

October 26, 2006

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 05000443/2006004

Dear Mr. St. Pierre:

On September 30, 2006, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at the Seabrook Nuclear Power Station. The enclosed report documents the inspection findings which were discussed on October 11, 2006, with you 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 the very low safety significance and because it is entered into your corrective action program, the NRC is treating the finding as a non-cited violation (NCV), in accordance with Section VI.A.1 of the NRC Enforcement Policy.

If you contest the NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, 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, and your response (if any), will be available electronically for public inspection in the

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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> (The Public Electronic Reading Room).

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. 05000443/2006004
w/ Attachment: Supplemental Information

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REGION I

Docket No.: 05000443

License No.: NPF-86

Report No.: 05000443/2006004

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

Facility: Seabrook Station, Unit 1

Location: Post Office Box 300
Seabrook, New Hampshire 03874

Dates: July 1, 2006 through September 30, 2006

Inspectors: Glenn Dentel, Senior Resident Inspector
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Approved by: Paul G. Krohn, Chief
Projects Branch 6
Division of Reactor Projects

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SUMMARY OF FINDINGS

IR 05000443/2006004; 7/1/2006 - 9/30/2006; Seabrook Station, Unit 1; Operability Evaluation.

The report covered a 13-week period of inspection by resident inspectors and regional inspectors providing resident inspection support. 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: Mitigating Systems

- Green. A Green self-revealing non-cited violation of Technical Specification (TS) 3.7.1.5, "Main Steam Line Isolation Valves" was identified by the inspectors. On June 30, 2006, operators received a control room alarm associated with a main steam isolation valve (MSIV). Subsequent troubleshooting identified a failed valve control module which affected operability of the MSIV. Seabrook determined that one MSIV was inoperable for approximately 20 hours which was greater than the 4 hour TS allowed outage time. The extended inoperability time was caused, in-part, by improperly assessing the initial operability of the MSIV.

The finding was more than minor because it affected the Mitigating Systems cornerstone objective to ensure the availability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance (Green) since it did not result in the loss of a safety function and it did not impact external initiating events. This finding has a cross-cutting aspect in the area of human performance because Seabrook did not properly assess the available information and follow procedural requirements through a conservative decision-making process for operability of the MSIV. (1R15.1)

B. Licensee-Identified Violations

None.

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REPORT DETAILS

Summary of Plant Status

The plant began the period at rated thermal power and operated at or near full power for the entire report period except for an unplanned shutdown on August 31, 2006, due to two inoperable emergency diesel generators. On September 4, 2006, Seabrook returned to full power and remained there until September 30 when Seabrook began a planned shutdown in preparation for the 11th refueling outage.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 - Two Samples)

a. Inspection Scope

Hot Weather Preparation

The inspectors reviewed Seabrook's preparation for adverse weather relative to the protection of safety-related structures, systems, and components from hot weather. This review included a walkdown of the emergency diesel generator (EDG) and service water switchgear ventilation areas. The inspectors reviewed the following documents to verify the Seabrook's preparation for hot weather was adequate to ensure continued operability during hot weather:

- ON1490/09, "Summer Readiness Surveillance," Revision 0; and
- Operator logs for temperatures in the EDG, service water switchgear, essential switchgear, vital battery, and electrical penetration rooms.

The inspectors reviewed deficiencies identified during the implementation of hot weather protection procedures, and verified these deficiencies were entered into the corrective action program.

Response to Tornado Warning

The inspectors reviewed Seabrook's response to adverse weather relative to the protection of safety-related structures, systems, and components from high winds and a potential tornado during a tornado warning on July 11, 2006. The inspectors reviewed the operating crews' implementation of procedure OS1200.03, "Severe Weather Conditions," Revision 13. The inspectors interviewed the operators and the emergency operating procedure coordinator. The inspectors reviewed condition reports (CRs) 06-07720 and 06-07755.

b. Findings

No findings of significance were identified.

