

May 10, 2007

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
05000443/2007002

Dear Mr. St. Pierre,

On March 31, 2007, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at Seabrook Nuclear Power Station. The enclosed report documents the inspection results which were discussed on April 10, 2007, 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.

The report documents one NRC-identified finding of very low safety significance (Green). This finding was determined to not involve a violation of NRC requirements.

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 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/

Arthur L. Burritt, Chief
Projects Branch 3
Division of Reactor Projects

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

Enclosure: Inspection Report No. 05000443/2007002
w/ Attachment: Supplemental Information

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U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.: 05000443

License No.: NPF-86

Report No.: 05000443/2007002

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

Facility: Seabrook Station, Unit 1

Location: Post Office Box 300
Seabrook, New Hampshire 03874

Dates: January 1, 2007 through March 31, 2007

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S. Shaffer, Resident Inspector
E. Huang, Reactor Engineer
P. Frechette, Security Inspector
J. Nicholson, Health Physicist
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Approved by: Arthur L. Burritt, Chief
Projects Branch 3
Division of Reactor Projects

Enclosure

TABLE OF CONTENTS

SUMMARY OF FINDINGS	iii
REACTOR SAFETY	1
1R01 Adverse Weather Protection	1
1R04 Equipment Alignment	1
1R05 Fire Protection	2
1R06 Flood Protection Measures	3
1R11 Licensed Operator Requalification Program	4
1R12 Maintenance Effectiveness	5
1R13 Maintenance Risk Assessments and Emergent Work Evaluation	5
1R15 Operability Evaluations	7
1R19 Post-Maintenance Testing	8
1R20 Refueling and Outage Activities	8
1R22 Surveillance Testing	9
1R23 Temporary Plant Modifications	10
EMERGENCY PREPAREDNESS	10
1EP6 Drill Evaluation	10
RADIATION SAFETY	11
2OS1 Access to Radiologically Significant Areas	11
2OS2 ALARA Planning and Controls	13
OTHER ACTIVITIES	15
4OA1 Performance Indicator Verification	15
4OA2 Identification and Resolution of Problems	16
4OA3 Event FollowUp	19
4OA5 Other Activities	20
4OA6 Meetings, including Exit	21
ATTACHMENT: SUPPLEMENTAL INFORMATION	A-1
KEY POINTS OF CONTACT	A-1
LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED	A-1
LIST OF DOCUMENTS REVIEWED	A-2
LIST OF ACRONYMS	A-5

Enclosure

SUMMARY OF FINDINGS

IR 05000443/2007002; 1/1/2007-3/31/2007; Seabrook Station, Unit 1; Identification and Resolution of Problems.

The report covered a 13-week period of inspection by resident inspectors and announced inspections by regional health physics. One Green finding 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. The inspectors identified a finding for Seabrook not adequately evaluating and taking corrective actions to ensure the ability of alternate water sources to provide cooling to the charging pump lube oil coolers. Seabrook did not perform confirmatory tests or develop an engineering basis for acceptability of the system following initiation of condition reports in 2004 and 2005, which documented concerns with the testing and ability of the alternate cooling water system to perform its Updated Final Safety Analysis Report function. In October 2006, the alternate cooling system failed to function due to rust buildup on the discharge check valves which prevented the valves from opening. This did not violate NRC regulations because the alternate cooling system is not safety-related.

This finding was more than minor because it affected the Mitigating Systems cornerstone attribute of equipment performance and the objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. The risk significance was determined through a detailed assessment. The finding was determined to be of very low safety significance (Green) since the inability to implement alternate cooling water would not increase the chance of core damage. The finding has a cross-cutting aspect in the area of problem identification and resolution because Seabrook did not properly evaluate a known deficiency associated with the alternate cooling water system.

B. Licensee-Identified Violations

None.

Enclosure

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 two unplanned power reductions. On January 25, 2007, operators reduced power to 18 percent and took the turbine generator offline to complete maintenance on a rupture disk on Zone 4 of the switchyard SF6 system. Seabrook returned to 100 percent power on January 26, 2007. On March 17 through March 30, Seabrook operated at reduced power (96 to 99 percent) due to elevated temperatures on the generator neutral bus. On March 30, 2007, Seabrook reduced power to 8 percent and took the turbine generator offline in order to replace the generator neutral bus.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 - 1 Sample)

a. Inspection Scope

The inspectors reviewed Seabrook's preparation for adverse weather relative to the protection of the electrical switchyard from cold weather. On January 25, 2007, the inspectors reviewed actions taken following a cold weather issue that resulted in unplanned downpower of the plant (see Section 4OA3 for details). The inspectors reviewed corrective actions to the problem, examined extent of condition reviews, and conducted walkdowns of the switchyard. The inspectors reviewed the following condition reports (CR) 07-01860, 07-01278, 07-01399, 07-01533, and 07-01422. The inspectors reviewed deficiencies identified during Seabrook extent of condition walkdowns, and verified these deficiencies were entered into the corrective action program.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Full System Walkdown - Main Steam System (71111.04S - 1 Sample)

a. Inspection Scope

The inspectors conducted a detailed review of the alignment and conditions of the main steam system. The inspectors performed a walkdown to verify the system alignment was maintained in accordance with system drawings and procedures. Control room indications were verified to be appropriate and consistent with Technical Specification requirements and the Updated Final Safety Analysis Report (UFSAR). The inspectors reviewed and evaluated the potential impact on system operation from open work

Enclosure

orders, condition reports, and tagged equipment. System health reports were reviewed, verified during the walkdown, and discussed with the system engineer. Documents reviewed are listed in the attachment.

b. Findings

No findings of significance were identified.

.2 Partial System Walkdowns (71111.04Q - 3 Samples)

a. Inspection Scope

The performed the following partial system walkdowns:

- On February 15, 2007, the “B” train of the charging system while the “A” train was out-of-service for maintenance on the “A” charging pump and supply breakers.
- On February 20, 2007, the “B” train of the residual heat removal (RHR) system while the “A” emergency diesel generator (EDG) was out-of-service for maintenance. The “A” EDG provides power to the “A” RHR system in the event of a loss of offsite power.
- On March 27, 2007, the feedwater system prior to the main generator outage. The feedwater system was reviewed based on the challenge to the system during the transition from 100 percent power operation to 8 percent power operation.

