Department of Transportation Specification 7A Type A packages.

b. Findings and Observations

No findings of significance were identified.

4OA6 Meetings, including Exit

Quarterly Exit Meeting Summary

The inspectors presented the inspection results to Mr. G. St. Pierre on July 14, 2005, 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.

Biennial Heat Sink Performance Exit Meeting Summary

The inspector presented the inspection results to Mr. Paul Freeman and members of Florida Power and Light Seabrook Station staff at the conclusion of the inspection. The licensee acknowledged the conclusions and observations presented.

Congressional Visit

On June 4, 2005, Congressman Marty Meehan of Massachusetts toured the site and met with Mr. Mark Warner and other members of licensee management. Congressman Meehan also met with Mr. A. Randolph Blough, Director, Division of Reactor Safety, and other members of NRC staff.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

P. Allen, Senior Health Physics Technician
J. Ball, Maintenance Rule Coordinator
D. Beaton, Senior Health Physics Technician
R. Belanger, Design Engineer
W. Bladow, Security Manager
E. Carley, Senior Regulatory Compliance Engineer
W. Cash, Health Physics Manager
P. Dundin, Operations Shift Manager
P. Freeman, Engineering Director
R. Guthrie, System Engineer, Radiation Monitoring System
D. Hampton, Health Physics Supervisor
F. Haniffy, RadWaste - Technical Specialist
M. Kiley, Station Director
N. Levesque, Engineering Supervisor, Instrumentation & Control/ Electrical Engineering
R. Lieder, Engineering Supervisor
M. Makowicz, Plant Engineering Manager
B. McAllister, System Engineering
R. McCormack, SW System Engineer
W. Moore, System Engineering
M. O'Keefe, Regulatory Compliance Supervisor
N. O'Neil, Nuclear Services Technician
T. Pepin, Health Physics Supervisor
J. Peschel, Regulatory Programs Manager
D. Ritter, Operations Manager
D. Robinson, Chemistry Manager
G. Sessler, PCCW System Engineer
D. Sherwin, Maintenance Manager
T. Smith, Senior Nuclear Analyst
G. St. Pierre, Site Vice President
R. Sterritt, Rad Technical Specialist - ALARA
M. Sullivan, Senior Health Physics Technician
K. Whitney, NDE Project Lead

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000443/2002005-05-01	NCV	Untimely Identification of Failed Emergency Power Sequencer Card. (Section 1R19.1)

LIST OF DOCUMENTS REVIEWED

Section 1R04: Equipment Alignment

Procedures
OS1014.01, Spent Fuel Cleanup and Cooling System Fill and Vent, Revision 06
OS1014.02, Operation of Spent Fuel Pool Cooling and Purification System, Revision 07
OS1046.06, 4.16 KV Operation, Revision 06
OS1046.03, Reserve Aux Transformer Auxiliaries Operation, Revision 06
LN0561.04, Unit Auxiliary Transformer Preventive Maintenance, Revision 00
OS1213.01, Loss of RHR during Shutdown Cooling, Revision 11
OX1446.01, AC Power Source Weekly Operability Surveillance, Revision 08
OS1016.05, Service Water Cooling Tower Operation, Revision 08

Clearances
Tag list, Clearance Refuel 10, MT024-01, 03/28/2005
Tag list, Clearance Refuel 10, MT008E-01, 04/20/2005
Tag list, Clearance Refuel 10, MT020-01 (SW Ocean Outage)

Work Orders
0401537, 0401536

Condition Reports
CRs 05-00552, 04-07174, 05-01543, 05-00100, 04-12720, 04-11569

Drawings
Piping and instrumentation drawings (P&IDs) for the Spent Fuel Cooling and Clean-up System
Unit Aux Transformer 1-X-2B Auxiliaries Cable Schematic
1-NHY-310177-SH CA9b
1-NHY-310177-SH CA0a
1-NHY-310177-SH CA0b
1-NHY-310177-SH CA1a
1-NHY-310177-SH CA1b
1-NHY-310177-SH CA1
Miscellaneous Air Handling PAB & RHR Vaults Details - 1-MAH-B20496

