UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW, SUITE 23T85
ATLANTA, GEORGIA 30303-8931

January 28, 2005

Florida Power and Light Company
ATTN: Mr. J. A. Stall, Senior Vice President
Nuclear and Chief Nuclear Officer
P. O. Box 14000
Juno Beach, FL 33408-0420

SUBJECT: TURKEY POINT NUCLEAR PLANT - INTEGRATED INSPECTION REPORT 05000250/2004005 AND 05000251/2004005

Dear Mr. Stall:

On December 31, 2004, the US Nuclear Regulatory Commission (NRC) completed an inspection at your Turkey Point Units 3 and 4. The enclosed integrated inspection report documents the inspection findings which were discussed on January 13, 2005, with Mr. T. Jones and other members of your staff.

The 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.

Based on the results of this inspection, two inspector identified findings and one self-revealing finding of very low safety significance (Green) were identified. These findings were determined to involve violations of NRC requirements. However, because of the very low safety significance and because they were entered into your corrective action program, the NRC is treating these violations as non-cited violations (NCVs), in accordance with Section VI.A of the NRC's Enforcement Policy. If you contest these NCVs, 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 II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Senior Resident Inspector at the Turkey Point facility.

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

Sincerely,

/RA/

Joel T. Munday, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Docket Nos. 50-250, 50-251
License Nos. DPR-31, DPR-41

Enclosure: Inspection Report 05000250/2004005 and 05000251/2004005
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos:	50-250, 50-251
License Nos:	DPR-31, DPR-41
Report No:	05000250/2004005, 05000251/2004005
Licensee:	Florida Power & Light Company (FP&L)
Facility:	Turkey Point Nuclear Plant, Units 3 & 4
Location:	9760 S. W. 344th Street Florida City, FL 33035
Dates:	September 26, 2004 - December 31, 2004
Inspectors:	K. Weaver, Senior Resident Inspector J. Baptist, Project Engineer T. Hoeg, Senior Resident Inspector M. Pribish, Project Engineer S. Ninh, Senior Project Engineer S. Rudisail, Project Engineer B. Crowley, Senior Reactor Inspector (Section 4OA5) J. Lenahan, Senior Reactor Inspector (Section 1R08, 4OA5) S. Vias, Senior Reactor Inspector (Section 1R08, 4OA5) Tomy Nazario, Reactor Inspector (Section 1R08, 4OA5) Ruben Hamilton, CHP, Health Physicist (Sections 2SO1. 2SO3, 4OA1, 4OA2, and 4OA5)
Accompanying Personnel:	Jeff Griffis, Health Physicist (Sections 2SO1, and 2SO3)
Approved by:	Joel T. Munday, Chief Reactor Projects Branch 3 Division of Reactor Projects

Enclosure

CONTENTS

SUMMARY OF FINDINGS

IR 05000250/2004-005 05000251/2004-005; 09/26/2004 - 12/31/2004; Turkey Point Nuclear Power Plant, Units 3 and 4; Event Followup; Inservice Inspection Activities; and Other Activities.

The report covered a three month period of inspection by resident inspectors, four region based project engineers, four region based inspectors, and a region based health physicist. Three Green non-cited violations were identified. The significance of most findings is identified by their color (Green, White, Yellow, Red) using 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 Overnight Process", Revision 3, dated July 2000.

A. Inspector Identified & Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. A self revealing Non-Cited Violation (NCV) of Technical Specification (TS) 3.5.2, Action statement c. occurred as a result of the licensee discovering that one of the four required High Head Safety Injection (HHSI) pumps was inoperable for greater than 30 days, and the unit was not shut down, as required. The pump was discovered to have less than the amount of lube oil needed for it to complete its required safety function and it was determined that this condition had existed for 60 days.

  This finding was greater than minor because it involved the equipment performance attribute of the mitigating system cornerstone and affected the objective of ensuring that equipment is available and capable to respond to an event. An SDP Phase 3 was performed by a Regional Senior Reactor Analyst and determined that this finding was of very low safety significance (Green) because one of the remaining three HHSI pumps (two for Unit 3 and one for Unit 4) could perform its safety function. This finding directly involved cross cutting aspects of problem identification and resolution, that being inadequate assessment and initial corrective actions which resulted in the 4B HHSI pump being inoperable from June 6, 2004 until August 5. (Section 4OA3.1)

Cornerstone: Barrier Integrity

- Green. The inspectors identified a NCV of 10 CFR Part 50.55a(b)(2)(ix) with four examples; failure to correct deficiencies identified during examination of the Unit 3 reactor containment building moisture barrier; failure to conduct augmented inspections; failure to expand the sample size; and, failure to perform re-examination of areas of degradation during the next inspection period in accordance with the requirements of Subsection IWE of ASME Section XI.

  This finding is more than minor because if left uncorrected, these examples could become a more significant concern, that being loss of the reactor containment

building barrier integrity. The finding was of very low safety significance (Green) because the existing condition did not result in an actual open pathway in the physical integrity of the containment. The finding involved the cross-cutting aspects of problem and identification of resolution, in that a CR was not initiated to document the degraded moisture barrier conditions until after the inspectors questioned the extent of the deficiencies and planned resolution. Additionally, the licensee did not appropriately evaluate or incorporate operating experience on this issue disseminated in NRC Information Notice (IN) 2004-009, Corrosion of Steel Containment and Containment Liner, and is considered another example of a cross-cutting aspect of problem identification and resolution. (Section 1R08)

- Green. The inspectors identified a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V for failure to perform the pre-placement inspection of the Unit 3 containment construction opening prior to concrete placement in accordance with the requirements of paragraph 13.5.1 of Specification 7012-SPEC-C-003, Rev. 1.

  This finding is more than minor significance because if left uncorrected, failure to identify and remove the excess free water from the bottom of the concrete forms would have resulted in a reduction in the compressive strength of the replacement concrete and could have resulted in significant degradation of the containment. The failure to remove the water was of very low safety significance (Green) because the water was identified by the inspectors and removed prior to concrete placement, and did not result in an actual open pathway in the physical integrity of the containment. (Section 4OA5.4)

B. Licensee Identified Violation

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

REPORT DETAILS

Summary of Plant Status:

At the beginning of the inspection period Unit 3 was at 50% power. On September 26, 2004, the unit was shut down for a Reactor Vessel Head Replacement and Refueling Outage. On November 28, Unit 3 restarted but on November 29, during low power physics testing, an unexpected Rod Drop of Control Rod E-11 occurred and operators manually tripped the unit. On November 30, following troubleshooting and investigation of Control Rod E-11, the unit was restarted however, during low power physics testing, another unexpected Rod Drop of Control Rod E-11 occurred, and operators manually tripped the unit. On December 1, following repairs to Control Rod E-11, the unit was restarted and low power physics testing was completed. On December 2, the main generator output breakers were closed. On December 4, a power reduction was commenced from 82% to repair condenser tube leaks. On December 6, following repairs of the condenser tube leaks, power was increased to approximately 98%. However, on December 7, operators commenced a power reduction to approximately 58% to repair additional condenser tube leaks. On December 10, following condenser tube repairs, the plant was returned to 100%. On December 14, Unit 3 was manually tripped from 100% when a fire occurred at the high pressure turbine number 2 bearing. On December 17, following maintenance activities for the high pressure turbine, Unit 3 was restarted and power was increased to 60% limited by having one feedwater pump out-of-service. On December 24, following repairs to the 3B Steam Generator Feed pump, power was increased to 100%. On December 28, a fast load reduction and subsequent manual trip from 70% power occurred when a turbine plant cooling water leak began in the turbine exciter housing. Unit 3 remained shut down at the end of this inspection period.