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 - 11 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

Enclosure

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:

- Control Building Essential Switchgear Rooms Train "B", 21' -6".
- Control Building Essential Switchgear Rooms Train "A", 21' -6".
- Turbine Building Relay Room, Ground Floor.
- Electrical Tunnel Train "A", 0'.
- Electrical Penetration Room Train "A", 0'.
- Electrical Tunnel Train "B", -26'.
- Electrical Penetration Room Train "B", -26'.
- Residual Heat Removal (RHR) "A" & "B" Rooms, - 61'.
- Safety Injection Pump "A" & "B" Rooms, - 50'.
- Main Steam Feedwater Pipe Chase - West, All elevations.
- Main Steam Feedwater Pipe Chase - East, All elevations.

The 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.

1R06 Flood Protection Measures (71111.06 - 1 Sample)

a. Inspection Scope

The reviewed the external flood protective features at the site. The conducted walkdowns of the external structures including the vertical concrete seawall, sheet pile retaining wall, and the stone revetment. The assessed the design against Seabrook's UFSAR and other design basis documents. The reviewed previous inspections and the periodic surveillance procedure. The compared the as-found conditions to ensure that the structures remained able to perform the design basis function. Documents reviewed are listed in the attachment.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11).1 Quarterly Resident Inspectors Review (71111.11Q - 1 Sample)a. Inspection Scope

The observed the conduct of licensed operators during a simulator training session on March 19, 2007. The reviewed the simulator's physical fidelity in order to verify similarities between the Seabrook control room and the simulator. The 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 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. Documents reviewed are listed in the attachment.

b. Findings

No findings of significance were identified.

.2 2006 Annual Review of Testing Resultsa. Inspection Scope

On January 23, 2007, regional conducted an in-office review of licensee annual operating test results for 2006. The inspection assessed whether pass rates were consistent with the guidance of NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process" (SDP). The verified that:

- Crew failure rate was less than 20%. (Crew failure rate was 0%.)
- Individual failure rate on the dynamic simulator test was less than or equal to 20%. (Individual failure rate was 0%.)
- Individual failure rate on the walk-through test was less than or equal to 20%. (Individual failure rate was 0%.)
- Overall pass rate among individuals for the operating test was greater than or equal to 75%. (Overall pass rate was 100%.)

b. Findings

No findings of significance were identified.

Enclosure

1R12 Maintenance Effectiveness (71111.12)a. Inspection Scope (71111.12Q - 2 Samples)

The inspectors completed two maintenance rule (MR) samples reviewing specific issues associated with failures of a remote safe shutdown indication and a main steam isolation valve.

The inspectors reviewed the application of the MR for the failure of the valve control module card for a main steam isolation valve (MS-V-88). The failure occurred June 30, 2006. The corrective action aspect of these failures was described in NRC Inspection Report 05000443/2006004. The inspectors specifically examined the maintenance preventable functional failure (MPFF) evaluation against the guidance in NUMARC 93-01, "Industry Guideline for Monitoring the effectiveness of Maintenance at Nuclear Power Plants," Revision 2.

The inspectors reviewed the evaluation of a March 2007 failure of a remote safe shutdown steam generator level transmitter. The inspectors reviewed the MPFF evaluation (CR 07-04321), examined troubleshooting and maintenance activities, and interviewed the system engineer to determine work history and industry operating experience. This information was evaluated against the guidance in NUMARC 93-01.

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

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation (71111.13 - 7 Samples)a. Inspection Scope

The inspectors reviewed the scheduling and control of three 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 January 16, 2007, the inspectors reviewed the troubleshooting efforts in response to the unplanned tripping open of switchyard breaker 11. The inspectors observed work activities conducted using WO 0702084 and reviewed the emergent risk assessment.
- On January 25, 2007, the inspectors reviewed the troubleshooting efforts in response to loss of SF6 pressure in Zone 4 of the switchyard. The inspectors reviewed the MA 4.14 troubleshooting control form and attended troubleshooting team meetings. The inspectors also reviewed work activities conducted using WO 0703129 to replace the failed rupture disk.
- During the week of February 12, 2007, the inspectors reviewed the plant risk configuration during planned maintenance on motor control center (MCC) 512. The inspectors examined the impact of MCC-512 through review of panel failure analysis and electrical prints. The operational compensatory measures were also evaluated.
- On February 20, 2007, the inspectors reviewed the plant risk configuration during planned maintenance on the "A" emergency diesel generator and surveillances on trip critical nuclear instrumentation. The inspectors also reviewed the evaluation and troubleshooting of emergent issues identified during the emergency diesel generator maintenance.
- On February 21 and 22, 2007, the inspectors reviewed troubleshooting efforts in response to a leak in a four-inch tee on cooling water outlet piping for the "A" emergency diesel generator. The inspectors followed the troubleshooting efforts and repairs by attending meetings and observing field activities. The inspectors reviewed work activities conducted using WO 0705740.
- On March 13, 2007, the inspectors reviewed the plant risk configuration during planned maintenance on the "A" residual heat removal system and a switchyard breaker, and surveillances associated with the "A" vital battery, "A" residual heat removal pump, and the "A" emergency diesel generator.
- During March, the inspectors reviewed troubleshooting efforts and operational decision making in response to elevated temperatures on the generator neutral bus. Operators reduced power to minimize the temperature increase. The inspectors monitored the rise in temperature, compensatory measures, and operator instructions.

b. Findings

No findings of significance were identified.