Miscellaneous
Spent Fuel Pool Cooling and Purification System Health Report, 2004-4
Residual Heat Removal System Health Report, 2004-4

Section 1R07: Heat Sink Performance

Procedures and other Documents
PID 1-SW-B20795, Service Water System Nuclear Detail
PID 1-SW-B20794, Service Water System Nuclear Detail
PID 1-SW-B20792, Service Water System Nuclear Detail
PID 1-CL-B20682, Chlorination System Detail
PID 1-CC-B20204, Primary Component Cooling Loop A, Overview
PID 1-CC-B20205, Primary Component Cooling Loop A, Detail
PID 1-CC-B20206, Primary Component Cooling Loop A, Detail
PID 1-CC-B20207, Primary Component Cooling Loop A, Detail
PID 1-CC-B20208, Primary Component Cooling Loop A, Detail
UFSAR Revision 8, Section 9.2, Water System
CP 4.2, Revision 13, Chlorine Management Program
MDL 514 Sinlex Strainer Instruction Manual (IMS # 05.01.04)
EDG Jacket Water Cooler (DWG #111908206)
DCR 96-016 PCCW Heat Exchanger Replacement
RN0742, Secondary Plant Thermal Performance Monitoring, Revision 2
ES1850.017, Revision 00, Change 1, SW Heat Exchanger Program
PM 1-CC-E-17-B-M1-000, Tube Sheet Inspection
PM 1-DG-E-42-A-TPM-000, Thermal Performance Monitoring of the DG Cooling Water Heat Exchanger
PM 1-CC-E-17-A-M1-000, Tube Sheet Inspection
PM 1-CC-E-17-A-M2-000, Perform Eddy Current Testing of Train “A” PCCW Heat Exchanger
PM 1-CC-E-17-BOLT-INSP-000, Component Cooling Water Heat Exchanger Channel Head Bolt Examination
C-S-1-86091, Revision 2, Containment Pressure Following A LOCA with Reduced Flow in PCCW Heat Exchanger
C-S-1-83704, Revision 3, Hydraulic Modeling of PCCW Flow Distribution
4.3.08.72F, Revision 6, SW System Steady State Analysis
OS1012.01, Revision 7, Chapter 23, PCCW Fill and Vent.
OS1412.01, Revision 9, Chapter 8, PCCW Train A Quarterly Operability, 18 Month Position Indication and Comprehensive Pump Testing
OS1016.05, Revision 8, Chapter 4, Service Water Cooling Tower Operation
OS1012.03, Revision 13, Chapter 7, Primary Component Cooling Water Loop A Operation
OS1012.04, Revision 11, Primary Component Cooling Water Loop B Operation
OS1016.01, Revision 9, Chapter 17, Service Water System Fill and Vent
OS1016.03, Revision 8, Chapter 5, Service Water Train A Operation
OS1016.04, Revision 8, Service Water Train B Operation
NYN-90138 letter dated July 13, 1990, Response to GL 90-04
NYN-90176 dated Sept. 24, 1990, Supplemental Response to GL 89-13
NYN-91169 letter dated Oct. 18, 1991, Supplemental Response to GL 89-13 and 90-04

NYN letter 91180 dated Nov. 4, 1991, Notification of Completion of First Refueling Outage Comments
50.59 Review for USFAR Change Request 97-042 dated Sept. 4, 1997
G04.05.99, PCCW Heat Exchanger Instruction Manual
1M1120606086, EDG System Operations and Maintenance Manual, Volume 3
CR 02-09102, PCCW Tube Sheet Inspection CC-E-17B
CR 00-12740

Section 1R08: Inservice Inspection

NDE Examination Reports and Work Packages
NDE Data package 05-01-045, Work Request # 0404364
NDE Data package 05-01-047, Work Request # 0404364
NDE Data package 05-01-046, Work Request # 0404364
NDE Data package 05-01-048, Work Request # 0404364
NDE Data package 05-01-002, Work Request # 0404365
NDE Data package 05-01-004, Work Request # 0404364
NDE Data package 05-01-005, Work Request # 0404364
NDE Data package 05-01-006, Work Request # 0404364

