



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

February 14, 2011

Mr. Paul Freeman
Site Vice President
Seabrook Nuclear Power Plant
NextEra Energy Seabrook, LLC
c/o Mr. Michael O'Keefe
P.O. Box 300
Seabrook, NH 03874

SUBJECT: SEABROOK STATION, UNIT NO. 1 - NRC INTEGRATED INSPECTION
REPORT 05000443/2010005

Dear Mr. Freeman:

On December 31, 2010, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at Seabrook Station, Unit No. 1. The enclosed report documents the inspection findings discussed on January 6, 2011, with you and other members of your staff.

These inspections 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 a licensee-identified violation that was determined to be of very low safety significance. However, because of the very low safety significance and because the issue was entered into your corrective action program, the NRC is treating the finding as a non-cited violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy.

If you contest any NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Seabrook Station. In addition, if you disagree with the characterization of any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region I, and the NRC Resident Inspector at the Seabrook Station. The information you provide will be considered in accordance with Inspection Manual Chapter 0305.

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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Sincerely,

A handwritten signature in black ink, appearing to read 'Arthur L. Burritt', with a long horizontal flourish extending to the right.

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

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

Enclosure: Inspection Report No. 05000443/2010005
w/ Attachment: Supplemental Information

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

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U. S. NUCLEAR REGULATORY COMMISSION**REGION I**

Docket No.: 50-443

License No.: NPF-86

Report No.: 05000443/2010005

Licensee: NextEra Energy Seabrook, LLC

Facility: Seabrook Station, Unit No.1

Location: Seabrook, New Hampshire 03874

Dates: October 1, 2010 through December 31, 2010

Inspectors: W. Raymond, Senior Resident Inspector
J. Johnson, Resident Inspector
B. Traynham, Engineer
T. Moslak, Senior Health Physicist
E. H. Gray, Senior Reactor Inspector
J. DeBoer, Reactor Inspector
A. Turilin, Project Engineer
D. Silk, Senior Operations Engineer

Approved by: Arthur Burritt, Chief
Projects Branch 3
Division of Reactor Projects

Enclosure

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SUMMARY OF FINDINGS

IR 05000443/2010005; 10/01/2010-12/31/2010; Seabrook Station, Unit No. 1; Routine Integrated Report.

The report covers a three-month period of inspection by resident and regional specialist inspectors. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

Other Findings

Violations of very low safety significance, which were identified by NextEra, have been reviewed by the inspectors. Corrective actions taken or planned by NextEra have been entered into NextEra's corrective action program. The violations and the corrective action tracking number are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Seabrook operated at full power for the period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

IR01 Adverse Weather Preparation (71111.01 – 1 sample)

.1 Readiness for Seasonal Extreme Weather Conditions

a. Inspection Scope

The inspectors completed one seasonal extreme weather condition inspection sample. The inspectors reviewed the NextEra readiness for the onset of cold weather conditions. The inspectors reviewed Seabrook's updated final safety analysis report (UFSAR) regarding design features, and verified the adequacy of the station procedures for adverse weather protection. The inspectors reviewed NextEra actions per procedure ON1490.06 for winter readiness and procedure OS1200.03 for severe weather. The inspectors also conducted walkdowns of susceptible systems, specifically feedwater / emergency feedwater, service water, and various electrical systems. The inspectors reviewed previously identified deficiencies related to extreme weather preparation and verified that the issues were appropriately dispositioned through the corrective action program. The documents reviewed for this inspection are listed in the Attachment.

Findings

b. No findings were identified.

IR04 Equipment Alignment (71111.04 – 3 samples)

.1 Partial Walkdown

a. Inspection Scope

The inspectors completed three partial system walk down inspection samples for the plant systems listed below. The inspectors verified that valves, switches, and breakers were correctly aligned in accordance with Seabrook's procedures and that conditions that could affect system operability were appropriately addressed. The inspectors reviewed applicable piping and instrumentation drawings and system operational lineup procedures. The documents reviewed are listed in the Attachment.

- The A EDG and associated support systems during the planned operability run of the B EDG on October 25, 2010.
- The electrical alignment of the standby diesel generators and the 345KV electrical system during crane work in the switchyard from November 1 – 23, 2010.

- A train safety injection during surveillance of the B train safety injection system on November 10, 2010.

b. Findings

No findings were identified.

IR05 Fire Protection (71111.05Q - 3 samples)

.1 Quarterly Review of Fire Areas:

a. Inspection Scope

The inspectors completed three quarterly fire protection inspection samples. The inspectors examined the areas of the plant listed below to assess: the control of transient combustibles and ignition sources; the operational status and material condition of the fire detection, fire suppression, and manual firefighting equipment; the material condition of the passive fire protection features; and the compensatory measures for out-of-service or degraded fire protection equipment. The inspectors verified that the fire areas were maintained in accordance with applicable portions of Fire Protection Pre-Fire Strategies and Fire Hazard Analysis. The documents reviewed are listed in the Attachment.

- PAB-F-1C-A (Primary Auxiliary Building (PAB) 7 foot)
- RHR-F-3B-Z (RHR Vault A, -31 foot), RHR-F-4B-Z (RHR Vault A, 20 foot), RHR-F-4A-Z2 (RHR Vault B, 20 foot)
- MS-F-1A-Z (Main Steam / Feed Enclosure East 3, 7, & 27 ft)

b. Findings

No findings were identified.

IR11 Licensed Operator Requalification Program (71111.11Q - 1 sample)

.1 Quarterly Resident Inspector Review

a. Inspection Scope

The inspectors completed one quarterly licensed operator requalification program inspection sample. The inspectors reviewed operator actions to implement the abnormal and emergency operating procedures on October 5 and 12, 2010. The inspectors examined the operators capability 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 and reviewed the training evaluator's critique of operator performance and verified that deficiencies were adequately identified, discussed, and entered into the corrective action program. The inspectors reviewed the simulator's physical fidelity in order to verify similarities between the Seabrook control room and the simulator. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2 Annual Review of Licensed Operator Exam Results

a. Inspection Scope

On January 3, 2011, one NRC region-based inspector conducted an in-office review of results of licensee-administered annual operating tests for 2010. 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 inspector verified that:

- Crew failure rate was less than 20 percent. (The crew failure rate was 0.0 percent.)
- Individual failure rate on the dynamic simulator test was less than or equal to 20 percent. (The individual failure rate was 0.0 percent.)
- Individual failure rate on the walk-through test was less than or equal to 20 percent. (The individual failure rate was 0.0 percent.)
- Individual failure rate on the comprehensive written exam was less than or equal to 20 percent. (The comprehensive written exam was administered in 2009. The Individual failure rate was 0.0 percent.)
- Overall pass rate among individuals for all portions of the exam was greater than or equal to 75 percent. (The overall pass rate was 100 percent.)

b. Findings

No findings were identified.