Unit 4 operated at full power during most of the inspection period with the following exceptions: On December 25, Unit 4 experienced a manual reactor trip from 100% power when a loss of condenser vacuum occurred. On December 26, following maintenance activities to restore condenser vacuum, Unit 4 was restarted and was returned to full power on December 27.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity (Reactor-R)

1R04 Equipment Alignment

a. Inspection Scope

Partial Equipment Walkdowns

The inspectors conducted four partial alignment verifications of the safety-related systems listed below. The inspectors reviewed the operability of a redundant train or backup system/train while the other trains were inoperable or out of service. These inspections included reviews of plant lineup procedures, operating procedures, and piping and instrumentation drawings, which were compared with observed equipment configurations to verify that the critical portions were correctly aligned and that they identified any discrepancies that could affect operability.

- Unit 3, Residual Heat Removal System, in accordance with Procedure 3-OP-050, "Spent Fuel Pit Cooling System," conducted on September 27, and 28, 2004 following shutdown to Mode 5
- Unit 3, Spent Fuel Pit Cooling System in accordance with Procedure 3-OP-033, "Spent Fuel Pit Cooling System, " conducted on October 4, 2004 following the full core off-load to the spent fuel pit.
- Unit 4, 4B Emergency Diesel Generator (EDG), in accordance with Procedure 4-OSP-023.1, "Diesel Generator Operability Test," Attachment 6, "4B EDG System Flowpath Verification Data Sheet" conducted on September 29, while the 4A EDG was surveillance tested.
- Unit 3, 3B EDG and 3B 4160 Volt Vital Switchgear, in accordance with Procedure 3-OP-023, "Emergency Diesel Generator," conducted on October 4 and 5, during the 3A EDG and 3A 4160 Volt Vital Switchgear bus outage.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

Fire Area Walkdowns

The inspectors toured the following nine plant areas during this inspection period to evaluate conditions related to control of transient combustibles and ignition sources, the material condition and operational status of fire protection systems, and selected fire barriers used to prevent fire damage or fire propagation. The inspectors reviewed these activities against provisions in the licensee's off Normal Operating Procedure 0-ONOP-016.8, "Response to a Fire/Smoke Detection System Alarm," Administrative Procedures 0-SME-091.1, "Fire and Smoke Detection System Annual Test"; O-ADM-016.4 "Fire Watch Program"; 0-ADM-016,"Fire Protection Plan," and 10 CFR Part 50, Appendix R. In addition, the inspectors reviewed the condition report database to verify that fire protection problems were being identified and appropriately resolved. The following areas were inspected:

- Unit 3, 4160V Switchgear 3B Room, Fire Zone 70
- Unit 4, 4160V Switchgear 4A Room, Fire Zone 68
- Unit 3, 3A EDG Building, Fire Zone 73
- Unit 3, 3A EDG Day Tank Room, Fire Zone 75
- Unit 3, Safety Injection Pump Room, Fire Zone 53
- Unit 4, Safety Injection Pump Room, Fire Zone 52
- Unit 3 and 4, QSPDS Inverter Area, Fire Zone 65
- Unit 3, Switchgear Room 3D, Fire Zone 134
- Unit 3, Containment Building, Fire Zone 60

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection (ISI) Activities

.1 ISI Activities

a. Inspection Scope

The inspectors observed in-process ISI work activities, reviewed ISI procedures, and reviewed selected ISI records associated with risk significant structures, systems, and components. The observations and records were compared to the requirements specified in the Technical Specifications (TS) and the ASME Boiler and Pressure Vessel Code, to verify compliance and to ensure that examination results were appropriately evaluated and dispositioned.

Specifically, non-destructive examination (NDE) activities were reviewed as follows:

Direct Observation

- Magnetic Particle Examination: BDA - 2301-18, 6" weld on steam generator (SG) 'A' blowdown system
- Visual Inspection-3 (VT-3): H-4, chemical volume control system (CVCS)

Record Review

- Ultrasonic Examination (UT): 3-SGC-O-IRS, further characterization of cladding indications on SG 'C' primary side
- UT: 3"-RC-1304-1, 3" weld on the reactor coolant system (RCS) pressurizer (PZR) relief line
- UT: 3"-RC-1305-1, 3" weld on the RCS PZR relief line
- UT: 2004-9774-CR (condition report), 16" diameter elbow in the extraction steam system
- UT: 2004-9315-CR, high pressure main steam piping upstream and downstream of elbow P14
- VT-3: SR-37, CVCS
- VT-3: SR-39, CVCS
- VT-3: PS-60, CVCS
- Radiography Examination (RT): 4"-RC-1304-1A, 4" weld on the pressurizer spray nozzle
- RT: 4"-RC-1301-1A, 4" weld on the pressurizer spray nozzle
- RT: FW-2 on 1-RV-3-311 valve
- RT: FW-5 on 1-RV-3-311 valve

Qualification and certification records for examiners, equipment and consumables, and NDE procedures for the above ISI examination activities were reviewed. In addition, a sample of ISI issues in the licensee's corrective action program were reviewed for adequacy.

The inspectors reviewed one indication accepted by the licensee for continued service; CR 03-0616: 1/16" gap between a mechanically attached wall plate on support 3-RCP-A-L2 and the concrete wall. The inspectors reviewed the licensee's evaluation which determined the gap to be negligible and considered to have no adverse effect on the movement of reactor coolant pump 'A'.

The inspectors reviewed the following Work Orders (WO) to verify dispositioning of indications and defects in accordance with ASME Code requirements or an alternative approved by the U.S. Nuclear Regulatory Commission (NRC):

- WO 34012308-01: The valve bonnet for coolant charging pump 'A' (3-1315) was replaced.
- WO 33021380-01: Three stuffing boxes were replaced for coolant charging pump 'B' (3P201B).
- WO 32018395-01: Coolant charging pump 'A' (3-1315) was replaced due to pump leaking through.
- WO 33015121-01: The cylinder block, valves, valve seats, and all other associated components were replaced for coolant charging pump 'C'.