WO 0404828, 'A' Steam Generator
WO 0404826, 'B' Steam Generator
WO 0404827, 'C' Steam Generator
WO 0404825, 'D' Steam Generator
WO 0413237, Conduct of Alloy 600 Bare Metal Visual Examinations
WO 0404344, Leakage Reduction Program Surveillance
Project No. 101171, CRDM Lower Canopy Seal Weld Overlay
WO 0413237, VT-2 Visual Examination Form: RC-74-1; RC-80-1
WO 0413237, Liquid Penetrant Examination Form: RC-74-1; RC-80-1

Procedures
ES03-01-21, PDI Generic Procedure fo the Ultrasonic Examination of Ferritic Pipe Welds
ES03-01-30, Ultrasonic Examination Technique for Detection of Cracking in FW Piping
ES03-01-34, Manual Ultrasonci Procedure for the Examination of Pressure Vessel Welds Including Non-PDI Reactor vessels and Heads
ES03-01-35, Manual Ultrasonic Procedure for Non-PDI Examination of Nozzle Inner Corner Radius Areas in Accordance with ASME Section XI, Revision 0
EX1801.002, Leakage Reduction Program Surveillance, Revision 09
EX1801.006, Containment Leakage Reduction Program Surveillance, Revision 07
ES1807.002, Liquid Penetrant Examination - Solvent Removable, Revision 05
ES1807.025, Inservice Inspection (ISI) Procedure, Revision 04
SM 7.11, Primary to Secondary Leak Monitoring, Revision 01
MA 10.3, Boric Acid Corrosion Control Program
CS0905.08, Response to a Primary-To-Secondary Leak, Revision 03

Condition Reports
CR 05-03247, CR 05-04330, CR 05-03378, CR 05-04373, CR 05-04215, CR 05-04115

Other Documents and Records
Outage NDE Project Team Training Certification Records
Letter to NRC, dated 30 March 1998, from Ted C. Feigenbaum, Executive VP and CNO, Seabrook Station 90 day Response to Generic Letter 97-06
ASME Code Case –616, Alternative Requirements for VT-2 Visual Examination of Class 1, 2 and 3 Insulated Pressure Retaining Bolted Connections
Condenser Air Removal Gas Argon 41 and Xenon 133 Activity Trends
Seabrook Station Response to NRC Bulletin 2004-01, July 27, 2004, and January 18, 2005

Section 1R12: Maintenance Effectiveness

Procedures and Assessments
Periodic Assessment of Maintenance Rule Program - Seabrook Station - April 2003 through September 2004
EE-03-009, Unavailability Criteria for Risk Significant Maintenance Rule Functions, 05/03
PEG-04, Building/Structures Surveillance Inspections, Revision 06
PEG-24, Maintenance Rule Goal Setting and Monitoring, Revision 04
PEG-25, Maintenance Rule Periodic Assessment, Revision 05
PEG-40, Maintenance Rule Program Scoping Changes and Program Interfaces
PEG-45, Maintenance Rule Program Monitoring Activities, Revision 03
PEG-49, Maintenance Rule Advisory Committee, Revision 01
SA-04-0036, March 2004 Maintenance Rule Self-Assessment
SM 7.10, Maintenance Rule Program, Revision 01
SS-EV-03-006, Basis for the Reliability Performance Criteria for Risk Significant Functions in Support of the Maintenance Rule, 05/03
SS-EV-03-008, Risk Ranking of Maintenance Rule Functions from the SSPSS-2002, 05/03

System Health Reports
Service Air 1Q2005
Emergency Feedwater 1Q2005, 1Q2004, 2Q2004, 3Q2004, 4Q2004
Post Accident Monitoring 1Q2005
Diesel Generator System 1Q2005, 1Q2004, 2Q2004, 3Q2004, 4Q2004
Enclosure Air Handling System 1Q2005, 1Q2004, 2Q2004, 3Q2004, 4Q2004
Maintenance Rule Program Health Report 1Q2005

Maintenance Rule (a)(1) improvement plans
Service Air Compressor SA-SKD-137A/B
DG-01, Emergency Diesel Generators
Post Accident Monitoring (PAM) Instruments