IR12 Maintenance Effectiveness (71111.12Q - 2 samples)

a. Inspection Scope

The inspectors completed two maintenance effectiveness inspection samples. The inspectors reviewed performance-based problems and completed performance and condition history reviews for the selected in-scope structures, systems or components (SSCs) listed below to assess the effectiveness of the maintenance program. Reviews focused on: proper Maintenance Rule (MR) scoping in accordance with 10 CFR 50.65; characterization of reliability issues; tracking system and component unavailability; 10 CFR 50.65 (a)(1) and (a)(2) classifications; identifying and addressing common cause failures, trending key parameters, and the appropriateness of performance criteria for SSCs classified (a)(2) as well as the adequacy of goals and corrective actions for SSCs classified (a)(1). For the periodic assessment inspection sample, the inspectors reviewed the assessment frequency, the performance criteria, the use of operating experience and corrective actions. The inspectors reviewed system health reports, maintenance backlogs, and MR basis documents. The documents reviewed are listed in the Attachment.

- Enclosure building air handling (EAH) system classified as Maintenance Rule (a)(2) with a focus on component aging and degradation due to exposure to environmental contaminants (AR 585376)
- Seismic Category I Structures classified as Maintenance Rule (a)(2) with a focus on

the structures monitoring program completed per Engineering Procedure PEG04 and ED36180 (ARs 574120, 581434 and 199563)

b. Findings

No findings were identified.

IR13 Maintenance Risk Assessments and Emergent Work Control (71111.13 - 5 samples)

a. Inspection Scope

The inspectors completed five maintenance risk assessment and emergent work control inspection samples. The inspectors reviewed the scheduling and control of planned and emergent work activities in order to evaluate the effect on plant risk. The inspectors conducted interviews with operators, risk analysts, maintenance technicians, and engineers to assess their knowledge of the risk associated with the work, and to ensure that other equipment was properly protected. The inspectors reviewed the availability of opposite train guarded and protected equipment. 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", as applicable. The documents reviewed are listed in the Attachment. The inspectors reviewed the maintenance items listed below.

- Planned work associated with 45 kV line 363 combined with emergent work associated with main generator step up transformer C phase ground on October 31, 2010 (WO 1186699).
- Planned modification associated with work in the 345 kV switchyard during the period of November 1-18, 2010 (WO 40040244).
- Emergent maintenance and testing associated with the enclosure air handling filter EAH-F-69 on October 3, 2010 (WO 40045424).
- Planned work associated with EFW and RHR maintenance on October 26 and 27, 2010 (WO 1209780 and WO 1209759).
- Planned work associated with the cross tie of unit sub 51 and 52 on November 2 – 3, 2010 (WO 11988190 / 1198186).

c. Findings

No findings were identified.

IR15 Operability Evaluations (71111.15 - 4 samples)

a. Inspection Scope

The inspectors completed four operability evaluation inspection samples. The inspectors reviewed operability evaluations and condition reports to verify that identified conditions did not adversely affect safety system operability or overall 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 that TS limiting condition for operation implications were properly addressed. The documents reviewed are listed in the Attachment. The inspectors also performed field walk downs and interviewed personnel involved in identifying, evaluating or correcting the identified conditions. The following items were reviewed:

- CR 583804, operability of the service water cooling tower A train during extended period of operation without a freeze protection circuit, October 7, 2010.
- CR 585696, operability of the startup feedwater pump as part of the auxiliary feedwater system with the suction pipe from the condensate storage tank below code allowable minimum wall thickness, October 8, 2010.
- CR 584192, past operability of the enclosure air handling system with a degraded filter EAH-F69 and exposure to volatile organic compounds, October 29, 2010.
- CR 579900, operability of emergency feed water pump P37A with seat leakage past steam supply isolation valve MS-V393, October 1, 2010.

b. Findings

No findings were identified.

IR18 Plant Modifications (71111.18 - 1 sample)

.1 Temporary Modification – SY Phase 2 Hi Pot Bushings

a. Inspection Scope

The inspectors completed one temporary modification inspection sample. The inspectors reviewed modification package EC145280 (CRN-003) that installed Hi Pot bushings and supports as part of the 345 kV electrical switchyard phase 2 reliability upgrade. The inspectors reviewed the engineering bases supporting the new configuration and verified the configuration was accurately reflected in plant documentation. The inspectors verified that post-modification testing was adequate to ensure the SSCs would function properly. The inspectors interviewed plant staff, and reviewed issues entered into the corrective action program to verify that NextEra was effective at identifying and resolving problems associated with temporary modifications (reference CR 596384). The 10 CFR 50.59 evaluation associated with this temporary modification was also reviewed. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

IR19 Post-Maintenance Testing (71111.19 - 4 samples)**a. Inspection Scope**

The inspectors completed four post-maintenance testing (PMT) inspection samples. The inspectors observed portions of PMT activities in the field to verify the tests were performed in accordance with the approved procedures. The inspectors assessed the test adequacy by comparing the test methodology to the scope of the maintenance work performed. The inspectors evaluated the test acceptance criteria to verify that the test procedure ensured that the affected systems and components satisfied applicable design, licensing bases and TS requirements. The inspectors also reviewed recorded test data to confirm all acceptance criteria were satisfied during testing. The documents reviewed are listed in the Attachment. The activities reviewed are listed below:

- Retest of the boric acid transfer pump on October 26, 2010, following replacement of the pump per WO 400473964.
- Retest of steam generator blowdown valve 1-SB-V-11 on November 9, 2010, following replacement of 1-SB-FY-1902-B (solenoid for 1-SB-V-11) per WO 1186626.
- Retest of atmospheric steam dump valve MS-PV-3001 following maintenance on 12-13, 2010, per WO 1382208.
- Retest of steam generator blowdown valve 1-SB-V-10 on December 16, 2010, following maintenance per WO 1186627.

b. Findings

No findings were identified.

IR22 Surveillance Testing (71111.22 – 5 samples)**a. Inspection Scope**

The inspectors completed five surveillance testing inspection samples. The inspectors observed portions of surveillance testing activities for 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 TS and surveillance procedures. The inspectors attended selected pre-evolution briefings, performed system and control room walk downs, 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 TS requirements, and to prior tests to identify any adverse trends. The documents reviewed are listed in the Attachment. The following surveillance activities were reviewed:

- OX1436.08, Startup Feed Pump Quarterly Surveillance, Revision 12, October 19, 2010 (WO 01209404);
- OX1456.01, Charging Pump A & B Quarterly Flow And Valve Stroke Test And 18 Month Remote Position Indication Verification, Revision 11, October 27, 2010 (WO 01209780);

- OX 1410.02, Quarterly Rod Operability Surveillance on November 12, 2010 (WO 1210792);
- RX 0720.0, Spent Fuel Pool Criticality Surveillance on November 18, 2010 (WO 01192002); and
- OX 1405.07, Safety Injection Quarterly and 18 Month Pump Flow and Valve Test on November 10, 2010 (WO 1210738).