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1R04 Equipment Alignment (71111.04)a. Inspection ScopePartial System Walkdowns. (71111.04 - Three Samples)

The inspectors performed the following partial system walkdowns:

- On August 3 and 4, 2006, the "B" service water train in preparation for work on the "A" service water train;
- On August 22 and 23, 2006, the "B" Primary Component Cooling Water System (PCCW) during work on "A" PCCW equipment; and
- On September 6 and 7, 2006, the "A" charging train following maintenance activities on the "A" charging train;

The inspectors conducted a walkdown of each system to verify that the critical portions of the 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 effect on operability. The inspectors reviewed applicable piping and instrumentation drawings and operational lineup procedures to support the walkdowns and verify proper system alignment. Documents reviewed are listed in the attachment.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)a. Inspection Scope (71111.05Q - Five 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:

- Piping Penetration Area - Primary Auxiliary Building, -34'6" and -26' elevations;
- Fuel Storage Building, all elevations;
- Turbine Building - 50 foot elevation sprinkler system and hose station valve line-up;
- Turbine Building - 50 foot elevation; and
- Non-essential Switchgear Room - 21' 6" elevation.

The inspectors verified that the fire areas were maintained in accordance with applicable portions of Fire Protection Pre-Fire Strategies and Fire Hazard Analysis. Documents reviewed are listed in the attachment.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

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 August 17, 2006. The inspectors reviewed the simulator's physical fidelity in order to verify similarities between the Seabrook control room and the simulator. The inspectors examined the operators' ability to perform actions associated with high-risk activities, the Emergency Plan, previous lessons learned items, 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, discussed, and entered into the corrective action program.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope (71111.12Q - Two Samples)

The inspectors evaluated maintenance rule (MR) implementation for the residual heat removal and the 480 and 4160 volt electrical systems. The inspectors reviewed the effectiveness of maintenance through the review of deficiencies identified, historical performance, and overall system performance. Documents reviewed are listed in the attachment.

Based on issues identified in the review of the documents, the inspectors assessed:

1) the application for MR scoping and MR reliability/availability performance criteria; 2) the corrective actions for deficient conditions; 3) the extent-of-condition reviews for common cause issues; and 4) the contribution of deficient work controls or work practices to any degraded conditions.

The inspectors also reviewed the Seabrook Updated Final Safety Analysis Report and TS for the systems. Corrective actions and maintenance rule functional failure evaluations were assessed against 10 CFR 50.65 requirements and against the

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guidance in Nuclear Management and Resources Council (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.

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

a. Inspection Scope

The inspectors reviewed the scheduling and control of two planned maintenance activities and four emergent work troubleshooting activities in order to evaluate the effect on plant risk. The inspectors conducted interviews with operators, risk analysts, maintenance technicians, and engineers to assess their knowledge of the risk associated with the work, and to ensure that other equipment was properly protected. The compensatory measures were evaluated against Seabrook procedures, Maintenance Manual 4.14, "Troubleshooting," Revision 0 and Work Management Manual 10.1, "On-Line Maintenance," Revision 3. Specific risk assessments were conducted using Seabrook's "Safety Monitor." The inspectors reviewed the following items.

- On June 30, and July 1, 2006, the inspectors reviewed Seabrook's troubleshooting efforts in response to a Main Steam Isolation Valve (MSIV) CP-182 Power Supply Failed alarm being received in the control room. The inspectors also reviewed the troubleshooting plan and work order (WO) 0622624.
- On July 20 through July 23, 2006, the inspectors reviewed troubleshooting efforts in response to water and glycol being found in a rocker arm lube oil sample for the "B" emergency diesel generator (EDG). The inspectors reviewed the troubleshooting plan and interviewed the engineers and operators involved.
- On July 21 through 26, 2006, the inspectors reviewed troubleshooting efforts in response to increased vibration readings on lubricating oil pumps for the "A" main feedwater pump. The inspectors also reviewed the MA 4.14 troubleshooting plan and the plant engineering action plan register for the lubricating oil pumps.
- On August 29, 2006, the inspectors reviewed the plant risk configuration during planned maintenance on a motor control center (1-EDE-MCC-511), "A" emergency diesel generator, and several surveillances identified as potential trip initiators and affecting charging system suction valves.