Condition Reports
CR 04-02891, CR 03-06469, CR 04-04261, CR 04-05848, CR 04-06092, CR 04-05315, CR 04-05330, CR 04-00596, CR 04-04780, CR 05-03623, CR 04-04540, CR 05-05108, CR 05-05003, CR 04-05098, CR 03-09676, CR 03-09423

Work Order
0421224

Maintenance Rule Expert Panel Meeting Minutes
December 2004
January 2005
February 2005
March 2005
Special Meeting on Emergency Lighting, 3/25/2005
Special Meeting on Diesel Generators, 6/2/2005

Section 1R20: Refueling and Outage Activities

Procedures
OS1000.03, Plant Shutdown from Minimum Load to Hot Standby, Revision 5
ON1031.03, Turbine Generator Shutdown, Revision 5
OS1000.06, Power Decrease, Revision 5
ON1035.10, Main Feed Pump Standby and Startup Operation, Revision 7
OS1000.02, Plant Startup from Hot Standby to Minimum Load, Revision 7
ON1031.02, Starting and Phasing the turbine Generator, Revision 5
MA 10.1, Station Leakage Programs, Revision 2
MA 10.3, Boric Acid Corrosion Control Program, Revision 0
EX1801.006, Containment Leakage Reduction Program Surveillance, Revision 7

Section 2OS1: Access Controls to Radiologically Significant Areas

Procedures
HD0958.25, High Radiation Area Controls, Revision 26
HD0958.27, Dose Assessment for Personnel Contamination, Revision 22
HD0958.49, Response Protocols for Whole Body Counting and Personnel Contamination Monitoring
HD0961.29, Internal Dosimetry Assessment, Revision 23
HD0961.31, Canberra Whole Body Counting System Operation, Revision 02
HD0961.34, Canberra FASTSCAN Whole Body Counting System Operation
RP 2.1, General Radiation Worker Instruction and Responsibilities, Revision 17
RP 9.1, RCA Access/Egress Requirements, Revision 19
RP 15.1, Job Pre-Planning and Review for Radiation Exposure Control, Revision 17
RP 15.2, ALARA Recommendations, Revision 09
RP 15.4, Use and Control of Temporary Shielding, Revision 10

RP 15.5, Exposure Control, Revision 03
RS0721, Refueling Administrative Control, Revision 04
MS0504.31, Irradiation Specimen Removal from the Reactor Vessel, Revision 03

Radiation Safety Committee Meeting Minutes
Meeting No. 04-04, 12/28/2004
Meeting No. 05-01, 02/02/2005
Meeting No. 05-02, 03/24/2005

Section 2OS2: ALARA Planning and Controls

ALARA Reviews
AR 05-01, OR10 Reactor Vessel Disassembly & Reassembly, Revision 0
AR 05-02, OR10 Steam Generator Secondary Side Maintenance, Revision 0
AR 05-07, OR10 Fuel Handling, Revision 0
AR 05-05, OR10 MOV Testing/Preventative Maintenance & Repair, Revision 0
AR 05-12, OR10 Reactor Vessel CRDM Canopy Seal Leak Repair, Revision 1

Section 4OA2: Identification and Resolution of Problems

Procedures
OS1252.01, Process or Effluent High Radiation, Revision 13
OS1252.02, Airborne High Radiation, Revision 11
OS 1252.03, Area High Radiation, Revision 10
OE 3.6, Condition Reports, Revision 5
WM 8.4, Work Order Process, Revision 2

Condition Reports - Radiation Monitoring System
05-07567, 05-07327, 05-07246, 05-06899, 05-06799, 05-06698, 05-06504, 05-06491, 05-06408, 05-06271, 05-06266, 05-05826, 05-04093, 05-03177, 05-02690, 04-11293, 04-12665, 05-03719, 05-03675, 05-03663, 05-03167, 05-02520, 05-01782, 05-02236, 05-02147, 05-03463, 05-02806, 05-01816, 05-04234, 04-11217

Nuclear Oversight Quality Summary Reports
June 2003 through June 2005

Nuclear Assurance Quality Reports
Seabrook Daily Quality Summary Reports dated February through April 7, 2005

LIST OF ACRONYMS

AC	Alternating Current
ADAMS	Agencywide Documents Access and Management System
ASME	American Society of Mechanical Engineers
ALARA	As Low As Reasonably Achievable