Enclosure

1R15 Operability Evaluations (71111.15 - 3 Samples)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 Quality or Safety." In addition, where a component was determined to be inoperable, the inspectors verified the Technical Specifications (TS) limiting condition for operation implications were properly addressed. The inspectors performed field walkdowns, interviewed personnel, and reviewed the following items:

- CR 07-00764, which evaluated movement of the stuffing box journal sleeve for service water (SW) pump 41C. Seabrook determined that movement of the journal sleeve would be limited by the shaft coupling. The inspectors assessed the potential impact of the movement and subsequent increased stuffing box leakage.
- CR 07-01454, which evaluated glycol leakage from the "A" Supplemental Emergency Power System (SEPS) diesel during surveillance testing. The inspectors conducted field walkdowns and reviewed historical glycol additions and operator logs.
- CR 07-02985, which evaluated unexpected additives and wear particles in the "A" emergency diesel generator (EDG) governor oil. The inspectors reviewed the initial and subsequent oil samples on the "A" and "B" EDGs.

b. Findings

No findings of significance were identified.

Enclosure

1R19 Post-Maintenance Testing (71111.19 - 6 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 January 7, 2007, WOs 0617359 and 0700407 following replacement of the inboard and outboard motor bearing for control building air fan 14B. The inspectors reviewed both WOs and maintenance support evaluations (MSE) 06MSE096 and 07MSE009 which were implemented to increase motor life.
- On January 24, 2007, OX1436.08, "Startup Feed Pump Quarterly Surveillance," Revision 9 following repairs addressing startup feed pump inboard and outboard bearing leaks (WO 0634828).
- On January 25, 2007, WO 0703129, which addressed repairs to two rupture disks associated with SF6 gas zone 4 in the 345kV Switchyard.
- On February 1, 2007, WO 0703637, which repositioned the "B" charging pump inboard shaft deflector ring.
- On February 22, 2007, WO 0705740, which addressed repairs to a four-inch tee in cooling water piping for the "A" emergency diesel generator.
- On March 16, 2007, OS1006.04, "Operation of the Containment Spray System," Revision 8 following tightening of the bolts of the containment building spray heat exchanger lower flange (WO 0704545).

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities (71111.20 - 1 Sample).1 Generator Outage Activitiesa. Inspection Scope

The inspectors reviewed operational, maintenance, and scheduling activities prior to and during the March 30, 2007 outage to replace the generator neutral bus. The inspectors evaluated Seabrook's ability to assess and manage risk during the outage. Prior to the outage, the inspectors reviewed the outage plan and the risk assessment of the schedule. The observed the downpower of the plant and the shutdown of the turbine

Enclosure

and generator. The inspectors reviewed applicable procedures, observed control room activities, conducted walkdowns and interviewed key personnel. 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 - 6 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 perform 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 January 18, 2007, OX1426.01, "DG 1A Monthly Operability Surveillance," Revision 9.
- On February 9, 2007, IX1680.921, "Solid State Protection System (SSPS) Train A Actuation Logic Test," Revision 9.
- On February 23, 2007, RS07-01-01, "Main Turbine Control Valve Testing," Revision 0, OX1431.03, "Main Control Valve Quarterly Test," Revision 8, OX1431.04, "Combined Intermediate Valve Quarterly Cycling Test," Revision 7, and OX1431.02, "Main Turbine Stop Valves Quarterly Operability Test," Revision 8.
- On March 5, 2007, OX4101.03, "RCS Vent Path Block Valve Quarterly, Cold Shutdown, and 18 Month Surveillance Test," Revision 7.
- On March 20, 2007, OX1461.04, "SEPS Monthly Availability Surveillance," Revision 0.
- On March 30, 2007, ON1035.11, "Main Feed Pump Return to Standby and Shutdown," Revision 7.

Enclosure

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23 - 1 Sample)

a. Inspection Scope

The inspectors reviewed temporary modification 07-004 and associated implementing documents to verify Seabrook's design basis and affected system operability were maintained. The temporary modification involved installation of a mechanical device to prevent unplanned opening of a disconnect switch. The disconnect switch was manually closed after failure of the motor operated disconnect to operate. The purpose of the switch is to allow maintenance to be performed on breakers and equipment in the electrical switchyard.

The inspectors interviewed engineers and operators, completed field walkdowns, and reviewed Maintenance Manual, MA 4.3A, "Temporary Modifications and Temporary Alterations," Rev. 16. The inspectors verified that the temporary modification 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 modification, and procedural changes. The inspectors verified 10 CFR 50.59 reviews and 10 CFR 50.65(a)(4) risk evaluations were completed correctly.

b. Findings

No findings of significance were identified.

EMERGENCY PREPAREDNESS

1EP6 Drill Evaluation (71114.06 - 2 Samples)

.1 Combined Function Drill

a. Inspection Scope

On March 14, 2007, the inspectors observed combined function drill 07-01, 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 4 and Seabrook's Emergency Response Manual 1.1, "Classification of Emergencies," Revision 43. The inspectors observed the technical support center to ensure that priorities were appropriately identified and communicated. The inspectors also verified that identified drill performance problems were entered into the corrective action program through observation of the critique, review of the drill evaluation report, interviews of applicable drill participants, and review of condition reports initiated.

Enclosure

b. Findings

No findings of significance were identified.

.2 Classification and Notification during Requalification Training

a. Inspection Scope

The inspectors reviewed the operators' emergency classification and notification completed during requalification training on March 19, 2007 (See Section 1R11). The inspectors evaluated the results against Seabrook's Emergency Response Manual 1.1, "Classification of Emergencies," Revision 43 and NEI 99-02.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety (OS)

2OS1 Access to Radiologically Significant Areas (71121.01 - 11 samples)

a. Inspection Scope

During the period March 5 through 8, 2007, 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 (RCA) during normal power operations, and that workers were adhering to these controls when working in these areas. Implementation of these controls was reviewed against the criteria contained in 10 CFR 20, Seabrook Technical Specifications, and Seabrook's procedures.

This activity represents the completion of 11 samples relative to this inspection area partially completing the annual inspection requirement of 21 samples.