- On September 19 through 21, 2006, the inspectors reviewed troubleshooting efforts in response to Anticipated Transient Without a Scram (ATWS) system trouble alarms being received in the control room. The inspectors also reviewed CR 06-10869 and WO 0630509.
- On September 27, 2006, the inspectors reviewed the plant risk configuration during unplanned outages of the "A" emergency diesel generator, the startup feedwater pump, and a small increase (0.10 gallons per minute) in reactor coolant system leakage. The inspectors also reviewed the troubleshooting plan for the emergency diesel generator.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15 - Four Samples)

.1 Inoperable Main Steam Isolation Valve for Greater than Technical Specification Allowed Outage Time

a. Inspection Scope

The inspectors assessed operator response and evaluation of an alarm received on June 30, 2006, associated with MS-V-88, one of four main steam isolation valves (MSIV). The inspectors examined the initial operability assessment, interviewed operators and system engineers, reviewed electrical drawings and CRs 06-08536 and 06-07432. The operability evaluation for the MSIV was reviewed using criteria specified in NRC Regulatory Issue Summary 2005-20, "Revision to Guidance formerly contained in NRC Generic Letter 91-18, Information to Licensees Regarding two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability" and Inspection Manual Part 9900, "Operability Determinations and Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety."

b. Findings

Introduction. Seabrook determined that one MSIV isolation was inoperable for approximately 20 hours which was greater than the 4-hour Technical Specification (TS) allowed outage time. The extended inoperability time was caused, in-part, by improperly assessing the initial operability of the MSIV. This finding will be considered self-revealing since a control room alarm indirectly identified the failure. This finding was determined to be of very low safety significance (Green) and was characterized to be an NCV for failure to comply with TS 3.7.1.5, "Main Steam Line Isolation Valves."

Description. On June 30, 2006, at 7:49 p.m., Operators received control room alarm, "MSIV CP-182 Power Supply Failed." Initial troubleshooting by instrumentation and

controls technicians determined the power supplies for the MSIV were functioning. A second indication, an open light, was identified in the test circuitry for MS-V-88. Approximately four to five hours later, engineering personnel determined possible causes of the alarm circuitry and the open light indication. Only one component, the valve control module could have caused both the open light and the control room alarm. In review of the sub-components on the module, the engineers identified several sub-components that would impact the closing circuit and thus operability of the valve but only one sub-component that would give the indication and not impact operability of the MSIV. Operators incorrectly concluded that the MSIV remained operable and requested that troubleshooting be conducted to determine the cause of the alarm.

Actual troubleshooting was started approximately 16 hours after the initial alarm. Technicians identified that the valve control module had failed and TSs were entered for an inoperable MSIV. Technicians completed repairs and the valve was declared operable at 3:59 p.m. on July 1, 2006. Subsequent inspections of the module confirmed that the MSIV had been inoperable from 7:49 p.m. on June 30 to 3:59 p.m. on July 1, a period of approximately 20 hours.

The inspectors reviewed the work order, interviewed the shift manager and system engineers, and examined the condition report evaluations (CRs 06-07432 and 06-08536). Seabrook's oversight and licensing personnel identified that the operators did not implement procedure, OE 4.5, "Operability Determination," in that they did not perform and document an immediate operability determination nor request an operability determination. Several corrective actions were identified including training of senior reactor operators on addressing operability of degraded conditions, enhancing procedure OE 4.5 to reflect NRC guidance on operability, and revising the troubleshooting procedure to address conditions related to operability determinations. The inspectors provided added value by identifying that poor communications between the engineers and the shift manager contributed to the incorrect operability assessment approximately four hours into the event. The inspectors also identified that the corrective actions did not address additional operability training for the engineering group.