The inspectors reviewed deficiencies related to surveillance testing and verified that the issues were entered into the corrective action program. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstones: Occupational and Public Radiation Safety

2RS05 Radiation Monitoring Instrumentation (71124.05 – 1 sample)

a. Inspection Scope

During the period November 1-4, 2010, the inspectors conducted the following activities to evaluate the operability and accuracy of radiation monitoring instrumentation used to ensure a safe work environment, and to detect and quantify radioactive process streams and effluent releases. Implementation of these programs was compared to the criteria contained in 10 CFR 20, applicable industry standards, and NextEra's procedures.

Walkdown of Process and Effluent Monitoring Systems

The inspectors, with the assistance of a plant systems engineer, walked down selected portions of the, area, liquid and gaseous monitoring systems to assess material condition and the status of system upgrades. The walk-down included portions of the containment air monitor (RM-6529), reactor coolant system (RCS) letdown monitor (RM-6520), 7'-PAB area monitor (RM-6541), steam generator blowdown monitors (RM-6510/11/12/13), plant vent monitor (RM-6528), 25'-PAB air monitor (RM-SKD-162), and storm drain monitor (RM-6454),

Calibration of Portable Survey Instruments, Area Monitors, Electronic Dosimeters and Air Samplers.

The inspectors reviewed the operating procedures, calibration reports, and current source activities/dose rate characterizations for the in-service Shepard Model 81-12 calibrator (No. 7015), used for calibrating survey instruments and electronic dosimeters. The inspectors also reviewed the calibration cross check records for the Shepard Model 89 irradiator used for performing source checks on high range survey instruments.

The inspectors reviewed the calibration records for selected survey meters, electronic dosimeters, and contamination monitors including small article monitors (SAM 9A, SAM-12), personal contamination monitors (Argos 4A/B & SPM-906), portable instruments

(RM-14, ASP-2, telepole, Fluke -451, Ludlum 19), electronic dosimeters (DMC-2000), and laboratory counting instruments (Tennelec XLB, Canberra S5APC).

The inspectors observed a technician performing an electronic calibration of a contamination monitoring instrument (R-14), and daily operational checks of various instruments including contamination monitors (SAM-9 & SAM-12, RM-14), various hand held survey instruments (Fluke Model 451P & 451B, Ludlum 19, ASP-2, MGP-1 Telepole, and Bicon MicroRem), personnel contamination monitors (ARGOS -4 A/B, SPM- 906), and counting room instruments (Ludlum-2200 alpha counter, Ludlum-12 air sample counter). The inspectors confirmed that procedural requirements were met and the instrument had the required accuracy.

During walkdowns in various plant areas, the inspectors confirmed that available monitoring instruments were calibrated, that daily source checks had been performed, and that the instruments were operational. Instruments checked included handheld survey instruments, electronic dosimeters, air monitors, and contamination monitors.

The inspectors reviewed contamination sampling results (10 CFR 61 radionuclide analyses) used to characterize difficult-to-measure radioisotopes, to determine if the calibration sources were representative of the radioisotopes found in the plant's source term. Whole body counting system records and contamination monitor set points were reviewed to determine if this data was incorporated in system setup to ensure that difficult-to-measure radioisotopes were accounted for when making measurements.

Laboratory Instrumentation:

The inspectors reviewed the calibration records, daily source checks and maintenance records for selected gamma spectroscopy systems (Detectors Nos. 1, 2, 3, 4, 5, 7, 8 and 9) and scintillation counters (Perkin-Elmer TriCarb 2700 and TriCarb 2910) to verify that the instruments were calibrated and properly maintained. The inspectors confirmed that the check sources used aligned with the plant's isotopic mix.

Whole Body Counters:

The inspectors reviewed the calibration, daily quality control data, and operating procedure for the FastScan whole body counting system. The inspectors determined that appropriate radioactive source phantoms were used in making calibrations and that calibration sources were representative of radioisotopes found in the plants' source term.

Plant Process and Post-Accident Monitoring Instrumentation

The inspectors reviewed the calibration records for the high range containment radiation monitors, (RM-6576 A/B), waste liquid discharge monitor (RM-6509), plant vent wide range monitor (RM-6528), incore seal table monitor (RM-6534), and control room rad monitor (RM-6550). The inspectors determined that the electronic and radiation source calibrations were appropriately conducted and that the alert and high alarm setpoints were properly established.

Problem Identification and Resolution:

The inspectors reviewed selected condition reports (CR), a Nuclear Quality Assessment audit, and field observation reports to evaluate NextEra's threshold for identifying, evaluating, and resolving problems in implementing the radiation monitoring instrumentation. Included in this review were CRs related to radiation worker and radiation protection technician errors to determine whether there was an observable error pattern in the maintenance or use of radiation instruments.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator Verification (71151 – 2 samples)

.1 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspectors reviewed implementation of NextEra's Occupational Exposure Control Effectiveness Performance Indicator (PI) Program. Specifically, the inspectors reviewed dosimetry abnormality occurrence reports, CRs, and associated documents, for occurrences involving locked high radiation areas, very high radiation areas, and unplanned exposures against the criteria specified in Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Performance Indicator Guideline, to verify that all occurrences that met the NEI criteria were identified and reported as performance indicators. The period covered in this review was October 2009 through October 2010. This inspection activity represented the completion of one (1) sample relative to this inspection area; completing the annual inspection requirement.

b. Findings

No findings were identified.

.2 RETS/ODCM Radiological Effluent Occurrences

a. Inspection Scope

The inspectors reviewed relevant effluent release reports for the period October 2009 through October 1, 2010, for issues related to the public radiation safety performance indicator as specified in NEI 99-02. The NEI criteria for this performance indicator includes radiological effluent release occurrences that exceed 1.5 mrem/qtr whole body or 5.0 mrem/qtr organ dose for liquid effluents; 5mrads/qtr gamma air dose, 10 mrad/qtr beta air dose, and 7.5 mrads/qtr for organ dose for gaseous effluents. This inspection activity represented the completion of one (1) sample relative to this inspection area; completing the annual inspection requirements.