Plant Walkdown and RWP Reviews

- (1) The inspectors toured accessible radiologically controlled areas and, with the assistance of a radiation protection technician, performed independent radiation surveys of selected areas and components, to confirm the accuracy of survey data, and the adequacy of postings. Surveys were conducted in the Primary Auxiliary Building (PAB), Waste Processing Building (WPB), Residual Heat Removal Vaults, and Fuel Storage Building.
- (2) The inspectors identified plant areas where radiologically significant work activities were being performed. These activities included scaffolding erection in

Enclosure

the (-) 26' mechanical penetration area of the PAB, and various maintenance tasks in the Containment Building. The inspectors reviewed applicable RWPs for these activities, RWP 07-002 and RWP 07-0010; respectively, and the electronic dosimeter dose/dose rate alarm set points, for the associated tasks, to determine if the radiological controls were acceptable and if the setpoints were consistent with plant policy.

- (3) There were no significant dose gradients requiring relocation of dosimetry for the radiologically significant jobs reviewed during this inspection.
- (4) There were no current radiation work permits for airborne radioactivity areas with the potential for individual worker internal exposures of > 50 mrem.
- (5) During 2006, there were no internal dose assessments for any actual internal exposures greater than 50 mrem Committed Effective Dose Equivalent (CEDE). The reviewed selected CEDE dose assessments for 2006; no CEDE exceeded 10 mrem. The inspectors also reviewed assessments for shallow dose equivalents (SDE) and total effective dose equivalents (TEDE), and determined that no exposure exceeded regulatory criteria.

Problem Identification and Resolution

- (6) A review of Nuclear Oversight assessment reports and daily summary reports was conducted to determine if identified problems were entered into the corrective action program for resolution.
- (7) 13 condition reports, associated with radiation protection control access, initiated between October 1, 2006 and March 5, 2007, were reviewed and discussed with Seabrook staff to determine if the follow-up activities were being conducted in an effective and timely manner, commensurate with their safety significance.

High Radiation Area and Very High Radiation Area Controls

- (8) Procedures for controlling access to High Radiation Areas (HRA) and Very High Radiation Areas (VHRA) were reviewed to determine if the administrative and physical controls were adequate. Included in the review was Health Physics Study/Technical Information Document (HPSTID 97-001) entitled, "Interpretation of Floor Plugs as being "Locked".
- (9) Keys to locked high radiation areas (LHRA) were inventoried and accessible LHRA's were verified to be properly secured and posted during plant tours.

Radiation Worker and Radiation Protection Technician Performance

- (10) Several radiologically related condition reports (see Section 4OA2) were reviewed to evaluate if the incidents resulted from repetitive worker errors with similar causes.

Enclosure

- (11) Radiation Protection Technicians and radworkers were questioned regarding their knowledge of plant radiological conditions and associated controls.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls (71121.02 - 9 samples)

a. Inspection Scope

During the period March 5 through 8, 2007, the inspectors conducted the following activities to verify that the licensee was properly implementing operational, engineering, and administrative controls to maintain personnel exposure as low as is reasonably achievable (ALARA) for past activities performed during the fall 2006 refueling outage (OR11). Also, reviewed were the dose controls for current activities and the forecasted dose during power operations for 2007. Implementation of these controls was reviewed against the criteria contained in 10 CFR 20, applicable industry standards, and Seabrook's procedures.

Radiological Work Planning

- (1) The inspectors reviewed pertinent information regarding cumulative exposure history, current exposure trends, and ongoing activities to assess past (2006) outage (OR-11) performance and dose challenges for 2007.
- (2) The inspectors reviewed the exposure data for tasks performed during the fall 2006 outage and compared actual exposure with forecasted estimates contained in job ALARA reviews (AR). Outage jobs included Reactor Disassembly/Reassembly (AR 06-01), steam generator eddy current testing (AR 06-02), scaffolding installation/removal (AR 6-11), split pin replacement project (AR 06-13), reactor head bare metal inspections (AR 06-14), and ECCS sump modifications (AR 06-15).
- (3) The inspectors evaluated the departmental interfaces between radiation protection, operations, maintenance crafts, and engineering to identify missing ALARA program elements and interface problems. The evaluation was accomplished by attending a weekly work planning meeting for radiologically significant tasks and a pre-job briefing for a containment building entry, reviewing recent Radiation Safety Committee meeting minutes, post-job ALARA reviews, Nuclear Oversight Department field observation reports, and interviewing the ALARA coordinator.

The inspectors attended the pre-job briefing for an at power containment entry on March 7, 2007, to conduct various maintenance tasks.

Enclosure

The inspectors also reviewed the Radiation Protection Department Continuous Improvement Initiative that identifies areas for further improvement of radiological controls.

Verification of Dose Estimates

- (4) The inspectors reviewed the assumptions and basis for the annual (2007) site collective exposure projections for routine power operations.
- (5) The inspectors reviewed Seabrook's procedures associated with monitoring and re-evaluating dose estimates when the forecasted cumulative exposure for tasks differed from the actual dose received. The inspectors reviewed the dose/dose rate alarm reports and exposure data for selected individuals receiving the highest TEDE, CEDE, and SDE exposures for 2006 to confirm that no individual exposure exceeded the regulatory limit, or met the performance indicator reporting guideline.

Jobs-In-Progress

- (6) The inspectors observed the pre-job briefing for a containment building entry, on 03/07/2007, in which various maintenance activities were to be performed. The inspectors reviewed the RWP (#07-010) and various visual aids used for communicating the radiological/industrial safety controls applied to containment entries during power operations.
- (7) The inspectors reviewed recent ALARA Evaluations (AE) developed for controlling low dose tasks. Included in this review were AEs for surveying radioactive material shipping boxes, inspecting the letdown valve room for leakage, performing visitor tours in the RCA, and inspecting drain header tailpieces for leakage.

Declared Pregnant Workers

- (8) The inspectors reviewed the procedural controls for managing declared pregnant workers (DPW) and determined that no DPWs were employed at the site since the last inspection of this area in October 2006.

Problem Identification and Resolution

- (9) The inspectors reviewed five (5) condition reports related to controlling individual personnel exposure and programmatic ALARA challenges to determine if problems were being entered into the corrective action program for timely resolution. Details of this review are contained in Section 4OA2 of this report.