The inspectors reviewed RT films for Class 1 and 2 welds for the following welds: FW-2 and FW-5 on 1-RV-3-311 valve.

Boric Acid Corrosion Control (BACC) Inspection

The inspectors reviewed implementation of the licensee's BACC program to determine if commitments made in response to Generic Letter 88-05 and Bulletin 2002-01 were being effectively implemented. During containment entries, the inspectors observed the conduct of licensee BACC inspection activities in order to evaluate the thoroughness of the previous licensee inspections. The inspectors performed a walkdown of the Unit 3 containment and verified that boric acid on containment isolation valves 3-854A and 3-854B were documented in CRs 2004-10883 and 2004-10895 following the walkdown. The inspectors reviewed the licensee's list of valves and piping locations that had been identified as part of their BACC inspection, and compared those results with observations noted during the inspectors' containment walk-through inspections. The inspectors reviewed engineering evaluations of the BACC inspection findings from the fall 2004 Unit 3 outage to evaluate the engineering bases for conclusions regarding cause and severity of the discovered leaks and justification for corrective actions.

Unit 3 Steam Generator (SG) Inspection

The inspectors reviewed activities, plans, and procedures for the examination and evaluation of SG tubing (primary side) and SG secondary side inspections to determine if activities were being conducted in accordance with TS, Licensee Amendments, Licensee Commitments such as: NEI 97-06 Steam Generator Program Guidelines, EPRI PWR Steam Generator Examination Guidelines, and applicable industry results from examinations of similarly designed steam generators to verify compliance. The inspectors also evaluated to determine that the eddy current equipment setup parameters, methodology and equipment were used in accordance with Turkey Point Unit 3 component specific technique sheets and steam generator integrity program commitments.

Specifically, the inspectors observed and reviewed the following SG eddy current testing (ECT) examination activities: (1) Bobbin Probe and Plus Point Probe data acquisition for a sample of SG tubes in all three SG's and (2) Licensee SG inspection requirements relative to: in-situ pressure test criteria, ECT scope and expansion criteria, plugging limits and repair criteria, appropriateness of ECT equipment for expected types of degradation, and corrective actions for loose parts.

The inspectors reviewed the examination scope which consisted of 100-percent full length Bobbin Probe exams in rows 3 and higher and rows 1 and 2 (straight sections only), Plus Point Probe exams for 100-percent of the hot leg transitions (+3" to -2", and 50-percent of active row 1 and 2 U-bend regions.

The inspectors reviewed the results of the VT of the secondary side, where the licensee found loose parts and their evaluation to determine if any collateral damage was done to any adjacent tubes. The inspectors discussed their evaluation and proposed corrective actions with licensee representatives.

The inspectors reviewed corrective action items associated with the SG ISI program to determine if problems were being identified at appropriate thresholds and if adequate corrective actions were being taken. The inspectors reviewed records to determine that any issues identified during the SG ISI outage, discussed above, were entered into the corrective action program and that the proposed corrective actions were appropriate.

b. Findings

No findings of significance were identified.

.2 Containment Vessel Inspection

o. Inspection Scope

The inspectors examined interior portions of the Unit 3 containment building and reviewed selected records. The observations and records were compared to the TS, ASME Boiler and Pressure Vessel Code, Subsection IWE of Section XI, 1992 Edition

and 1992 Addenda, and 10 CFR 50.55a. The inspectors examined the condition of the moisture barrier at the junction of the liner plate and interior concrete floor area at Elevation 14.0 and the condition of the protective coatings on the containment liner. The inspectors reviewed Unit 3 Condition Report (CR) numbers 00-0491 and 03-0556 which documented degradation of the moisture barrier. The inspectors also reviewed the results of the Units 3 and 4 30th year containment tendon surveillance inspections completed in 2001. In addition, the inspectors reviewed the licensee's implementation of Operating Experience applicable to this subject.

b. Findings

Introduction: The inspectors identified a NCV of 10 CFR Part 50.55a(b)(2)(ix) with four examples; failure to correct deficiencies identified during examination of the Unit 3 reactor containment building moisture barrier; failure to conduct augmented inspections; failure to expand the sample size; and, failure to perform re-examination of areas of degradation during the next inspection period in accordance with the requirements of Subsection IWE of ASME Section XI.

Description: The Turkey Point reactor containment buildings are reinforced concrete, post-tensioned structures. Leak tightness of the concrete structure is provided by a nominal 1/4 inch thick metal liner plate which serves as the pressure retaining barrier. The requirements for inspection of the reactor containment buildings are specified in ASME Section XI, Subsection IWE.

During a walkdown inspection performed on November 2, 2004, in the Unit 3 reactor containment building, the inspectors identified that the moisture barrier material (elastic joint filler/caulking) at the junction of the metal liner and concrete floor was degraded and required repairs in several areas around the perimeter of the containment building. The inspectors also noted that in several areas around the containment the area containing the moisture barrier was actually lower than the concrete floor and had accumulated enough water to submerge parts of the moisture barrier.

Discussions with licensee engineers disclosed that the initial inspection of the containment vessel including the moisture barrier, was performed in March, 2000, during the eighteenth refueling outage. At that time one-third of the total moisture barrier was inspected. Deficiencies identified during the inspection, including degradation of the moisture barrier, were documented on CR 00-0491. The inspectors reviewed the CR and noted that the licensee did not conduct augmented inspections as required by the ASME code to examine the moisture barrier and areas at the junction of the liner plate and Elevation 14.0 concrete floor. These areas were known to be exposed to standing water, repeated wetting and drying, persistent leakage, and had geometries that permit water accumulation. Further, additional inspections were not performed to examine additional areas (expand sample size) when the defects were identified. Lastly, the areas that were degraded were not re-examined in subsequent outages. The licensee justified continued operation by performing an engineering evaluation of the defective moisture barrier.

Inspection of an additional one-third of the moisture barrier was performed in March, 2003. The inspectors reviewed CR 03-0556 which documented deterioration of the angle toe plate at azimuth 186. The deterioration, which consisted of through wall corrosion, was apparently identified during repairs to a section of the degraded moisture barrier identified during the 2000 inspection. The inspectors reviewed maintenance work order 3102171501, which documented repairs to the corroded angle toe plate and moisture barrier at azimuth 186, and repairs to several sections of the moisture barrier identified during the March 2000 refueling outage documented in CR 00-0491. These repairs were completed prior to restart of Unit 3 in 2003.