The inspectors concluded that operators had sufficient information available approximately four hours after the initial alarm to determine that they no longer had a reasonable assurance of operability. Therefore, without a reasonable assurance of operability, the MSIV should have been declared inoperable and TSs entered. This, in-part, led to the exceedance of the Technical Specification allowed outage time.

Seabrook's failure to meet the Technical Specification time requirements was a violation of NRC requirements and was a performance deficiency. The extended inoperability time was caused, in-part, by improperly assessing the initial operability of the MSIV. This was considered to be a self-revealing finding since the inoperable MSIV was indirectly identified by a control room alarm.

Analysis. The finding was more than minor because it affected the Mitigating Systems cornerstone attribute of human performance and the objective to ensure the availability of systems that respond to initiating events to prevent undesirable consequences. Using Appendix A, Phase 1 of IMC 0609, "Determining the Significance of Reactor Inspection Findings for At-Power Stations," dated November 22, 2005, the finding was determined to be of very low safety significance (Green) since it did not result in loss of a safety function and it did not impact external initiating events. The safety function was not lost due to the redundant closing feature for each MSIV.

Each MSIV was designed with "A" and "B" train closing circuits. Both closing circuits are required for operability of the MSIV. For the indication identified on June 30, only the "A" closing circuit was affected. No impact was identified on the "B" closing circuit. Therefore, as noted above, the risk of the inoperable MSIV was mitigated since the overall system function was not lost.

This finding has a crosscutting aspect in the area of human performance because Seabrook did not properly assess the available information and follow procedural requirements through a conservative decision-making process for operability of the MSIV. Seabrook focused on finding the cause of the alarm rather than proving operability of the component.

Enforcement. Technical Specification 3.7.1.5, "Main Steam Line Isolation Valves," requires that an inoperable but open MSIV must be restored to operable status within four hours or be in hot standby within the next six hours.

Contrary to this requirement, from 7:49 p.m. on June 30, 2006 until 3:59 p.m. on July 1, 2006, the "A" MSIV was inoperable. This period of approximately 20 hours exceeded the Technical Specification (TS) 3.7.1.5 allowed outage time of four hours. Because this violation was of very low safety significance and Seabrook entered this finding into its corrective action program (CRs 06-08536 and 06-07432), this violation is being treated as an NCV consistent with Section VI.A.1 of the NRC Enforcement Policy (**NCV 05000443/2006004-01, Inoperable Main Steam Isolation Valve for Greater than Technical Specification Allowed Outage Time**).

.2 Miscellaneous Operability Evaluations

a. Inspection Scope

The inspectors reviewed operability evaluations and/or condition reports 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 NRC Regulatory Issue Summary 2005-20, "Revision to Guidance formerly contained in NRC Generic Letter 91-18, Information to Licensees Regarding two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability" and Inspection Manual Part 9900, "Operability Determinations and Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to

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Quality or Safety." In addition, where a component was determined to be inoperable, the inspectors verified the TS limiting condition for operation implications were properly addressed. The inspectors performed field walkdowns, interviewed personnel, and reviewed the following items:

- CR 06-10718, which evaluated a 10 CFR Part 21 notification regarding a specific type of relief valve. DG-V-118 and DG-V-124 at Seabrook were affected by the notification. Seabrook performed an operability determination based on the new information provided. The emergency diesel generators (EDGs) were determined to remain operable with current valves in place. Seabrook will replace the springs in the valves when proper replacements are available. The inspectors reviewed the CR and the operability determination. The inspectors also discussed the issue with engineering personnel.
- CR 06-10856, which evaluated the potential for thermally induced current in coax cable. Seabrook performed a second investigation into the 1997 10 CFR Part 21 notification based on some new information provided by another nuclear plant station. Seabrook determined that the site is not affected by this issue. The inspectors reviewed the calculations and interviewed the system engineers.
- CRs 06-11135 and 06-11038, which evaluated flow, pressure, and pump amperage anomalies observed during a surveillance test for the startup feedwater pump. The anomalies were determined to be caused by air in the suction and discharge piping. The inspectors reviewed the troubleshooting evaluation, conducted a field walkdown, and examined immediate corrective actions.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed post-maintenance testing (PMT) activities to ensure: 1) the PMT was appropriate for the scope of the maintenance work completed and in accordance with MA 3.5, "Post Maintenance Testing;" 2) the acceptance criteria were clear and demonstrated operability of the component; and 3) the PMT was performed in accordance with procedures. The following PMT activities were reviewed:

- On July 1, 2006, WO 0622624 following replacement of the valve control module for 1-MS-CP-182 which is the logic cabinet for "A" MSIV. The inspectors also interviewed the instrument and controls technicians and supervisor, engineers, and management.

- On July 11, 2006, WO 0514787 following actuator lubrication and starter inspection for FW-V-163 which is the cross connect valve from the start-up feed pump to the emergency feedwater (EFW) system. The inspectors interviewed the maintenance technicians.
- On August 3, 2006, WO 0625683 following troubleshooting and replacement of a failed relay for the "A" charging pump room return air fan. The inspectors interviewed electrical maintenance technicians and supervisors.
- On August 9, 2006, OX1436.02, "Turbine-Driven Emergency Feedwater Pump Quarterly and Monthly Valve Alignment," Revision 8, following maintenance on steam admission valve, 1-MS-V-393 (WO 0622579).
- On August 18, 2006, LS0557.08, "480 Volt Unit Substation Inspection, Testing and PM," Revision 2 following replacement of unit substation 64 due to a core ground (WO 0446292).

b. Findings

No findings of significance were identified.

1R20 Outage Activities (71111.20 - One Sample)

a. Inspection Scope

On August 31, 2006, Seabrook initiated a plant shutdown per TS 3.8.1.1 due to two inoperable EDGs. The inspectors reviewed the troubleshooting, testing, and corrective actions associated with the two inoperable EDGs. Additional review of the EDG issues will be conducted as discussed in an NRC Preliminary Notification (ML062470004) and press release dated September 18, 2006. The inspectors also reviewed corrective actions for emergent issues identified during the shutdown. The inspectors observed the shutdown of the plant, control of the plant in hot standby, the start-up of the plant, and synchronization of the turbine generator to the grid. The inspectors performed a walkdown of containment immediately after the plant entered Mode 3. The inspectors reviewed applicable procedures, observed control room activities, conducted walkdowns, and interviewed key personnel. The inspectors evaluated the activities against TS requirements, Seabrook procedures, and other applicable requirements.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 - Four 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 selected pre-evolution briefings, performed system and control room walkdowns, observed operators and technicians performed test evolutions, reviewed system parameters, and interviewed the system engineers and field operators. The 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 July 20, IX1680.922, "Solid State Protection System Train B Actuation Logic Test," Revision 9;
- On July 31, ES1804.056, "CBS-TK-101A and CBS-TK-101B Encapsulation Tank Leakage Rate Test," Revision 2. The inspectors reviewed the last three surveillance results and the basis for the acceptance criteria contained in Engineering Evaluation 91-37, "Leakage Acceptance Criteria for CBS Sump Valve Encapsulations," Revision 1 and Calculation C-S-83804 [Containment Building Spray];
- On August 22, OX1456.42, "Train B ESFAS Slave Relays Quarterly Block Test," Revision 6 [Engineering Safety Feature Actuation System]; and
- On August 23, OX1412.02, "PCCW Train B Quarterly Operability, 18 Month Position Indication, and Comprehensive Pump Testing," Revision 9.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23 - One Sample)a. Inspection Scope

The inspectors reviewed temporary alteration (TALT) 06-006, "Compensatory Provisions for Removal of a Portion of the Fire Protection Header from Service," Revision 0 and associated implementing documents to verify Seabrook's design basis and affected system/component operability were maintained. TALT 06-006 was associated with the installation of new feedwater flow instrumentation. A section of fire protection piping was removed during the instrumentation installation. TALT 06-006 provided alternate

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sources of water to the cable spreading room and electro-hydraulic control skid deluge systems.