Enclosure

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151 - 4 Samples)

a. Inspection Scope

The inspectors sampled Seabrook submittals for the performance indicators (PIs) listed below for the period from April 2006 through December 2006. PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 4, were used to evaluate the accuracy and basis in reporting for each data element.

Initiating Events Cornerstone

- Unplanned Scrams per 7,000 Critical Hours
- Unplanned Scrams with Loss of Normal Heat Removal
- Unplanned Power Changes per 7,000 Critical Hours

Mitigating Systems Cornerstone

- Safety System Functional Failures

The inspectors reviewed plant records such as Licensee Event Reports (LERs), operating logs, procedures, and interviewed applicable Seabrook personnel to verify the accuracy and completeness of Seabrook's PI data.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Condition Report Screening

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," and 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 (Closed) Unresolved Item (URI) 50-443/2006-005-03, Testing of the Alternate Supply of Water to the Primary Component Cooling System

a. Inspection Scope

The inspectors completed review of Unresolved Item 50-443/2006-005-03, Testing of the alternate supply of water to the primary component cooling system, which was initiated after a review of CR 06-12990 related to the inability to establish alternate cooling to the lube oil coolers for the centrifugal charging pumps (CCPs) during the Fall 2006 outage. Specifically, the CR noted that alternate cooling from the demineralized water (DM) system could not initially be established to the "A" CCP; subsequently, the DM supply to the "B" CCP was tested as part of the extent of condition review and similar results were noted. Alternate cooling to both CCPs was eventually established after mechanical agitation of the associated discharge check valves. The issue was left unresolved until Seabrook completed the flow tests for the other sources of alternate cooling, and had completed the causal evaluation. For this inspection, the reviewed the final test results, the causal evaluation, and the accompanying corrective actions.

b. Findings

Introduction: The inspectors identified a finding of very low safety significance (Green) in that Seabrook did not adequately evaluate and take corrective actions to ensure the ability of alternate cooling water sources to provide cooling to the CCP lube oil coolers.

Description: The primary component cooling water (PCCW) system is the normal cooling supply for safety-related components, including the CCP lube oil coolers. In 1999, Seabrook completed a design change to provide addition cooling sources for the CCP lube oil coolers. The Seabrook Updated Final Safety Analysis Report (UFSAR), Section 9.2.2 was revised and states that for increased reliability the DM system and the fire protection (FP) systems can be cross-connected to the PCCW system to make up for leaks from the PCCW system and to specifically provide cooling to the CCP lube oil coolers. Following a seismic event, the cross-connect is backed up by the seismic Category I SW system, using the seismic qualified portion of the FP system.

In October 2006, the DM portion of the alternate cooling system failed to function. Seabrook concluded that the cause was rust buildup on the discharge check valves which prevented the valves from opening. Failure of these check valves prevents alternate cooling of the CCP lube oil coolers from the SW and FP systems. Therefore, the alternate cooling system could not perform its USFAR described function.

Seabrook had opportunities to identify and correct this degraded condition. In 2004, CR 04-04715 identified that the cross-connect valve between the SW and FP systems (SW-V-120) had never been cycled to determine whether the valve would operate in an emergency situation. The corrective action for this CR was narrow and only focused on operation of the valve instead of verifying the flow path. In 2005, the inspectors raised

questions about the need to periodically test the alternate cooling system to the charging pumps. Seabrook initiated a CR (05-11694) and determined that testing was unnecessary based, in part, on the fact that the cross-connect was not safety-related and that the DM valves (the first choice for alternate cooling) had very little chance of corrosion since they were stainless steel and the medium was demineralized water. The inspectors determined that the evaluation was narrowly focused because it did not fully evaluate the need to test the UFSAR described function of the alternate cooling system.

In response to the October 2006 failure and additional inspectors concerns, Seabrook repaired the discharge check valves and completed tests demonstrating the functionality of the alternate cooling flow paths from the SW system to the "A" and "B" CCP lube oil coolers. In addition to the corrective actions already described, Seabrook plans to develop a surveillance procedure to routinely test the alternate cooling flow paths and to review design changes over the last three years to identify any similar conditions that require a routine surveillance.

Seabrook's corrective program in Operating Experience Manual (OE) 2.1, "Overview of the Corrective Action Program," Revision 58 states that unexpected or unwanted conditions shall be analyzed and evaluated to identify, understand and correct latent conditions that are precursors of significant conditions that would affect safety and reliability. The performance deficiency is that Seabrook failed to adequately evaluate and take corrective actions in accordance with their program requirements to prevent the unavailability of the alternate cooling water system. Specifically, Seabrook did not properly evaluate and implement adequate actions following initiation of CRs (CR 04-04715 and CR 05-11694) which documented concerns with the testing and ability of the alternate cooling water system to provide cooling to the CCP lube oil coolers.

Analysis: This finding was more than minor because it affected the Mitigating Systems cornerstone attribute of equipment performance and the objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences.

This issue was determined to be of very low safety significance per Inspection Manual Chapter (IMC) 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations (SDP). The inspectors conducted a SDP phase 2 evaluation because the phase 1 screening determined the finding represented a loss of alternate cooling to the CCP lube oil coolers. This loss of alternate cooling would prevent CCP operation in the high pressure coolant injection mode in the event of a loss of PCCW or service water. A NRC Region 1 senior reactor analyst (SRA) conducted a SDP phase 3 analysis because the phase 2 evaluation determined the finding could be significant. The Region I Senior Reactor Analyst (SRA) conducted a Phase 3 analysis because the Phase 2 analysis indicated that the finding could be significant.