During the October 2004, outage, the licensee identified additional areas with a degraded moisture barrier prior to the inspectors' walkdown, however, the deficiencies were not entered into the corrective action program, until questioned by the inspector, nor were repairs planned for the current outage. Subsequent to the inspection, CR 2004-12917 was initiated to document the degraded sections of the moisture barrier. Interim disposition of the CR involved removal of a 12 inch long piece of the defective moisture barrier and inspection of the angle toe plate. The CR stated that only minor rust was observed on the vertical leg of the angle weld and final disposition would address long term repairs. Licensee engineers concluded that corrosion of the liner was not an immediate concern because the liner was protected by a mastic layer which served as the primary moisture barrier. However, the inspector noted that because the mastic layer cannot be inspected its' condition is unknown. In addition, the mastic layer may provide a flow path for water to the horizontal liner plate. The licensee intends to inspect the remaining one-third of the moisture barrier during the March 2006 refueling outage

The inspector reviewed the licensee's evaluation of Information Notice (IN) 2004-009, Corrosion of Steel Containment and Containment Liner, issued on April 27, 2004. This IN disseminated operating experience and discussed the importance of maintaining the leak-tight integrity of the moisture barrier to prevent corrosion of the embedded liner plate. The licensee performed an evaluation of the applicability of IN 2004-009 to Turkey Point under CR 2004-2478 and determined that their containment inspection program was adequate based on issues they had previously identified in both Units 3 and 4. The inspectors concluded the licensee's review of the IN was a missed opportunity to identify the deficiencies with the moisture barrier. The licensee's review of the IN is considered an example of a cross-cutting aspect of problem identification and resolution.

Analysis: The degraded condition was evaluated as a Barrier Integrity performance deficiency and was of greater than minor significance because if left uncorrected, failure to repair the moisture barrier could lead to more significant degradation of the containment. The finding was of very low safety significance (Green) because the existing condition did not result in an actual open pathway in the physical integrity of the containment. This was demonstrated by the performance of a Type A containment leak rate test in November, 2004. In addition, the inspectors identified that the licensee did not initiate a CR to document the degraded moisture barrier condition during the Fall, 2004 refueling outage, until questioned by the inspector.

This was considered to be a second cross-cutting aspect of problem identification and resolution.

Enforcement: 10 CFR Part 50.55a(b)(2)(ix), "Examination of metal containments and the liners of concrete containments," requires containment inservice inspections to be performed in accordance with ASME Section XI, Subsection IWE. Subsection IWE of Section XI of the 1992 Edition with the 1992 Addenda of the ASME Code specifies the requirements for visual examination and inservice inspection of the metal liner of concrete containments.

Article IWE-2000 requires examination listed in Table IWE-2500 be completed to meet the inservice inspection program requirements. Item number E5.30 of this table requires a visual inspection of moisture barriers at containment-to-metal interfaces. The containment moisture barrier materials include caulking, flashing, and other sealants used for this application. The specified acceptance standard for moisture barriers found in IWE-3513 requires visual examination for wear, damage, erosion, tear, surface cracks, or other defects that permit intrusion of moisture against inaccessible areas of the pressure retaining surface of the containment liner. ASME Section XI, Subsection IWE, Paragraph IWE-3513.1 requires defective moisture barriers to be repaired or replaced.

Paragraph IWE-1241 requires augmented inspections be performed on areas exposed to standing water, repeated wetting and drying, persistent leakage, and those with geometries that permit water accumulation.

Paragraph IWE-2430 requires performance of additional examinations, that is expansion of the sample size, when flaws or defects exceeding the acceptance criteria of Table IWE-3410-1 are identified. Wear, damage, erosion, tears, surface cracks or other defects that may violate the leak-tight integrity of the moisture barrier exceed the acceptance criteria of Table IWE-3410-1.

Paragraph IWE-2420 requires re-examination of areas of degradation during the next inspection period.

Contrary to the above, the licensee violated 10 CFR Part 50.55a(b)(2)(ix) and ASME Section XI, Subsection IWE, as identified in the following four examples:

- Contrary to ASME Section XI, Subsection IWE, Paragraph IWE-3513.1, on November 2, 2004, it was determined that the licensee failed to repair defects identified in the moisture barrier in March, 2000, or replace the moisture barrier until March 2003. Additionally defects identified in 2004 were not repaired or replaced.

- Contrary to ASME Section XI, Subsection IWE, Paragraph, IWE-1241 , as of November 2, 2004, augmented inspections were not performed to examine the moisture barrier and areas at the junction of the liner plate and Elevation 14.0 concrete floor although these areas were known to be exposed to standing water, repeated wetting and drying, persistent leakage, and had geometries that permit water accumulation.

- Contrary to ASME Section XI, Subsection IWE, Paragraph IWE-2430, additional inspections were not performed to examine additional areas (expand sample size) when defects were identified during the March 2000 IWE inspection.

- Contrary to ASME Section XI, Subsection IWE, Paragraph IWE-2420, areas that were identified during the March 2000 IWE inspection as being degraded were not re-examined in subsequent outages.

These findings were documented on November 2, 2004, in CR 2004-12917. A contributing factor to the violation was an inadequate procedure which was used to conduct the inspections, FP&L Procedure NDE 4.7, Visual Examination of Reactor Building Containment Vessel General Visual/VT-1/VT-3, Rev. 1. The inspection findings were further discussed with the licensee during a re-exit teleconference on January 6, 2005, when the inspectors provided additional information regarding the inspection findings. The licensee entered two additional condition reports into their corrective action system as a result of these discussions to assure all aspects of the violation examples would be addressed. These were CR numbers 2005-446 and 2005-459. However, because the violation was of very low safety significance and was entered into the licensee's corrective action program, the violation is being treated as a non-cited violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy, and is identified as NCV 05000250/2004005-01, Four Examples of Violation of 10 CFR Part 50.55a(b)(2)(ix) for Failure to Correct Deficiencies Identified During Examination of the Unit 3 Containment Moisture Barrier, Failure to Conduct Augmented Inspections, Failure to Expand The Sample Size, and Failure to Perform Re-examination of Areas of Degradation During the next Inspection Period in Accordance with Requirements of Subsection IWE of ASME Section XI.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the following two equipment problems and associated CRs to verify the licensee's maintenance efforts met the requirements of 10 CFR 50.65 (Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants) and Administrative Procedure 0-ADM-728, "Maintenance Rule Implementation." The inspectors' efforts focused on maintenance rule scoping, characterization of the failed components, risk significance, determination of (a)(1) classification, corrective actions, and the appropriateness of established performance goals and monitoring criteria. The inspectors also interviewed responsible engineers and observed some of the corrective maintenance activities. Furthermore, the inspectors verified that equipment problems were being identified at the appropriate level and entered into the corrective action program.