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems (71152 – 3 samples)

.1 Review of Items Entered into the Corrective Action Program

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 corrective action program (CAP). This review was accomplished by accessing NextEra's computerized database. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2 Semi-annual Review to Identify Trends

a. Inspection Scope

As required by Inspection Procedure 71152, "Problem Identification and Resolution," the inspectors performed a semi-annual review of site issues to identify trends that might indicate the existence of more significant safety issues. The inspectors included in this review, repetitive or closely-related issues documented by NextEra outside of the corrective action program, such as trend reports, performance indicators, major equipment problem lists, system health reports, and maintenance or corrective action program backlogs. The inspectors also reviewed the Seabrook corrective action program database for the second and third quarters of 2010, to assess CRs written in various subject areas (equipment problems, human performance issues, etc.), as well as individual issues identified during the NRCs daily CR review (Section 4OA2.1). The inspectors also reviewed the NextEra quarterly trend report for the second quarter of 2010 to verify that NextEra was appropriately evaluating and trending adverse conditions in accordance with procedure PI-AA-207, "Trend Coding and Analysis."

b. Assessment and Observations

No findings of significance were identified. The inspectors did not identify any trends that NextEra had not identified. The inspectors reviewed the operations, maintenance and chemistry department inputs into the quarterly trend reports and a sample of issues and events that occurred over the past two quarters that were documented in the corrective action program. The inspectors verified that NextEra appropriately considered identified issues as emerging trends, and in some cases, verified the adequacy of the actions completed or planned to address the identified trends.

NextEra noted the need for continued focus on human performance. During meetings with station management in December 2010, the inspectors discussed recent NRC observations in the human performance area related to procedure adequacy, work practices and control of work [reference: Condition Reports (CR) 585992 (SW-P41D inoperable), and 584192 / 585376 (control of EAH during painting activities)]. NextEra has also documented an adverse trend in Operations department human performance

based on errors that occurred in the third quarter of 2010 (CR594198) and has initiated a common cause evaluation to review this trend. The issue in CR585992 is described further in Section 4OA7 below. The issue described in CR199563 also relates to Human Performance/resources regarding the adequacy of procedure implementation. NextEra continues to address site wide human performance concerns through procedure enhancement, reinforcement of human performance tools, procedure compliance, and the dynamic learning initiative in Maintenance, Operations, Chemistry and Radiation Protection.

.3 Annual Sample - Ground Water Protection

a. Inspection Scope

During the period December 6 – 9, 2010, the inspectors evaluated the effectiveness of the NextEra's corrective action program in response to the past identification of water, containing tritium, leaking through the wall liner of the cask loading area/transfer canal liner and its eventual migration into site ground water. Specifically, the inspectors reviewed all condition reports, contractor evaluations, self-assessments, NextEra procedures, and technical studies that were generated after the initiating event in 1999 to identify and repair the source of the leakage and to monitor and characterize the migration of the contaminated leakage into soil located within the site's protected area.

Background

In September 1999, elevated tritium concentrations were identified in ground water that was seeping into the containment annulus. NextEra interpreted this to indicate that tritium contaminated ground water, from an undetermined location, was leaking into the containment annulus. Subsequently, NextEra evaluated possible leak sources and determined that the cask loading area/transfer canal, adjacent to the Spent Fuel Pool (SFP) was leaking into the SFP tell tale drain collection lines, when the transfer canal was filled with water (in preparation for refueling activities). No leakage occurred when the transfer canal was drained. This intermittent leakage contaminated the surrounding concrete which resulted in diffusion of tritiated water into ground water beneath and adjacent to the Fuel Handling Building (FHB). The leakage was not directly to ground water, but to the interstitial space between the stainless steel SFP liner and the concrete building foundation, eventually diffusing through the concrete to the surrounding soil. To mitigate this leak, the interstitial space was drained and a coating was applied to the SFP liner to stop the leak.

From the initial identification of the leak to date, programmatic actions evolved to identify and stop the apparent source, control the in-leakage of groundwater into site buildings by using dewatering systems, monitor and trend ground water tritium concentrations, and expand the investigation to identify other potential tritium sources. Specific actions included establishing a project team to identify/repair the source, implement a ground water sampling program, retain an independent consultant to develop a ground water (hydrological) model to characterize ground water flow and tritium distribution/migration, and establish a Groundwater Protection Committee to monitor the overall program and make recommendations for additional actions.

Source Identification and Repairs

Following a series of tests, in which the cask loading area/transfer canal water level was correlated with leakage rate, NextEra determined that cracks in the transfer canal liner plate welds were the leakage pathway and that leakage only occurred when the transfer canal was filled with water (normally in preparation for transferring fuel assemblies). As corrective action, a protective coating was applied to the liner, which effectively stopped the leakage.

Following the 2009 refueling outage, the liner's coating was determined to be deteriorated; slumping of the coating was visually evident. However, no leakage was evident. The coating was replaced in the fall of 2010 and subsequent testing also indicated that no leakage was occurring.

Dewatering Systems

In addition to the liner repair activities, NextEra implemented a building dewatering program by regularly withdrawing ground water in the areas surrounding the fuel handling building, primary auxiliary building, and containment. Five dewatering locations were established including: 1) containment enclosure area, 2) primary auxiliary building, 3) emergency feed water pump house, 4) B- residual heat removal equipment vault, and 5) B-electrical tunnel. Through controlled dewatering at these five points, NextEra systematically monitored and removed tritium contaminated ground water that migrated into subsurface regions adjacent to building foundations. By measuring tritium concentrations and the quantities of the water discharged to the storm drain system, NextEra established a controlled, monitored discharge pathway to assess the tritium released.

Ground Water Sampling Program

The ground water sampling program is a proactive program that has evolved and matured since tritium was first identified at Seabrook in 1999. A ground water monitoring network of 27 monitoring wells was established to track and trend the concentrations and migration of the tritium. Following the use of available on-site wells in 2000 for initial measurements, NextEra/FPL installed 15 dedicated monitoring wells in 2004, 4 in 2007 and 2008, 3 outside the protected area in 2009, and 5 more inside the protected area in 2010. NextEra samples the wells at specified frequencies. The samples are then analyzed for tritium and non-radiological chemical components. From this data, the down gradient ground water flow and tritium distribution at the site are characterized and ground water flow variations that may result from tidal and seasonal influences are identified.

Tritium is the only radioisotope identified in water samples taken from the monitoring wells. NextEra analyzed for tritium at concentrations well below the regulatory required lower limit of detection (LLD) of 2000 picoCuries/liter (pCi/l), achieving LLDs of < 600 pCi/l. Of the 15 monitoring wells installed in 2004, only 5 had initial tritium indications and these wells have shown declining tritium concentrations. Currently, only one well (SW-1) is showing a positive concentration slightly above 2000 pCi/l and all other wells are showing less than minimum detectable (< 600 pCi/l). SW-1 is located outside the fuel handling building and primary auxiliary building. Fluctuations in monitoring well tritium concentrations have infrequently occurred and can be attributed

to changes in weather precipitation levels that result in leaching of legacy tritium entrained in structural concrete. This phenomenon was observed in June 2009, when the results of two monitoring wells (SD-1 and BD-2) indicated values above background. These wells are southwest of SW-1 and tritium migration to SD-1 and BD-2 is consistent with site hydrology and elevated ground water levels, resulting from significant snow melt and rainfall. Similarly, tritium identified in the Unit 2 tunnel has been attributed to plume fluctuations. There has been no indication of tritium getting into the ground water sampling wells from the tunnel. No tritium has been detected in ground water samples taken outside the protected area.