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

- Maintenance Manual, MA 4.3A, "Temporary Modifications and Temporary Alterations," Revision 16; and
- TALT 06-006.

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, tagging of plant equipment affected by the temporary alteration, and procedural changes. The inspectors verified 10 CFR 50.59 reviews and 10 CFR 50.65(a)(4) risk evaluations were completed correctly. The inspectors interviewed the design engineer, the fire protection engineer, and the fire brigade leader. The inspectors also examined the combined effect of the modification with other outstanding temporary modifications.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems (71152 - One Sample)

.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 Annual Sample: Adverse Trend in Operations Department Performance

a. Inspection Scope

The inspectors noticed an adverse trend in the performance of Operations Department personnel, as evidenced by the number of human performance errors during the preceding six months. The inspectors reviewed a sample of CRs for the second and third quarters of 2006, examined various procedures associated with conduct of operations, interviewed personnel, and discussed the trend with the Operations Manager. The inspectors reviewed the following documents:

- CR 06-05950, "Train "B" Control Building Air Handling (CBA) Declared Operable with both Chilled Water Pump Breakers in the "Open" Position." On May 24, 2006, operators performing post-maintenance restoration left the breakers for both of the chilled water pumps in the "OFF" position. One of the two chilled water pumps is required for CBA system operation.
- CR 06-06379, "EAH-FN-31B Found Tripped;" and CR 06-06410, "Operations Review of Logger Alarms Did Not Detect the Logger Only Alarms That Came in as a Result of EAH-FN-31B Tripping." On June 3, 2006, the trip of the fan occurred at 8:38 p.m. and alarmed in the Control Room on the computer alarm printer. The control board operators did not note the fan was tripped until 6:12 a.m. the next morning, a period of approximately nine hours.
- CR 06-06434, "VCT Level Decrease During Clearance/Tagging." On June 6, 2006, a licensed senior operator listed an incorrect valve on the clearance form, which resulted in the loss of 180 gallons from the volume control tank. The Root Cause Analysis (RCA) team identified that two opportunities had been missed relative to the review of operating experience applicable to this event, both from the 2003 time frame.
- CR 06-07045, "Bus 11B Isolated from Battery Charger." On June 21, 2006, during restoration from testing of a safety-related battery charger, maintenance technicians opened the wrong breakers causing alarms in the control room at 6:58 p.m. The operators expected alarms during the restoration and therefore did not recognize that the alarms received were the wrong alarms. The oncoming mid-shift operators accepted the "as-expected" alarms, and also did not recognize that these were the wrong alarms. The oncoming day-shift operators questioned the alarms and discovered that the bus was being supplied by the battery and that there was no battery charger maintaining the charge on the bus (Previously discussed in NRC Inspection Report 05000443/2006003).
- CR 06-07142, "Adverse Trend with Respect to Operations Department Performance in the Area of Control Board Monitoring/Awareness."

- FPL Energy Seabrook Station, Operations Department Improvements Initiative, 2006 “Back to Basics.”
- NAP-402, “Conduct of Operations,” Revision 2.
- ODI-23, “Watch Relief and Shift Turnover Briefings,” Revision 11.
- ODI-74, “Control Board Monitoring,” Revision 1.
- ODI-77, “Pre-Job Briefings, Crew Transient Briefings, and Post-Job Briefings,” Revision 22.

b. Findings

No findings of significance were identified.