- CR 04-9649, Unit 3, Power Operated Relief Valve, PCV-3-456
- CR 04-10231, Unit 3, 3A Charging Pump packing leakage

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors completed in-office reviews and control room inspections of the licensee's risk assessment of five emergent or planned maintenance activities. The inspectors compared the licensee's risk assessment and risk management activities against the requirements of 10 CFR 50.65(a)(4); the recommendations of Nuclear Management and Resource Council 93-01, "Industry Guidelines for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 3; and Procedures 0-ADM-068, "Work Week Management" and O-ADM-225, "On Line Risk Assessment and Management." The inspectors also reviewed the effectiveness of the licensee's contingency actions to mitigate increased risk resulting from the degraded equipment. The inspectors evaluated the following risk assessments during the inspection:

- Unit 3, 3A EDG and 3A 4160 Volt Bus Outage risk assessment for work conducted on October 4 - 7, 2004
- Unit 4, Startup Transformer breaker maintenance risk assessment for work conducted on October 5, 2004
- Unit 4 , risk assessment for the 4C Charging Pump maintenance conducted on October 29, 2004
- Unit 3 and Unit 4, risk assessment for the 3B EDG and 3B sequencer maintenance and testing conducted on November 2, 2004
- Unit 3, risk assessment for the 3A integrated safeguards testing activities conducted on November 3, 2004

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-Routine Plant Evolutions and Events

a. Inspection Scope

The inspectors evaluated operator, maintenance and engineering response and performance for the following non-routine plant evolutions to ensure they were appropriate and in accordance with the required procedures. The inspectors also evaluated performance problems to ensure that they were entered into the corrective action program. Licensee procedures and documents reviewed are included in the Attachment to this report. The following events or evolutions were reviewed:

- On December 14, 2004, the licensee manually tripped Unit 3 from full power due to a fire in the HP turbine bearing area. The inspectors reviewed the licensee's post trip review report and observed the recovery activities and subsequent reactor startup.

- On December 17, 2004, the inspectors observed preparations for, and witnessed startup of Unit 3. The inspectors focused particular attention to monitoring personnel actions, communications, and teamwork during this evolution.

- On December 25 through December 27, 2004, the inspectors observed and evaluated operator, maintenance and engineering response to the Unit 4 manual reactor trip. The inspectors reviewed the licensee's post trip review report, and observed the recovery activities and subsequent reactor power increase to full power.

- On December 29 through December 31, 2004, the inspectors observed and/or evaluated operator, maintenance and engineering response to the Unit 3 manual reactor trip when a turbine plant cooling water leak occurred in the turbine exciter housing. The inspector reviewed the licensee's post trip review report, and observed or discussed the recovery activities and plans for reactor power increase to full power.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed six interim disposition and operability determinations associated with the following CRs to ensure that TS operability was properly supported and the system, structure or component remained available to perform its safety function with no unrecognized increase in risk. The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR), applicable supporting documents and procedures, and interviewed plant personnel to assess the adequacy of the interim CR disposition.

- Unit 3, CR 04-8687, Unanalyzed condition on the 3C Component Cooling Water (CCW) heat exchanger internal threads of inlet channel head flange
- Unit 3, CR 04-8768, 3A EDG Load Sequencer Relay 127X2/3A5 sticking during test
- Unit 3, CR 04-9649, PCV-3-456 As-found diagnostic test results were unacceptable
- Unit 3, CR 04-10004, 3AA21 Primary Connection Assemblies
- Unit 4, CR 04-10674, 'C' Auxiliary Feedwater (AFW) turbine governor valve stem anti-rotation device degradation
- Unit 4, CR 04-10837, Sequencer blocking relay LED did not illuminate as expected during manual test

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modification

a. Inspection Scope

The inspectors reviewed the documentation for Plant Change and Modification (PC/M) 04-163 to alter the Unit 3 and 4 Steam Generator Feed Pump recirculation flow control valve control circuitry. The design change was implemented to prevent steam generator feed pump recirculation valve cycling following a manual reactor plant trip. The inspectors reviewed the 10 CFR 50.59 screening, safety classification determination, seismic evaluation and Appendix R review performed by the licensee, and verified that TS changes and NRC approval were not required for this plant design change. The inspectors also conducted a partial walkdown of the changes made to control circuits in the Unit 3 control room to verify proper installation.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

For the six post maintenance tests listed below, the inspectors reviewed the test procedures and either witnessed the testing and/or reviewed test records to determine whether the scope of testing adequately verified that the work performed was correctly completed and demonstrated that the affected equipment was functional and operable. The inspectors reviewed the requirements of Procedure 0-ADM-737, "Post Maintenance Testing," to verify that they were incorporated into test requirements. The inspectors reviewed the following WOs and/or procedures:

- Unit 3, 3A Spent Fuel Pit Cooling Pump post maintenance testing following maintenance in accordance with Procedure 3-OSP-033.1, "Spent Fuel Pit Cooling Pump Inservice Test," conducted on September 29, 2004.
- Unit 4, 'C' AFW pump post maintenance test following maintenance in accordance with Procedure 4-OSP-075.2, "Auxiliary Feedwater Train 2 Operability Verification," conducted on October 12, 2004.
- Unit 3, 3D 4160 Volt bus post maintenance testing following maintenance in accordance with Procedure 3-OP-005, "4160 Volt Buses A, B, and D," conducted on October 27, 2004.
- Unit 3, 3A Charging Pump post maintenance testing following maintenance in accordance with Procedure 3-OSP-047.1, "Charging Pumps/Valves Inservice Test," conducted on October 27, 2004.

- Unit 3, 3A Sequencer post maintenance testing following maintenance in accordance with WO 34019252 " Sequencer Terminal Strip Replacement", conducted on November 1, 2004.

- Unit 3, Containment post maintenance testing following maintenance for restoration of the temporary containment opening in accordance with Procedure 3-OSP-051.16, "Integrated Leakage Rate Test," conducted on November 15, 2004.

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities

The inspectors evaluated licensee outage activities as described below, to verify that licensees considered risk in developing outage schedules, adhered to administrative risk reduction methodologies they developed to control plant configuration, and adhered to operating license and TS requirements that maintained defense-in-depth. The inspectors also verified that the licensee develop mitigation strategies for losses of the following key safety functions:

- decay heat removal
- inventory control
- power availability
- reactivity control
- containment

Documents reviewed by the inspectors are listed in the Attachment.

.1 Review of Outage Plan

a. Inspection Scope

Prior to the outage, the inspectors reviewed the licensee's outage risk control plan to verify that the licensee had performed adequate risk assessments and had implemented appropriate risk-management strategies when required by 10CFR50.65(a)(4).

b. Findings

No findings of significance were identified.