Independent Consultant

The services of independent consultants were retained to provide in-depth evaluations of site characteristics through expansion of the ground water sampling program and development of a hydrological site conceptual model (SCM). Through development of the SCM, the geologic and hydro-geologic conditions of the site are characterized, ground water elevation (gradient) data is collected, ground water quality is evaluated from the vertical and horizontal extent, and other possible sources of tritium into ground water are examined.

b. Assessment and Observations

No findings were identified. The inspectors' assessment of NextEra performance relative to identification, evaluation and corrective actions for this issue are discussed below.

Assessment - Effectiveness of Problem Identification

Specific procedural criteria have been established to assure that any potential leak or spill of radioactive material, that could potentially affect ground water quality, is addressed by the corrective action program. However, NextEra has consistently generated condition reports at a conservative threshold below the criteria to assure that any off normal condition is promptly addressed by the corrective action program.

Since identifying the contaminated water in the containment annulus in 1999, a large volume of (> 100) condition reports have been generated to address various aspects of the ground water protection program.

Assessment - Effectiveness of Prioritization and Evaluation of Issues

Thorough and timely evaluations have been performed of ground water related issues. NextEra has retained the services of contracted specialists to better understand site hydrology and tritium distribution, evaluate the effectiveness of corrective actions, and develop future strategies.

NextEra has appropriately responded to the initial cask loading area/transfer canal leakage by conducting tests to identify leak locations, evaluating leak control measures, and performing repairs to stop the leak to mitigate the introduction of tritium into soil within the site protected area. NextEra has appropriately investigated potential tritium migration paths into cable vaults, building sumps and tunnels. An isolated lapse in tritium control while pumping unit 2 tunnel water had inconsequential safety significance

due to the very low concentrations involved, and was insignificant relative to the account of total tritium releases to the environment.

Additionally, NextEra has and is continuing to expand the investigation into other potential sources of tritium and increase understanding of site ground water hydrology. Future projects include developing a numerical ground water flow and transport three-dimensional model, performing a storm drain inspection, and upgrading monitoring wells.

Building upon the current ground water protection program, NextEra is developing a buried piping integrity program to assure that the structural and leakage integrity of all buried piping containing radioactive fluids is evaluated and maintained. For example, the waste liquid discharge piping has recently been hydrotatically tested and found to have no leakage. Other piping inspections are under development.

NextEra has also evaluated operating experiences at other nuclear facilities to identify the potential for a similar incident to occur at Seabrook. Operating experiences were captured in condition reports, evaluated and lessons learned applied to site programs.

As a result of the actions taken in response to the root cause evaluation for the transfer canal liner leakage in 1999, Seabrook implemented early the recommendations contained in NEI-07-07, "Industry Ground Water Protection Initiative."

Assessment - Effectiveness of Corrective Actions

NextEra has implemented effective corrective actions in mitigating and monitoring ground water contamination. The initial leak from the cask loading area/transfer canal liner has been repaired, a ground water sampling program has been established, and strategies have been developed to identify any additional sources of tritium that could contaminate ground water.

Summary

The safety consequence of tritium entering the site ground water has low safety significance, since monitored concentrations are small and no pathway exists for site ground water to communicate with drinking water supplies. None of the data indicates any significant impact to the site or environs due to the previous tritium leak from the fuel transfer canal. However, NextEra has placed a high priority on monitoring and controlling radioactive fluid sources that could potentially contaminate ground water to strengthen public confidence that radioactive materials are being properly controlled.

NextEra has taken the actions necessary to control and assess current ground water conditions, and have expanded their investigation and monitoring capabilities to identify and address future occurrences.

.4 Application of ASME Code Cases N513 and N523 to Mitigation of Service Water Class 3 Pipe Degradation

a. Inspection Scope

The inspectors visually observed the three instances where ASME Code Cases (CC) N513 and N523 were applied and examined the corrective action documentation and

procedural controls for each of the code case applications. Included in the inspection scope were AR 392285, AR 209357 and AR 209078. Additionally, for AR 593728, on ultrasonic testing (UT) for wall thickness measurement of a condensate pipe segment for CR-585696, the UT technique and procedure were also reviewed.

The Seabrook Station Procedure MA 10.2, Rev 0 titled "Online Repairs of Non-Isolable Leaks" and portions of the Procedure EN-AA-203-1001, Rev 3 for "Operability Determinations/Functionality Assessments" were included in the scope of the inspection.

The inspectors compared the observations and review results to CC N513 and N523 and to the NRC Regulatory Issue Summary 2005-20, Rev 1, Technical Guidance on "Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality."

b. Findings and Observations

No findings were identified.

The American Society of Mechanical Engineers (ASME) Code Cases (CC) N513 and N523 provide methods for temporary acceptance of flaws, flaw mitigation, and control of leakage for thru wall flaws in ASME Class 2 and Class 3 moderate energy piping where the temperature and pressure do not exceed 200 deg-F or 275 psi pressure.

Observation of the installed modifications and review of the drawings for the three repair modifications per CC N513 for SW pipe, 1-SW-1814-1-156-24 (PMCap), 1-SW-1827-01-153-24" (blind flange), and 1-SW-1827-06-156-2" (encapsulation) found these to be robust components in conformance with the ASME Code requirements.

The NRC Regulatory Issue Summary (RIS) 2005-20, Rev 1, Technical Guidance on "Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality" was issued on April 16, 2008. However, the plant procedure MA 10.2 Rev 0, titled "Online Repairs of Non-Isolable Leaks" in current use was issued on May 5, 2006 and was not updated after the issue of the RIS, revision 1. While no significant differences were noted by the inspectors between MA 10.2 and the RIS revision, MA 10.2 did refer to an outdated reference for operability (procedure OE 4.5) rather than the current Operability Procedure in use, EN-AA-203-1001. NextEra acknowledged these observations and initiated CR AR 01601758 to provide for review of MA-10.2 and to initiate corrective actions.

4OA6 Meetings, Including Exit

On January 6, 2011, the resident inspectors presented the results of the fourth quarter routine integrated inspections to Mr. Paul Freeman and Seabrook Station staff. The inspectors also confirmed with NextEra that no proprietary information was reviewed by inspectors during the course of the inspection.

4OA7 Licensee-Identified Violations

The following violations of NRC requirements were identified by NextEra. The violations were determined to have very low significance (Green) and to meet the criteria of Section 2.3.2 of the NRC Enforcement Policy for being dispositioned as a non-cited violations.