The inspectors noted that during each of the above events, the operators accepted actual or potential changes to plant conditions without questioning them. In the first case, the operating crew did not question the fact that one of the two associated work orders was not completed, but authorized the clearance order without a review of the associated initial conditions. In the second case, operators did not adequately review the alarm printer during the shift or adequately monitor the control room panels. In the third case, the operators did not adequately review the clearance prior to authorizing the hanging of the clearance tags. In the last case, the operators expected alarms and did not verify that the alarms received were correct; nor did the operators review the alarm response procedures at the time the alarms were received or during the subsequent shift turnovers. Two of the cases were self-revealing and the other two were self-identified.

Immediately after the last event, the Seabrook station management instituted several interim corrective actions including: 1) a stand down of the Operations and Maintenance Departments to review the events; 2) increased frequency of reactor operator control room board walkdowns with the Unit Supervisor or Shift Manager; 3) all alarms treated as unexpected, with the alarm response procedure reviewed for each case; and 4) senior management oversight in the control room.

Subsequently, station management wrote CR 06-07142. Through the conduct of an Apparent Cause Evaluation (ACE), Seabrook determined that the overall cause for the decline in the Operations Department performance was attributable to complacency on the part of the operators, following an extended period of adequate human and equipment performance. The ACE also noted that this led to a less-than-strict adherence to standards and procedures. One action from the CR was the “Operations Department Improvement Initiative,” which focused on six areas for improvement:

- control board monitoring;
- alarm response;

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- consistent expectations reinforcement;
- workload reduction;
- equipment status / return to service; and
- tagging.

The inspectors considered the individual RCA's and ACE's to be adequate for each individual event. The ACE performed for the negative trend was self-critical. The improvement initiative listed numerous corrective actions to prevent recurrence, and several effectiveness reviews (planned for early 2007) to evaluate if the corrective actions have been adequate.

4OA3 Event FollowUp (71153 - Two Samples)

- .1 (Closed) LER 05000443/2006004, Technical Specification Violation due to Inoperable Battery Charger

The inoperable battery charger was previously reviewed and documented in NRC Inspection Report 05000443/2006003, Section 1R14.1, as a non-cited violation of very low safety significance (Green). The inspectors reviewed the accuracy of the licensee event report (LER) and verified compliance with the reportability requirements in 10 CFR 50.73 and NUREG 1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73," Revision 2. No additional findings of significance were identified. This LER is closed.

- .2 (Closed) LER 05000443/2006005, Technical Specification Violation with Inoperable Main Steam Isolation Valve

This issue was addressed in Section 1R15.1 of this inspection report and was documented as a non-cited violation of very low safety significance (Green). The inspectors reviewed the accuracy of the licensee event report and verified compliance with the reportability requirements in 10 CFR 50.73 and NUREG 1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73," Revision 2. No additional findings of significance were identified. Seabrook documented this issue in CRs 06-08536 and 06-07432. This LER is closed.

4OA5 Other Activities

- .1 TI 2515/169 - Mitigating Systems Performance Index Verification (One Sample)

a. Inspection Scope

The inspectors performed Temporary Instruction 2515/169, Mitigating Systems Performance Index (MSPI) Verification. The inspectors collected and reviewed Seabrook procedures and supporting information pertaining to the MSPI. The inspectors reviewed the data submitted by Seabrook to Nuclear Energy Institute (NEI) against actually plant system performance and plant conditions. The inspectors

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interviewed system engineers and the plant's MSPI coordinator. The licensee's procedures and data collection were reviewed against the TI and NEI 99-02, Revision 4.

b. Findings and Observations

No findings of significance were identified. The inspectors identified an instance where unavailability hour accrual was stopped upon the opening of the main generator breaker instead of when the reactor went subcritical. Seabrook initiated CR 06-09959. The extent-of-condition review from this CR identified additional instances of incorrect accounting of unavailability hours. The corrected data did not have any significant impact on performance indicator reporting. Seabrook provided additional training to system engineers to ensure that unavailability hours are correctly counted.