The SRA's phase 3 analysis determined that the success criteria used to develop the Phase 2 notebook was based on the licensee's PRA model. That model assumed that

Enclosure

a complete loss of PCCW or SW resulted in a probability of a reactor coolant pump (RCP) seal loss of coolant accident (LOCA), with magnitudes ranging from small (84 gpm), to medium (728 gpm), or to large (1920 gpm). The licensee's model and the Phase 2 notebook assumed core damage could be prevented within 24 hours for small and some medium RCP seal LOCAs, if alternate cooling was supplied and a charging pump started, without recovery of the PCC or SW. The Phase 2 notebook success criterion was different from the NRC's Seabrook Standardized Plant Analysis Review (SPAR) model criteria. The SPAR model would not allow success unless PCC or SW were recovered, to allow long term decay heat removal through high pressure recirculation. As such the alternate cooling was not included in the SPAR model. Based on this review, the SRA determined that this issue was of very low safety significance (Green) because, based on the Seabrook SPAR model success criteria, the inability to implement alternate cooling would not have increased the chance of core damage.

The finding has a cross-cutting aspect in the area of problem identification and resolution because Seabrook did not properly evaluate a known deficiency associated with the alternate cooling water system. Specifically, Seabrook did not perform confirmatory tests or develop an engineering basis for acceptability of the system following initiation of CRs 04-04715 and CR 05-11694 which documented concerns with the testing and ability of the alternate cooling water system to provide cooling to the CCP lube oil coolers.

Because this finding does not involve a violation of regulatory requirements and has very low safety significance, it is identified as **FIN 05000443/2007002-01, Inadequate Evaluation of a Deficiency with the Alternate Cooling Water System to the Charging Pumps.**

Enforcement: This performance deficiency did not violate NRC regulations because the alternate cooling system is not safety-related. Consequently, enforcement action does not apply. This finding was of very low safety significance (Green) and has been entered into the Seabrook corrective action program (CR 06-15112).

.3 Access Controls and ALARA Planning and Controls

a. Inspection Scope

The inspectors reviewed the items listed below to evaluate the threshold for identifying, evaluating, and resolving radiological issues. This review was conducted against the criteria contained in 10 CFR 20, Technical Specifications, and the licensee's procedures.

- 13 CRs related to access control to radiologically significant areas.
- 5 CRs related to ALARA program implementation.
- 2 nuclear oversight department quality reports.

Enclosure

- nuclear oversight daily quality summary reports generated between October 1, 2006 and March 5, 2007.
- a dosimetry abnormality occurrence.

b. Findings

No findings of significance were identified.

.4 Security Equipment

a. Inspection Scope (71152 - 1 Sample)

The inspectors reviewed the actions taken by Seabrook to identify the cause(s) and effects of several issues on a portion of the assessment system that have been occurring since installation in October of 2005. The majority of the issues have been associated with the use of a specific feature of the system. The inspectors reviewed various condition reports, site operating procedures and the most recent system testing results to assess if corrective actions were taken and/or planned to correct identified problems. Additionally, the inspectors conducted interviews with plant personnel, including security, instrumentation and control, and engineering, and walked down the system in the impacted locations. The inspectors reviewed logs and the nuisance rate data for the 23 day period of February 12, 2007, through March 6, 2007. Finally, the inspectors reviewed additional condition reports written by Seabrook before and during the inspection to ensure they adequately captured the problems identified.

b. Findings and Observations

No findings of significance were identified. The licensee has assigned a designated system engineer to lead a system optimization team. The system has undergone extensive evaluation, and adjustments to compensate for environmental impacts, and this has provided some positive results. The optimization team has also engaged vendor technician support to assist in system optimization. Finally a procedure has been developed to assist in decision making by the system end users during periods of elevated nuisance rates. The inspectors determined that the root cause evaluation and corrective actions were appropriate.

4OA3 Event Follow-Up (71153 - 3 Samples)

.1 Reactor Down Power to 18%

a. Inspection Scope

As reported above in section 1R01, Adverse Weather Protection, on January 25, 2007, operators reduced reactor power to less than 18 percent power and maintained it between 16 and 18 percent power to allow the turbine to be taken offline. This was done to facilitate repairs to Zone 4 of the switchyard while ensuring worker safety. The inspectors observed the operators' preparations for the downpower, the reduction in

Enclosure

power, taking the turbine-generator offline, synchronizing the turbine-generator to the electric grid, and the return to full power. The inspectors verified that all plant power changes were completed in accordance with Seabrook procedures. The following documents were reviewed:

- OS1000.06, "Power Decrease," Revision 06.
- ON1031.03, "Turbine Generator Shutdown," Revision 05.
- ON1031.02, "Starting and Phasing the Turbine Generator," Revision 06.
- OS1000.05, "Power Increase," Revision 06.

b. Findings

No findings of significance were identified.

.2 (Closed) LER 05000443/2006006-00 and LER 05000443/2006006-01, Plant Shutdown Due to Inoperable Diesel Generators

The inoperable emergency diesel generators were previously reviewed and documented in NRC Inspection Report 0500443/2006016 as a non-cited violation of very low safety significance (Green). The inspectors reviewed the accuracy of the licensee event reports (LERs) 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. These LERs are closed.

4OA5 Other Activities

Independent Spent Fuel Storage Installation Inspection

a. Inspection Scope (60853)

The inspectors reviewed engineering design documents and supporting calculations associated with the design and construction of the Seabrook Independent Spent Fuel Storage Installation (ISFSI) pad. The inspectors discussed design specifications with cognizant personnel and the basis for various design parameters. The inspectors verified that the design and construction details for the ISFSI pad are bounded by the design parameters for the dry cask storage system selected for use at Seabrook.

b. Findings

No findings of significance were identified.

4OA6 Meetings, including Exit

Exit Meeting Summary

The inspectors presented the inspection results to Mr. G. St. Pierre on April 10, 2007, following the conclusion of the period. The licensee acknowledged the findings presented. None of the information reviewed by the s was considered proprietary.