CBS	Containment Building Spray
CFR	Code of Federal Regulations
CR	Condition Report
CRDM	Control Rod Drive Mechanism
DCR	Design Change Request
DPW	Declared Pregnant Workers
E-Plan	Emergency Plan
EAL	Emergency Action Level
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
EPRI	Electric Power Research Institute
EPS	Emergency Power Sequencer
FPL	Florida Power & Light
GL	Generic Letter
IMC	Inspection Manual Chapter
ISI	In-service Inspection
IST	In-service Testing
LCO	Limiting Condition for Operation
LHRA	Locked High Radiation Area
LOCA	Loss of Coolant Accident
MR	Maintenance Rule
NCV	Non-Cited Violation
NDE	Non-Destructive Examination
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records
PCCW	Primary Component Cooling Water
PI&D	Piping & Instrumentation Drawings
PMT	Post Maintenance Testing
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RWP	Radiation Work Permits
SCCW	Secondary Component Cooling Water
SDP	Significance Determination Process
SEPS	Supplemental Emergency Power System
SI	Safety Injection
SW	Service Water
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
UT	Ultrasonic Testing
VHRA	Very High Radiation Area
WO	Work Order

ATTACHMENT 2

Temporary Instruction 2515/160, Pressurizer Penetration Nozzles and Steam Space Piping Connections in U.S. Pressurized Water Reactors (TI-2515/160 - One sample)

Conformance with Licensee Response to NRC Bulletin 2004-01

The inspections conducted at Seabrook station by qualified contractor NDE technicians were consistent with Seabrook station response dated July 27, 2004, and supplemental response dated January 18, 2005.

Reporting Requirements

1. The examination was performed by qualified and knowledgeable personnel with certification to the American Society of Mechanical Engineers (ASME), Section XI, Level II (VT-1, 2, and 3) for visual examiners. The qualification records of the individual performing the bare metal VT-2 examinations were reviewed to ascertain whether the qualification records properly reflected the examiner's name, certification, activity qualified to perform, effective period of certification, basis used for certification, annual examination of visual acuity and color vision and periodic re-certification.

a.2. The examination was performed using adequate work instructions. The instructions were specific to the extent of the inspections required, provided documentation requirements, and provided inspection standards and acceptance criteria for the direct bare metal visual examinations (VT-2).

a.3. The examination was adequate to identify, disposition, and resolve deficiencies.

a.4. The examination performed was capable of identifying leakage in the pressurizer penetration nozzles and steam space piping components described in NRC Bulletin 2004-01.

b. The pressurizer penetration nozzles and steam space piping components were free of dirt, debris, insulation, and any foreign material that could adversely affect the examinations. No boric acid deposits from any source were identified during the examinations.

c. The inspection was conducted by direct bare metal visual examinations (VT-2) by contractor NDE personnel.

d. The inspection effort achieved 360 degree examination coverage around the circumference of all nozzles.

e. If present, small boric acid deposits as described in Bulletin 2004-01, could be identified and characterized in the penetration nozzle or steam space piping components.

f. No material deficiencies were identified that required repair. However, two pressurizer steam space safety nozzles, RC-74-1 and RC-80-1, required further evaluation to confirm what appeared to be a small, intermittent amount of white penetrant developer left around the toe of these safe-end nozzle welds. In addition, safety nozzle RC-80-1 appeared by visual examination to have a 1/4 inch surface indication, just above and adjacent to the toe of the weld. In accordance with the work instruction, a corrective action report was issued and liquid dye penetrant examinations were performed on those nozzles and resulted in no indications present.

g. No impediments to effective examinations were encountered.

h. Liquid dye penetrant examinations were performed in accordance with the Seabrook station procedures to evaluate any visual examination abnormality. Seabrook used their corrective action process and work instruction to disposition any abnormal condition found. Both liquid dye penetrant examinations resulted in no indications.

i. There was no indication of boric acid leaks from pressure-retaining components in the pressurizer system. Seabrook did perform follow-on liquid dye penetrant examinations for the white residue found on two pressurizer nozzle penetrations as described above.