4OA6 Meetings, including Exit

Exit Meeting Summary

The inspectors presented the inspection results to Mr. G. St. Pierre on October 11, 2006, following the conclusion of the period. The licensee acknowledged the findings presented. The licensee did not indicate that any of the information presented at the exit meeting was proprietary.

Site Management Visit

On July 18, 2006, Mr. Gregory Jaczko, NRC Commissioner and Mr. Samuel Collins, Regional Administrator, Region I visited the site and met with Mr. Gene St. Pierre and other members of licensee management.

ATTACHMENT: SUPPLEMENTAL INFORMATION

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SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

D. Bemis, Shift Manager
M. Flores, Nuclear Oversight
P. Freeman, Engineering Director
M. Kiley, Station Director
M. Makowicz, Plant Engineering Manager
R. McCormack, Service Water System Engineer
M. O'Keefe, Regulatory Compliance Supervisor
D. Ritter, Operations Manager
D. Sherwin, Maintenance Manager
G. St. Pierre, Site Vice President

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Closed:

05000443/2006004	LER	Technical Specification Violation due to Inoperable Battery Charger (Section 4OA3.1)
05000443/2006005	LER	Technical Specification Violation with Inoperable Main Steam Isolation Valve (Section 4OA3.2)

Opened and Closed:

05000443/2006004-01	NCV	Inoperable Main Steam Isolation Valve for Greater than Technical Specification Allowed Outage Time (Section 1R15.1)
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Discussed:

05000443/2006003-03	NCV	Untimely Operator Identification Results in Failure to Comply with TS 3.8.2.1
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LIST OF DOCUMENTS REVIEWED

Section 1R04: Equipment Alignment

Procedures

OS1002.02, "Operation of Letdown, Charging, and Seal Injection," Revision 13
OS1016.01, "Service Water System Fill and Vent," Revision 9
OS1012.04, "Primary Component Cooling Water Loop B Operation," Revision 11

Documents

Maintenance Support Evaluation: 06MSE079
PCCW Health Report
Drawing #HSYQ-063A PAB-25-PB400
Drawings 1-CS-B20722, B20725, B20726, B20727, and B20729

Section 1R05: Fire Protection

Procedures

Prefire Strategies for Zones PP-F-1A-Z, TB-F-2-Z, TB-F-2-0, NES-F-1A-Z, FSB-F-1-A

Section 1R12: Maintenance Effectiveness

Documents

Residual Heat Removal System Health Report
480 and 4kV Electrical System Health Reports
Maintenance Rule Scoping for Residual Heat Removal and 480 and 4kV Electrical Systems
Various Condition Reports for Residual Heat Removal and 480 and 4kV Electrical Systems
J-10 and J-13 Failure History Reports, 2002-2006

Section 1R20: Outage Activities

Procedures

OS1000.06, "Power Decrease" Revision 6
OS1000.03, "Plant Shutdown from Minimum Load to Hot Standby" Revision 5
OS1000.02, "Plant Startup from Hot Standby to Minimum Load" Revision 7
ON1031.02, "Starting and Phasing the Turbine Generator" Revision 5

LIST OF ACRONYMS

ACE	Apparent Cause Evaluation
ADAMS	Agencywide Documents Access and Management System
ATWS	Anticipated Transient Without a Scram
CBA	Control Building Air Handling
CR	Condition Report
EDG	Emergency Diesel Generator

FPL	Florida Power and Light
IMC	Inspection Manual Chapter
LER	Licensee Event Report
MR	Maintenance Rule
MSIV	Main Steam Isolation Valve
MSPi	Mitigating Systems Performance Index
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
NUMARC	Nuclear Management and Resources Council
PARS	Publicly Available Records
PCCW	Primary Component Cooling Water
PMT	Post Maintenance Testing
RCA	Root Cause Analysis
SDP	Significance Determination Process
TALT	Temporary Alteration
TS	Technical Specification
WO	Work Order