Technical Specification 6.7.1 and Regulatory Guide 1.33 requires that operating activities be implemented in accordance with written procedures. Seabrook procedure OS1016.05, Step 4.2.26, requires the operator to place the train B standby service water (SW) pump (SW-P41D) control switch in "normal" following cooling tower operations. Contrary to the above, on October 8, 2010, the operator left the control switch for SW-P41D in "pull-to-lock" after transferring the train B cooling loop from the tower back to the ocean. The train B SW pump was non-functional for about 1 hour 40 minutes until another operator identified the discrepancy during a control board walkdown. The finding had very low safety significance because it did not involve a loss of safety function or impact the safety function for a time greater than the allowed outage time in Technical Specification 3.7.4. Specifically, SW-P41D was non-functional but recoverable by operator action from the main control board. The violation was licensee identified and entered into the corrective action program as AR 585992.

ATTACHMENTS: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION**KEY POINTS OF CONTACT**

Licensee personnel

B. Bouton	Design Engineer
V. Brown	Senior Licensing Analyst
B. Brown	Design Engineering Supervisor
J. Buyak	Senior Radiation Protection Technician
M. Collins	Design Engineering Mgr
D. Egonis	Engineer, Eng Programs
P. Freeman	Site Vice President
A. Giotas	Chemistry Supervisor
R. Guthrie	Plant Systems Engineer
S. Hammel	UT Level III
P. Harvey	Chairman, Ground Water Protection Committee
R. Healy	I&C Supervisor
S. Jaster	Chemistry Analyst
M. Leone	Licensed Operator Requalification Training
B. McAlister	SW System Engineer
E. Metcalf,	Plant General Manager
W. Meyer	Radiation Protection Manager
R. Noble	Engineering Director
M. O'Keefe	Licensing Manager
V. Pascucci	Nuclear Oversight Mgr
D. Perkins	Radiation Protection Supervisor
D. Robinson	Chemistry Manager
M. Scannel	Health Physicist
J. Sobotka	Design Engineering Supervisor
J. Walsh	Plant Engineer
T. Vassallo	Design Engineer

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Opened and Closed:

None

Closed:

None

Discussed

None

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

OS1200.03, Severe Weather Conditions, Revision 18
ON1490.08, Operational Status Check of Station Heating Systems, Revision 3
ON1490.06, Winter Readiness Surveillance, Revision 6
OS1046.16, Re-establishing Plant Heating During Extended Loss of Offsite Power,
Revision 2
OS1090.09, Station Cold Weather Operations, Revision 1
FP 2.5, Control of Portable Electric Heaters, Revision 3
NM11800, Hazardous Condition Response & Recovery Plan, Revision 23
OP-AA-102, Seasonal Readiness, Revision 0
ER1.1, Classification of Emergencies, Revision 48
MGDI0041, Severe Weather Response
SDI0073, Adverse Weather Response, Revision 1
Operations Department Turnover Report
Condition Report: 580765, 580974, 178908, 395519, 222474
Work Orders 12000154, 40043920, 1382672, 1205251
Engineering Change: 145280
Daily Status Report
Station Operating Logs

Section 1R04: Equipment Alignment

OX1426.18, Aligning DG 1A Controls For Auto Start, Revision 03 Change 08
OX1456.02, ECCS monthly System Verification, Revision 11
OS1026.05, Operating The DG 1A Fuel Oil System, Revision 13
OS1026.02, Operating The DG 1A Lube Oil System, Revision 13
OS1026.04, Operating The DG 1A Starting Air System, Revision 10
OS1005.05, Safety Injection System Operation, Revision 12
Plant Engineering Action Plan Register
Station Operating Logs - various
PID: 1-CBS-B20233, D20233, 1-RH-B20662, 20663, 1-SI-B20446, 20447, 1-CSB20725
Work Orders 1205378, 1210738, 1210749

Section 1R05: Fire Protection

Fire Protection Pre Fire Strategies

Fire Impairment List

MX0599.06, 6-Month Surveillance And Post-Maintenance Inspection Of Technical Requirements Fire-Rated Doors, Revision 04 Change 02

TR11-3.7.9.5, Fire Rated Assemblies

UFSAR Section 9.5.1 Fire Protection Systems

Technical Requirement 11, Fire Rated Assemblies

Fire Protection Pre-fire Strategies

DBD-FP-06, Fire Rated Doors, Dampers, Conduit Wrap, & Heat Shields, Revision 2

OS1200.00A, Fire Hazards Analysis for Affected Area / Zone – Appendix A, Revision 12

OS1200.00, Response to Fire or Fire Alarm Actuation, Revision 12

OS1014.07, Dewatering the Fuel Transfer Canal and Cask Pool Area, Revision 4

Station Operating Logs - various

Section 1R11: Licensed Operator Regualification Program

Simulator Demonstration Examination October 5 and 12, 2010

Form ER 2.0B, Seabrook Station State Notification Fact Sheet

Form EPDP-03A, EP Cornerstone Reporting and Information Form

NT-5701-5, Crew Simulator Evaluation

NT-5701-2, Crew Critical Task Validation

Operating Procedures OS1210.03, ON1231.01, 1201.07, E-0, E-1, ES-1.1,

Section 1R12: Maintenance Rule Implementation

System Health Reports – Structures and Enclosure Air Handling

Maintenance Rule Performance and Scope Report

MS0517.42, Application of Non-Safety Related Coatings, Revision 1

NUREG/CP-0116, Proceedings of the 21st DOE/NRC Nuclear Air Cleaning Conference

NUCON Radioiodine Test Report PO 02261529 dated 9/30/2010

MS0517.42 form C, VOC Tracking Form

Work Orders 40045424, 01206457

Plant Engineering Action Register

Technical Assessment Report for AR585376

Action Requests 584192, 585376, 585369

Apparent Cause Evaluation for CR 585369

Reportability Determination for AR 585376

Technical Specification 3.6.5 / 4.6.5

Condition Reports 2008-2010

Work Requests 2009-2010

Station Logs

Section 1R13: Maintence Risk and Emergent Work

SM 7.10, Maintenance Rule Program, Revision 01

WM 10.3, On-Line Maintenance, Revision 3

WM-AA-1000, Work Activity Risk Management Process

NP-702, Use of Probabilistic Assessment

OP-AA-104-1007r0, Online Aggregate Risk, Revision 0

M-Rule a(4), Risk Assessment Reports 1045

OS1046.07, Vital 480 Volt Operation, Revision 11
OS1000.05, Power Increase, Revision 13
OS1000.06, Power Decrease, Revision 13
EN-AA-212, Engineering Product Risk & Consequence Assessment & Pre-Job Briefs
Calculation 9763-3-ED-00-27-F, C-S-1-38014, Revision 1
Engineering Change EC250156
CM6.1A, Reactor Engineering Operating Recommendation, Revision 3
Station Operating Logs - various
Power Increase Justification dated 11-01-2010
Operational Decision Making for Grounding Connection on 345 KV Bus 3
AR 57881, 149600, 591229, 591359, 591360, 591828
Work Order 1198190, 1198186, 1198187, 1198191, 4005031, 1382243, 1173094,
598636, 40045424