.2 Monitoring of Shutdown Activities

a. Inspection Scope

The inspectors observed portions of the plant shutdown and cooldown process to verify that TS cooldown restrictions were followed.

b. Findings

No findings of significance were identified.

.3 Licensee Control of Outage Activities

a. Inspection Scope

During the outage, the inspectors observed the items or activities described below, to verify that the licensee maintained defense-in-depth commensurate with the outage risk-control plan for key safety functions and applicable TS when taking equipment out of service.

- Clearance Activities
- Reactor Coolant System Instrumentation
- Electrical Power
- Residual Heat Removal (RHR)
- Spent Fuel Pit Cooling
- Inventory Control
- Reactivity Control
- Containment Closure

The inspectors also reviewed the licensee's responses to emergent work and unexpected conditions, to verify that resulting configuration changes were controlled in accordance with the outage risk control plan, and to verify that control-room operators were kept cognizant of the plant configuration.

b. Findings

No findings of significance were identified.

.4 Reduced Inventory and Mid-loop Conditions

a. Inspection Scope

During this Refueling Outage, the licensee did not reduce the reactor coolant system (RCS) water level to reduced inventory or mid-loop conditions. However, the licensee did drain the RCS to just below the reactor vessel flange for head removal operations. The inspectors observed the RCS drain down and reviewed the planned activities during this drain down condition to assess the effect of the critical parameters that affected RCS time to boil. The inspectors reviewed the Unit 3 time-to-boil curves as well as licensee controls and administrative procedures governing the RCS drain down operation. The inspectors verified that multiple RCS water level indications were available and that operators were appropriately monitoring RCS water level to identify unexpected RCS inventory changes both during the actual draining of the RCS and during the duration of the RCS drained down condition.

b. Findings

No findings of significance were identified.

.5 Refueling Activities

a. Inspection Scope

The inspectors observed fuel handling operations (removal, inspection, and insertion) and other ongoing activities to verify that those operations and activities were being performed in accordance with TS and approved procedures. Also, the inspectors observed refueling activities to verify that the location of the fuel assemblies was tracked, from core offload through core reload.

b. Findings

No findings of significance were identified.

.6 Monitoring of Heatup and Startup Activities

a. Inspection Scope

Prior to mode changes and on a sampling basis, the inspectors reviewed system lineups and/or control board indications to verify that TS, license conditions, and other requirements, commitments, and administrative procedure prerequisites for mode changes were met prior to changing modes or plant configurations. Also, the inspectors periodically reviewed RCS boundary leakage data, and observed the setting of containment integrity, to verify that the RCS and containment boundaries were in place and had integrity when necessary. Prior to reactor startup, the inspectors walked down containment to verify that debris had not been left which could affect performance of the containment sumps.

b. Findings

No findings of significance were identified.

.7 Identification and Resolution of Problems

a. Inspection Scope

Periodically, the inspectors reviewed the items that had been entered into the licensee's corrective action program, to verify that the licensee had identified problems related to outage activities at an appropriate threshold and had entered them into the corrective action program. For the significant problems documented in the corrective action program and listed below, the inspectors reviewed the results of the licensee's investigations, to verify that the licensee had determined the root cause and implemented appropriate corrective actions, as required by 10CFR50, Appendix B, Criterion XVI, Corrective Action.

- CR 2004-11329, Cable failed in containment Pressurizer Control Channel PT-3-445
- CR 2004-12237, RHR shutdown cooling suction valve HCV-3-758 failure to respond
- CR-2004-11912, Potential for failure of the lower disc retainer of MOV-750 and 751

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors either reviewed or witnessed the following five surveillance tests to verify that the tests met the TS, the UFSAR, the licensee's procedural requirements and demonstrated the systems were capable of performing their intended safety functions and their operational readiness. In addition, the inspectors evaluated the effect of the testing activities on the plant to ensure that conditions were adequately addressed by the licensee staff and that after completion of the testing activities, equipment was returned to the positions/status required for the SSC's to perform its safety function. The tests reviewed included one inservice test (IST.)

- Procedure, 4-OSP-023.1, "Diesel Generator Operability Test," for the 4A EDG Monthly Test
- Procedure 4-OSP-075.1, "Auxiliary Feedwater Train 1 Operability Verification"
- Procedure 3-OSP-051.5, "Local Leak Rate Tests for CV-3-4668B" (Reactor Coolant Drain Tank Containment Isolation Valve) - Inservice Test
- Procedure 4-OSP-023.1, "Diesel Generator Operability Test," for the 4B EDG
- Monthly Test
- Procedure 4-OSP-024.2, "Emergency Bus Load Sequencers Manual Test," for the 4B Emergency Bus Load Sequencer

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness (EP)

1EP6 Drill Evaluation

a. Inspection Scope

On December 14, 2004, the inspectors observed an operating crew in the simulator during the fourth quarter emergency plan drill of the site emergency response organization. During the drill the inspectors assessed operator actions to verify that emergency classification, notification, and protective action recommendations were made in accordance with the emergency plan implementing procedures and 10 CFR 50.72 requirements. Additionally, the inspectors reviewed whether the initial activation of the emergency response centers was correctly conducted. TS required actions during the

drill were reviewed to assess correct implementation. Drill critique items were discussed with the licensee and reviewed to verify that drill issues were identified and captured. Licensee procedures and documents reviewed are included in the Attachment to this report.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Controls to Radiologically Significant Areas

a. Inspection Scope

Access Controls Licensee program activities for monitoring workers and controlling access to radiologically-significant areas and tasks during the current Unit 3 refueling outage were inspected. The inspectors performed in-depth reviews of access controls and Radiation Protection (RP) planning for reactor vessel head replacement activities. The inspectors evaluated procedural guidance; directly observed implementation of administrative and established physical controls in both the containment and auxiliary building; assessed worker exposures to radiation and radioactive material; and appraised radiation worker and technician knowledge of, and proficiency in implementing Radiation Protection (RP) program activities.

The inspectors toured various areas of the radiologically controlled area (RCA) including the auxiliary building, rad waste building, containment, and equipment and steam generator storage facilities. During the tours the inspectors evaluated physical and administrative controls which included postings, barricades, locks, and intervention by RP Technicians.

The inspectors performed independent surveys of various areas in the auxiliary building using an NRC provided instrument and concurrent surveys inside containment using an instrument provided by the licensee. Dose rates were compared to documented survey results. The inspectors evaluated the use and placement of continuous air monitors and remote reading area radiation monitors.

The inspectors selected several ALARA planning packages and reviewed the ALARA planning considerations, dose estimates, respiratory protection determinations, recommended engineering controls, and the radiation work permits (RWPs) that were developed from the planning packages. The electronic alarming dosimeter (EAD) setpoints for dose and dose rate were compared to RWP requirements and survey results. Worker knowledge was assessed by questioning workers on their EAD alarm setpoints and the expected response if an alarm or a malfunction occurred.