Site Management Visit

On March 29, 2007, Ms. Marsha Gamberoni, Deputy Director, Division of Reactor Safety, toured the site and met with Mr. Gene St. Pierre and other members of licensee management.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

SUPPLEMENTAL INFORMATION**KEY POINTS OF CONTACT**Licensee personnel:

P. Allen, Senior Health Physics Technician
 K. Axelson, Project Engineer, Projects
 M Bianco, Supervisor, Radiological Waste Services
 B. Buerger, Project Manager, Projects
 R. Campione, Nuclear Oversight Evaluator
 D. Carlino, Special Projects Coordinator, Mechanical Maintenance
 M. Debay, Nuclear Oversight Manager
 D. Flahardy, Radiation Protection supervisor
 P. Freeman, Engineering Director
 D. Hampton, Health Physics Shift Supervisor
 G. Kahn, Project Engineer, Engineering
 M. Kiley, Station Director
 T. Lehmann, Project Lead, Projects
 M. Makowicz, Plant Engineering Manager
 M. O'Keefe, Regulatory Compliance Supervisor
 J. Peschel, Regulatory Programs Manager
 B. Plummer, Contractor, Projects
 D. Ritter, Operations Manager
 V. Robertson, Senior Nuclear Analyst, Regulatory Compliance
 M. Scannell, Health Physics Shift Supervisor - Nuclear
 D. Sherwin, Maintenance Manager
 T. Smith, Health Physics Specialist
 E. Spader, Supervisor LOR Training Requal.
 R. Sterritt, Health Physics Specialist - Nuclear
 G. St. Pierre, Site Vice President
 R. Thurlow, Radiation Protection Manager
 J. Tucker, Security Manager

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSEDClosed:

05000443/2006006-00	LER	Plant Shutdown Due to Inoperable Diesel Generators. (Section 4OA3.2)
05000443/2006006-01	LER	Plant Shutdown Due to Inoperable Diesel Generators. (Section 4OA3.2)
05000443/2006005-03	URI	Testing of the Alternate Supply of Water to the Primary Component Cooling System (Section 4OA2.2)

Opened and Closed:

05000443/2007002-01 FIN Inadequate Evaluation of a Deficiency with the Alternate Cooling Water System to the Charging Pumps. (Section 4OA2.2)

LIST OF DOCUMENTS REVIEWED

Section 1R04: Equipment Alignment

Procedures:

ON1034.02-“Condensate and Feedwater System Fill And Vent,” Revision 7

Piping and Instrument Drawings (P&ID):

PID-1-MS-B20579, PID-1-MS-B20583, PID-1-MS-B20582, PID-1-MS-B20580, PID-1-MS-B20584, PID-1-FW-B20687, PID-1-FW-B20686, PID-1-FW-B20684

Section 1R05: Fire Protection

Procedures:

Prefire Strategies for Zones CB-F-1A-A, CB-F-1B-A, ET-F-1A-A, ET-F-1B-A, ET-1C-A, ET-F-1D-A, RHR-F-1B,1D,4B-Z, RHR-F-1A, 1C, 4B-Z, RHR-F-1B. 2B, 4B-Z, RHR-F-1A, 2A, 4A-Z, MS-F-1A-Z, MS-F-4A-Z, MS-F-1B-Z, MS-F-2B-Z, and TB-F-1C-Z.

Section 1R06: Flood Protection

Documents:

WOs 0204301, 97C8323, 92E0068 Five year inspections of revetments
ES0802.001, “Revetment Surveillance Program,” Revision 2

Section 1R11: Licensed Operator Requalification Program

Procedures:

E-0, “Reactor Trip or Safety Injection,” Revision 44
OS1210.03, “Continuous Control Rod Insertion,” Revision 10
OS1211.04, “Power Range NI Instrument Failure,” Revision 12
ES-0.1, “Reactor Trip Response,” Revision 33

Section 1R13: Maintenance Risk Assessments and Emergent Work Evaluation

1-NHY-350022, "Panel Failure Analysis," Revision 26
1-NHY-310106, "120/240 Distribution Panel Schedule 460V MCC 1-E512," Sheet 96
OS0443.85, "Fire Protection Fire Panel Alternate Power," Revision 1

Section 1R20: Refueling and Outage Activities

OS1000.06, "Power Decrease," Revision 6
OS1000.03, "Plant Shutdown from Minimum Load to Hot Standby," Revision 5
ON1031.03, "Turbine Generator Shutdown," Revision 5
ON1035.11, "Main Feed Pump Return to Standby and Shutdown," Revision 7

Section 2OS1: Access Control to Radiologically Significant Areas

Procedures:

HD0958.03, "Personnel Survey and Decontamination Techniques," Revision 23
HN0958.13, "Generation and Control of Radiation Work Permits," Revision 26
HD0958.17, "Performance of Routine Radiological Surveys," Revision 12
HD0958.19, "Evaluation of Dosimetry Abnormalities," Revision 27
HN0958.25, "High Radiation Area Controls," Revision 26
HD0958.30, "Inventory and Control of Locked or Very High Radiation Area Keys and Locksets,"
Revision 23
HD0958.51, "Health Physics Issuance of Stop Work Orders," Revision 00
HD0992.02, "Issuance and Control of Personnel Monitoring Devices," Revision 28
HN0958.30, "Inventory and Control of Locked or Very High Radiation Area Keys and Locksets,"
Revision 23
HN0958.39, "Multi-Badge Control & Exposure Tracking," Revision 04
RP 2.1, "General Radiation Worker Instruction and Responsibilities," Revision 18
RP 3.1, "Radiological Qualification Requirements," Revision 18
RP 4.1, "Requirements for Issuing Personnel Dosimetry," Revision 19
RP 5.1, "Annual Occupational Exposure Control and Increased Radiation Exposure Approval."
Revision 16
RP 9.1, "RCA Access/Egress Requirements," Revision 21
RP 13.1, "Radiological Controls for Materials," Revision 20
RP 13.2, "Storage of Highly Radioactive Material in the Reactor Cavity or Spent Fuel Pool,"
Revision 05
RP 15.1, "Job Pre-Planning and Review for Radiation Exposure Control," Revision 18
RP 15.2, "ALARA Recommendations," Revision 09
ON 1090.04, "Containment Entry," Revision 03

Quality Assurance Reports:

Daily Quality Summary Reports for the period
Radiation Protection/ Process Control,/RadWaste Programs Audit (SBK-06-02)

Condition Reports:

Access Controls: 06-11254, 06-11993, 06-14698, 06-14203, 06-12055, 06-13228, 06-15488, 06-15493, 06-16181, 07-00798, 07-01510, 07-02094, 07-02719

ALARA: 06-13602, 06-15044, 06-12071, 06-13389, 07-02416

ALARA Evaluations:

Isolation valve stem leakoff valves and inspect drain header tailpiece in PAB demin alley

Visitor tours of radiological controlled areas

Inspecto Letdown valve room for leakage

Perform underwater surveys in spent fuel pool

Root Cause Evaluation for CR 06-12071, Cavity Flood-up Airborne event

Common Cause Evaluation for CR-12055, OR-11 personnel contaminations

Miscellaneous:

Radiation Protection Department Continuous Improvement Initiative, December 2006

Plan-Of-The-Day Report, 03/05/2007

Work Scheduled for the week of 03/05/2007 requiring Health Physics Support

Cycle 11 ALARA Report

Section 40A2: Identification and Resolution of Problems

Condition Reports:

CR 06-15112

Work Orders:

WO 0641537, Demonstrate the Functionality of the Alternate Cooling Flow Path from the FP System to Train "A" Charging Pump Oil Cooler

WO 0641538, Demonstrate the Functionality of the Alternate Cooling Flow Path from the FP System to Train "B" Charging Pump Oil Cooler

WO 0641539, Demonstrate the Functionality of FP-V-1129 (FP Isolation valve to Charging Pump Oil Coolers)

WO 0641541, Verify the Functionality of the Flow Path from the Booster Pump (FP-P-374) to the FP Header

WO 0641545, Disassemble and Inspect CC-V-1289

WO 0641546, Disassemble and Inspect CC-V-1295

Procedures:

ON0443.50, Fire Protection System Non-Safety Related Annual Valve Cycle Test, Revision 6

OS0043.15, Fire Protection Booster Pump FP-P-374 Operations, Revision 0

OS0443.108, Fire Protection Booster Pump 18 Month Operability Test, Revision 0

OS1002.02, Operations of Letdown, Charging and Seal Injection, Revision 14

OS1012.03, Primary Component Cooling Water Loop A Operation, Revision 13

OS1012.04, Primary Component Cooling Water Loop B Operation, Revision 11

OS1212.01, PCCW System Malfunction, Revision 10

System Prints (P&IDs):

- 1-CC-B20205, Primary Component Cooling Loop A Detail, Revision 24
- 1-CC-B20211, Primary Component Cooling Loop B Detail, Revision 17
- 1-DM-B20350, Demineralized Water Distribution System Primary Auxiliary Building, Revision 16
- 1-FP-B20268, Fire Protection Standpipe Detail, Revision 15

Miscellaneous:

- DCR 96-025, Alternate Cooling for Charging Pump Lube Oil Coolers, DCN 03
- NRC IN 93-92, Plant Improvements to Mitigate Common Dependencies in Component Cooling Water Systems
- NRC IN 98-25, Loss of Inventory from Safety-Related, Closed Loop Cooling Water System Seabrook UFSAR, Section 9.2, Water Systems, Revision 8
- Seabrook Station Probabilistic Safety Study, 2006 Update, Section 11.0, Human Action Analysis

Section 40A5: Other Activities

Documents:

- Calculation No. 011-CALC-004, Seabrook DFS [Dry Fuel Storage] Facility - Concrete Fill Design Requirements, Revision 0
- Calculation No. 011-CALC-005, Seabrook DFS Facility - Concrete Storage Pad Design, Revision 0
- Calculation No. 011-CALC-006, Seabrook DFS Facility - Concrete Apron Design, Revision 0
- Specification # S-X-1-E-0158, Dry Fuel Storage Grading and Drainage Specification, Revision 0
- Specification # S-X-1-E-0159, Dry Fuel Storage Earthwork Specification, Revision 0
- Specification # S-X-1-E-0160, Dry Fuel Storage Erosion and Sedimentation Controls Specification, Revision 0
- Specification # S-X-1-E-0161, Dry Fuel Storage Concrete Construction Specification, Revision 0
- MMOD # 06MMOD502 DCN # 00 Seabrook Dry Fuel Storage Pad and Apron
- MMOD # 06MMOD505 DCN # 00 Seabrook Dry Fuel Storage Grading and Drainage
- NUHOMS HD System Safety Analysis Report Appendix 3.9.9. HSM-H Structural Analysis, Revision 0

LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
AE	ALARA Evaluations
ALARA	as low as is reasonable achievable
AR	ALARA
CCP	Centrifugal Charging Pump
CEDE	Committed Effective Dose Equivalent
CR	Condition Report
DCR	Design Change Request
DM	Demineralized Water
DPW	Declared Pregnant Workers
DRPI	Digital Rod Position Indication

EDG	Emergency Diesel Generator
EFW	Emergency Feedwater
FP	Fire Protection
HRA	High Radiation Area
IMC	Inspection Manual Chapter
LER	Licensee Event Report
LOCA	Loss of Coolant Accident
LHRA	Locked High Radiation Area
MC	Manual Chapter
MCC	Motor Control Center
MPFF	Maintenance Preventable Functional Failure
MR	Maintenance Rule
MSE	Maintenance Support Evaluations
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
OE	Operating Experience Manual
PAB	Primary Auxiliary Building
PARS	Publicly Available Records
PCCW	Primary Component Cooling Water
PI	Performance Indicator
PMT	Post Maintenance
PRT	Pressurizer Relief Tank
psig	pounds per square inch gage
PZ	Pressurizer
RCA	Radiologically Controlled Area
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RO	Reactor Operator
SDE	Shallow Dose Equivalent
SDP	Significance Determination Process
SEPS	Supplemental Emergency Power System
SFSI	Spent Fuel Storage installation
SG	Steam Generator
SPAR	Standardized Plant Analysis Review
SRA	Senior Reactor Analyst
SSC	Structure, System, or Component
SSPS	Solid State Protection System
SW	Service Water
TEDE	Total Effective Dose Equivalent
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
VHRA	Very High Radiation Area
WPB	Waste Processing Guilding