Section 1R15: Operability Evaluations

ODM Plan for CR579900, Operational Decision Making on MS-V-393 Leakage
Condition Reports 583804, 585696, 585369, 1601263, 584192, 579900
Technical Assessment Report for CR 583804
Technical Assessment Report for CR 585376
Prompt Operability Determination for CR 585696
Technical Specification 3.7.4
FSAR 9.2.5. Ultimate Heat Sink

Section 1R18: Plant Modifications

EC145280 (CRN-003), Hi Pot Test Bushings
Work Orders 40040244, Tasks 01 and 02
Engineering Evaluations EDI 30550, Scaffolding Evaluation
Grove 15 T Crane RT515 Range Diagram
EN-10-01-36, 345KV High-Pot Test of MELCO Bus 6 Section
Condition Report 596384
Apparent Cause for CR 596384

Section 1R19: Post Maintenance Testing

MS0523.16, Crane "Chempump" Maintenance, Revision 04A
ES1830.004, Boric Acid Transfer Pump 3A Head Curve Verification Test, Revision 00
OX1408.03, Boric Acid Transfer Pump And Valve Quarterly Operability And
Comprehensive Pump Test, Revision 11
TR29-4.1.2.2 c, Boration Systems
Work Orders 40047396, 40049216
MA3.5, Post Maintenance Testing, Revision 11
OX1456.81, Operability Testing of IST Valves, Revision 13
OX1490.11, Miscellaneous Steam Blowdown System ASME Cold Shutdown
Valve Testing and 18 Month Position Verification, Revision 0
ODI 88, Containment Penetration Control in MODES 1-4, Revision 5
IS0603.005, Equipment Qualification for ASCO Solenoid Valves, Revision 7
ES1804.055, Inservice Testing Pump and Valve Program, Revision 5
SITR, Inservice Testing Reference, Revision 22
Clearance 1-SB-V-23, 1-SB-V-9/11, 1-SB-V-10-01, 02, & 03
Work Orders 40051924, 1382608, 40056855, 40055856, 40056856, 40056793
AR 593884, 1601479, 1601889, 1601198, 1601259

PID B20647

IST Acceptance Evaluation, SB-V-10 / SG-E-11B ORC Blowdown Isolation Valve

Technical Specification - various

Plant Engineering Action Plan Register – steam generator blow down system

Station Operating Logs - various

Section 1R22: Surveillance Testing

OX1436.08, Startup Feed Pump Quarterly Surveillance, Revision 12

TR2.28-4.1, ESF Pump Operability Requirements

OX1456.01, Charging Pump A & B Quarterly Flow And Valve Stroke Test And
18 Month Remote Position Indication Verification, Revision 11

OX1456.81, Operability Testing of IST Valves, Revision 12

Chemical & Volume Control Charging System, PID 1-CS-B20725

C-S-1-50013, SI Pump (SI-P-6A/B) IST Uncertainties

C-S-1-57054, Safety Injection Pumps, SI-F-918, 922 IST Uncertainties

SBK-1FJF-09-054, Seabrook Cycle 14 Rod Insertion Allowance

SBK-1FJF-09-027, Seabrook Cycle 14 RSAC – Dropped Rod Analysis

RE-20, RCCA Full Out Position, dated 04-02-08

PID 1-SI-B-20446, 20447, F-20446

OX1456.48, Train B ESFAS Slave Relay K610 Quarterly Go Test, Revision 7

OX1405.07, Safety Injection Quarterly and 18 Month Pump Flow and Valve Test,
Revision 11

OX1410.02, Quarterly Rod Operability Surveillance, Revision 10

OS1205.05, Dropped Rod, Revision 13

OS1210.06, Misaligned Control Rod, Revision 13

RX1734.2, NonIndicating Rod Position Verification, Revision 0

RPI, Rod Position Indication Detailed System Text, Revision 5

Work Orders 01209404, 01209780, 01205724, 1210749

Station Operating Logs - various

Section 2RS05: Radiation Monitoring Instrumentation and

Section 4OA1: Performance Indicator Verification

Procedures:

IX1660.639, RM-6576A or RM-6576B Containment Post LOCA High Range
Area Monitor, Revision 6

IX1660730, RM-6528 Plant Vent Wide Range Gas Radiation Monitor, Revision 5

IN1660.611, RD-10B & RD12 Area Monitor Calibration, Revision 5

IX1660.816, RM-6509 Waste Liquid Test Tank Discharge Monitor Calibration, Revision 6

HD0955.31, Determination of Portable Instrument Response Check Data, Revision 3

JD0999.910, Reporting Key Performance Indicators per NEI 99-02, Revision 1

HD0963.31, Calibration and Minor Maintenance of the Eberline RM-14, Revision 7

HD0963.28, Calibration & Troubleshooting of the MGP Instruments DMC 2000
Dosimeters, Revision 11

HD0963.02, Administrative Guidelines for Radiation Protection Instrumentation,
Revision 17

CS0908.02, RDMS Setpoints, Revision 9

HX0955.32, RDMS Setpoint Determination for RP Monitors, Revision 26

HD0955.62, Use of the ARGOS 4A/B\, Revision 1

HD0955.54, Operation of the TSA Model SPM-906 Portal Monitor, Revision 0

HD0955.42, Operation of the Nuclear Enterprise Small Article Monitor, Revision 3

HD0955.05, Operation of Portable Radiation and Contamination Survey Instruments,
Revision 16

RP 18.4, Isotopic Characterization of Radwaste, Revision 1
HD0963.56, Calibration of the Canberra S5-APC-GM, Revision 1
HD0963.47, Tennelec Series 5 XLB Calibration, Revision 0

Calibration Records:

Calibrator:

Shepherd Calibrator Model 81-12

Portable Survey Instruments:

Fluke 451B, Serial No. 0048
Fluke 451P, Serial No. 0007
Telepole, Serial No. 6605-037
Ludlum 19, Serial No. 73520
Bicron MicroRem, Serial No. C552G
ASP-2, Serial No. 1199

Contamination Monitors:

SAM-9: Serial No.9A
SAM 12: Serial No.198
ARGOS 4A/B: Serial No. 106
SPM-906: Serial No.906073M
RM-14: Serial No.7533

Electronic Dosimeters:

DMC-2000, Serial Nos.202536, 201776, 0644780, 044776, 073296, 060562, 244998

Laboratory Instruments:

Gamma Spectroscopy Detector Nos 1, 2, 3, 4, 5, 7, 8, 9
Scintillation Counter LSA Packard 3100 TR
Tennelec S5-APC-GM

Whole Body Counting Systems:

FastScan whole body counting system

In-Plant Monitors:

Containment High Range Area Monitors, RM-6576A/B
Liquid Waste Test Tank Monitor, RM-6509
Plant Vent Monitor, RM-6528
Control Room Area Monitor, RM-6550
Incore Instrument Seal Table Area Monitor, RM-6534

Other Documents:

Radiation Monitoring System Health 1st & 2nd Quarter Report 2010
Annual Review Report of the 2009 10 CFR Part 61 Radionuclide Analysis
UFSAR Rev 12, Health Physics Program
Dosimetry Abnormality Occurrence Reports for 2010
Isotopic Mix 09-01

Health Physics Study/Technical Information Document (HPSTID)

HPSTID 10-14, Verification/Calibration of the Shepherd Model 81-12 (Serial No. 7015)

Cs-137 Irradiator

HPSTID 08-013, Calibration of the FastScan WBC System

Condition Reports: 591809, 591420, 579361, 197616, 570645, 572458, 573681, 575981, 578895, 209038, 208127, 215837, 223003, 003208, 198660, 002177, 394678, 221072, 394676, 394552, 567047, 396117, 003075, 204041, 216962, 212520, 191157, 002842, 003074, 0019299, 034378

Management Activity Observations:

09-00316, 10-00096, 09-01692, 10-00118, 10-00248

Nuclear Oversight Reports/Audit:

SBK 10-045, 08-0065, 10-012

Radiation Protection/Process Control/Radwaste Programs Audit (SBK 08-01)

Daily Quality Summary Reports 10/01/2008 through 10/05/2010

Section 40A2: Identification and Resolution of Problems

Procedures:

EV-AA-100, Rev 0, FPL Nuclear Fleet Ground Water Protection Program

EV-AA-100-1000, Rev 1, Ground Water Protection Program Communications/Notification Plan

CS0911.04, Rev 12, Yard Tank and Miscellaneous Samples

CDI-015, Rev 0, Sampling of Ground Water Monitoring Wells

EN1810.300, Rev 0, WL Discharge Line Leak Check

MA 10.2, Rev 0, titled "Online Repairs of Non-Isolable Leaks"

EN-AA-203-1001, Rev 3 for Operability Determinations / Functionality Assessments

ES1807.012, Rev 5, Chg. 01. Ultrasonic Thickness Measurements

Health Physics Study/Technical Information Document (HPSTID):

No. 06-011, Documentation for the Initial Determination of NEI Ground Water Protection Initiative

No. 06-012, Additional Information for No. 06 -011 Expanded Discussion of Historical Sample Results

Condition Reports 99-10102, 99-13671, 99-18291, 99-2720, 99-003948, 00-05008, 00-00911, 02-05474, 03-02709, 03-04177, 03-10828, 04-02146, 04-03889, 04-12303, 04-03660, 05-03219, 05-10391, 05-10901, 06-05490, 06-05632, 06-06139, 06-07971, 07-20007, 08-08864, 08-11669

Action Requests: 0002678, 0011408, 00191336, 00574553, 00201949, 00204623, 00574559, 200578; 566231, 567360, 573630, 574935, 575577, 576353, 578961, 578997, 585992, 586473, 592058, 592388

Self-Assessments:

01-0243, Outside Assessment of Tritium Root Cause and Plan

Peer Assessment of Implementation of NEI 07-07, Ground Water Protection Initiative, 09/17/2009

Contractor Reports:

TSD No. 08-027, 2008 Updated Site Conceptual Ground Water Model for Seabrook Station
TSD No. 09-019, 2009 Site Conceptual Ground Water Model for Seabrook Station
TSD No. 09-039, Tritium Distribution and Ground Water Flow at Seabrook Station
TSD No. 09-060, Distribution of General Geochemistry Parameters In Ground Water
TSD No. 10-062, Seabrook Station Monitoring Well Completion and Updated Ground Water Flow
51-5042383-02, Recommendations for Ground Water Monitoring Wells At Seabrook Station

Ground Water Protection Committee Meeting Minutes:

Quarterly Conducted Meetings for 2006, 2007, 2008, 2009, 2010

Weekly Tritium Status Reports:

For the weeks of 11/14/10, 10/31/10, 10/24/10, 10/10/10, 10/03/10, 9/26/10, 9/19/10, 9/12/10, 9/05/10, 8/29/10, 8/22/10, 8/15/10, 7/25/10, 7/18/10, 6/20/10, 6/13/10, 6/06/10,

Other Reports:

2008 and 2009 Ground Water Monitoring Well Tritium Results contained in the Annual Environmental Operating Reports

Drawings

200917-M-0002, Rev 0. SW pipe, 1-SW-1814-1-156-24, PMCap
SK -EC145192-2000, Rev 0. SW System Piping Repair, 1-SW-1827-01-153-24"
SK -EC156608-2001, Rev 0. SW System Piping Repair, 1-SW-1827-06-156-2"

ECs and Action Requests (ARs, CRs)

AR 392285, EC-156608
AR 209357, EC-145192
AR 209078, EC145189
AR 593728
AR593838
CR-585696
CR/AR 01601758

Other Documents

The American Society of Mechanical Engineers (ASME) Code Cases N513 and N523
The ASME 2004 Code Section XI, IWA-4340, on Mitigation of Defects by Modification
NRC Regulatory Issue Summary 2005-20, Rev 1, Technical Guidance on "Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality"
Position Paper on SW Leak Repairs by D. Nowicki for assignment No. 593838-02

Section 40A7: Licensee-Identified Violations

AR 585992, 581434, 199563, 57420

LIST OF ACRONYMS

ADAMS	Agency-wide Documents Access and Management System
AR	Action Request
ASR	Alkali Silica Reaction
ASME	American Society of Mechanical Engineers
CAP	Corrective action program
CB	Control Building
CC	(ASME) Code Case
CR	Condition Report
DBD	Design Basis Document
DG	Diesel Generator
EC	Engineering Change
ECCS	Emergency Core Cooling System
EDG	Emergency diesel generator
EFW	Emergency feed water
FHB	Fuel Handling Building
I & C	Instrumentation and Control
IMC	Inspection Manual Chapter
IP	Inspection Procedure
LER	Licensee Event Report
LSA	Low Specific Activity
MR	Maintenance rule
NCV	Non-cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
NRR	Nuclear Reactor Regulation
PAB	Primary Auxiliary Building
PARS	Publicly Available Records
PCM	Personnel Contamination Monitor
PMT	Post-maintenance testing
RCS	Reactor Coolant System
RHR	Residual heat removal
RM	Radiation Monitor
SAM	Small Article Monitor
SCM	Site Conceptual Model
SPM	Scintillation Portal Monitor
SSC	Structures, systems or components
SW	Service Water
SWP	Service Water Pump
TI	Temporary Instruction
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
UT	Ultrasonic testing
WO	Work Order