The inspectors assessed the use of engineering controls on potential airborne radioactivity producing evolutions. The inspectors observed use of air supplied bubble hoods and discussed the requirements for standby rescue personnel in accordance with 10 CFR 20.1703(f) with an RP Supervisor. The inspectors discussed dose assessments with dosimetry personnel and evaluated the initial screening of personnel contamination events. The inspectors evaluated the physical and programmatic controls for highly activated or contaminated non fuel items stored within the spent fuel pool. The inspectors discussed the controls for high and very high radiation areas with RP Management and Supervision.

RP Technician and radiation worker performance was observed and evaluated both directly and via closed circuit television. Remote RP coverage through use of closed circuit TV with telemetric dosimetry and audible communications was evaluated. The remote RP coverage response due to a temporary loss of power of the cameras was evaluated.

RP program activities were evaluated against 10 CFR 19.12; 10 CFR 20, Subparts B, C, F, G, and J; UFSAR details in Section 11; Waste Disposal and Radiation Protection System; TS Sections 6.8, Procedures and Programs and 6.12, High Radiation Area (HRA); and approved licensee procedures. Licensee guidance documents, records, and data reviewed within this inspection area are listed in Section 2OS1 of the report Attachment.

Problem Identification and Resolution Licensee CRs associated with radiological controls, personnel monitoring, and exposure assessments were reviewed and discussed with responsible licensee representatives. The inspectors reviewed a listing of plant CRs for the period of October 1, 2003 - October 1, 2004, and selected four of the more significant CRs for further review. The inspectors assessed the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with the licensee procedures. Documents reviewed are listed in Section 2OS1 of the report Attachment.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation

a. Inspection Scope

Personnel Survey Instrumentation During the period of October 4-8, 2004, the inspectors completed the Radiation Monitoring Instrumentation and Protective Equipment inspection that had been started in February 2004. The inspectors reviewed RP Technician instrument selections and observed operability checks for hand-held survey meters.

The inspectors observed the calibration verification of a teletector using a J.L. Shephard calibration source. The source certificate for the J.L. Shepard calibration source was reviewed for traceability to NIST. The inspectors observed RP Technicians performing and documenting routine radiation surveys on several elevations in the U3 containment.

Licensee activities associated with personnel radiation monitoring instrumentation were reviewed against TS 6.8.1; 10 CFR 20.1501; and applicable licensee procedures listed in Section 2OS3 of the report Attachment.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

.1 Reactor Safety Cornerstone Performance Indicator Verification

a. Inspection Scope

The inspectors reviewed submittals for the six performance indicators (PIs) listed below for the period from the 3rd quarter of 2003 through the 3rd quarter of 2004, to verify the accuracy of the PI data reported. PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 2, were used to verify the basis in reporting for each data element. The inspectors also reviewed a selection of Licensee Event Reports (LERs), portions of Unit 3 and Unit 4 operator log entries, daily morning reports (including the daily CR descriptions), system health reports, monthly operating reports, and PI data sheets to verify that the licensee had adequately identified the safety system unavailability during the previous four quarters. This number was compared to the number reported for the PI during the current quarter. In addition, the inspectors also interviewed licensee personnel associated with the PI data collection, evaluation, and distribution.

Reactor Safety Cornerstone

- Unplanned Scrams per 7000 Critical Hours, Unit 3
- Unplanned Scrams per 7000 Critical Hours, Unit 4
- Scrams With Loss of Normal Heat Removal, Unit 3
- Scrams With Loss of Normal Heat Removal, Unit 4
- Unplanned Transients per 7000 Critical Hours, Unit 3
- Unplanned Transients per 7000 Critical Hours, Unit 4

b. Findings

No findings of significance were identified.

.2 Radiation Safety Cornerstone Performance Indicator Verification

a. Inspection Scope

The inspectors sampled licensee data for the PIs listed below. To verify the accuracy of the PI data reported during the period reviewed, PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline," Rev. 2, were used to verify the basis in report for each data element.

Occupational Radiation Safety (OS) Cornerstone

The inspectors reviewed Occupational Exposure Control Effectiveness PI data collected from January 2004, through October 2004, for the OS Cornerstone. For the reviewed period, the inspectors assessed CAP records to determine whether HRA, very high radiation area, or unplanned exposures, resulting in Technical Specification or 10 CFR 20 non-conformances, had occurred during the period reviewed. In addition, the inspectors reviewed selected personnel contamination event data, internal dose assessment results, and EAD alarms associated with dose rates exceeding 1 rem/hr and cumulative dose rates exceeding established set-points from November 2003, through October 2004. Reviewed documents relative to this PI are listed in Section 4OA1 of the report Attachment.

Public Radiation Safety (PS) Cornerstone

The inspectors reviewed the RETS/ODCM Radiological Effluent Release Occurrences PI data for the PS Cornerstone from November 2003 , through October 2004. For the review period, the inspectors reviewed data reported to the NRC, and CR documents listed in Section 4OA1 of the report Attachment. In addition, the inspectors reviewed out-of-service effluent monitor logs and effluent release permits.

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution

.1 Daily Review

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 licensee's corrective action program. This review was accomplished by reviewing daily hard copy summaries of CRs and by reviewing the licensees electronic CR database.

b. Findings

No findings of significance were identified

.2 Semi-Annual Trend Review

a. Inspection Scope (71152)

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," the inspectors performed a review of the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on human performance errors and repetitive equipment issues, but also considered the results of daily inspector corrective action program item screening discussed in section 4OA2.1 above, licensee trending efforts, and licensee human performance results. The inspectors review nominally considered the six month period of June 2004 through December 2004, although some examples expanded beyond those dates when the scope of the trend warranted. The review also included equipment issues identified in the Unit 3 and Unit 4 Intake Cooling Water System Health Reports, human performance issues identified in Departmental Human Performance Corrective Action Program Rollup Reports for the Operations, Maintenance and Engineering Departments, as well as the Turkey Point Plant Corrective Action Program Trend Report. The inspectors compared their results with those contained in the licensees latest quarterly corrective action program rollup trend reports and Intake Cooling Water system health report. Corrective actions associated with a sample of the issues identified in the licensees reports were reviewed for adequacy.

The inspectors also evaluated the departmental corrective action rollup reports against the requirements of the licensee's corrective action program as specified in Procedure NAP-204, "Condition Reporting," and Procedure 0-ADM-533, "Condition Report Trending."

a. Findings

There were no findings of significance identified. The inspectors evaluated the licensee trending methodology and observed that the licensee had performed a detailed review. The inspectors compared the licensee process results with the results of the inspectors' daily screening and did not identify any discrepancies or potential trends in the corrective action program data that the licensee had failed to identify. During this inspection period, both the licensee and the inspectors identified a negative trend in manual reactor trips (two on Unit 3 and one on Unit 4) caused by secondary system equipment issues. The licensee has documented each of these events separately in CRs 2004-16994, 2004-17722, and 2004-17947. The licensee has subsequently initiated CR 2004-18025 to perform an evaluation of all three events for a common cause of past issues. The inspectors will perform further event followup baseline inspections for each of these events to determine if cross cutting issues in the area of human performance or problem identification and resolution were involved.

.3 Cross-References to Problem Identification and Resolution findings documented Elsewhere

- A self revealing Green NCV was identified and documented in Section 4OA3 of this report, which directly involved cross cutting aspects of problem identification and resolution, that being inadequate assessment and initial corrective actions which resulted in the 4B High Head Safety Injection (HHSI) pump being inoperable from June 6, 2004 until August 5, 2004.

- Section 1R08 describes a finding where the licensee failed to comply with ASME Section XI, Subsection IWE, to correct deficiencies identified during inspection of the Unit 3 containment moisture barrier. Associated with this finding, licensee engineers did not initiate a CR to document and disposition additional moisture barrier deficiencies discovered during the Fall 2004 refueling outage. A CR was initiated after the inspectors questioned the extent of the deficiencies identified by licensee engineers during the current outage, and resolution of the deficiencies. This was considered to be a cross-cutting aspect of problem identification and resolution.

- Section 1R08 describes a second cross cutting aspect in the area of problem identification and resolution which involved a missed opportunity to identify the observed deficiencies because of an inadequate review of IN 2004-009.

4OA3 Event Follow-up

.1 (Closed) Licensee Event Report (LER) 05000251/2004-003-00, Oil Leak Causes High Head Safety Injection (HHSI) Pump to be Inoperable Longer Than Allowed by Technical Specifications

a. Inspection Scope

The inspectors reviewed the LER and associated CRs 2004-1977, 2004-7770 and 2004-5529, which documented this event in the corrective action program, to verify that the cause of the failure of the 4B HHSI Pump was identified and that the corrective actions were reasonable. On August 3, 2004, the 4B HHSI Pump was found with the outboard bearing housing oiler empty, rendering the pump inoperable. The inspectors reviewed the licensee's corrective action described in the LER, reviewed the associated CRs, and discussed the status of continuing corrective actions with appropriate personnel.

c. Findings

Introduction. A self revealing Green NCV of TS 3.5.2, Action statement c. occurred as a result of the licensee discovering that one of the four required HHSI pumps was inoperable for greater than 30 days, and the unit was not shut down, as required. The pump was discovered to have less than the amount of lube oil needed for it to complete its required safety function and it was determined that this condition had existed for 60 days.

Description. On August 3, 2004, while Unit 3 and Unit 4 were operating in Mode 1, the outboard bearing oiler for the 4B HHSI Pump was found empty. Subsequent investigation determined that the previously identified outboard bearing oil leak (identified in CR 2004-1977) experienced a step change in leak rate rendering the pump inoperable on or about June 6, 2004. Therefore, the 4B HHSI pump was considered inoperable due to the increased oil leakage from June 6, 2004 until it was repaired on August 5, 2004. On August 3, the licensee removed the 4B HHSI Pump from service to repair the pump. On August 5, following repairs, the licensee placed the pump back in service, and exited Technical Specification 3.5.2 Action statement c. The licensee's investigation revealed that the cause of the 4B HHSI Pump oil leak involved a human performance error, which resulted in the anti-rotation pin being jammed into the thrust ring and use of the incorrect gasket/shim material during maintenance conducted in 1994. This distorted the bearing cover face and prevented the gasket/ shim from sealing properly. In addition, the gasket/shim material found in the housing was not supplied by the original equipment manufacturer and was found to be susceptible to degradation by oil over time. The licensee also determined that the cause in the delay in identifying the need to correct the oil leak was a weakness in documentation consistency and retrievability under the oil addition program for safety-related components. In the case of the oil leak of the 4B HHSI pump, the oil leak rate was being monitored by one organization, without the knowledge that oil additions were being made by another organization.

In order to ensure long term core cooling (30-day mission time for the HHSI pumps) without any oil addition, it was calculated that the oil leak rate must be less than 0.13 ounces per day. The oil addition records for the 4B HHSI pump outboard bearing oiler indicated that the leakage rate was less than 0.13 ounces per day until June 6, 2004. From June 6, 2004 until August 3, 2004, the oil addition records indicated that the leakage rate increased from approximately 0.23 ounces per day to approximately 1 oz per day. During this period the system engineer was unaware of the numerous times make-up oil was added to the 4B HHSI pump. Therefore, this omission directly affected the system engineer's leak rate monitoring and calculations in a non-conservative manner. The licensee determined that the HHSI pump was inoperable from June 6 until August 5, 2004, a total of 60 days. This exceeds the 30 day Technical Specification Action of 30 days.

Analysis. The licensee's failure to adequately assess and implement initial corrective actions for an oil leak from the 4B HHSI pump was a performance deficiency which resulted in Unit 3 and Unit 4 operating in a condition prohibited by TS 3.5.2. This finding was greater than minor because it involved the equipment performance attribute of the mitigating system cornerstone and affected the objective of ensuring that equipment is available and capable to respond to an event. Because the finding involved an actual loss of safety function of one High Head Safety Injection Pump, for longer than the TS allowed outage time, a Phase 2, Significance Determination was completed using NRC Manual Chapter 0609, Appendix A. The most dominant core damage sequence involved the small break loss of coolant accident sequence. Subsequently, a Phase 3 was performed by a Regional Senior Reactor Analyst and determined that this finding was of very low safety significance (Green) because one of the remaining three HHSI pumps (two for Unit 3 and one for Unit 4) could perform its safety function. This finding directly involved cross cutting aspects of problem identification and resolution, that being

inadequate assessment and initial corrective actions which resulted in the 4B HHSI pump being inoperable from June 6, 2004 until August 5.

Enforcement. TS 3.5.2 requires, in part, that four Safety Injection (SI) pumps be maintained operable in modes 1,2 and 3**. If one SI pump is inoperable and the opposite unit is in Mode 1, 2, or 3, Action statement c., requires that the pump be restored to operable within 30 days or the unit be in at least hot standby within the next 12 hours and hot shutdown within the following 6 hours. Contrary to the above the 4B HHSI Pump was inoperable for 60 days due to an oil leak, and the actions of TS 3.5.2 Action statement c., were not taken. However, because the violation was of very low safety significance and was entered into the licensee's corrective action program as CR 2004-7770, the violation is being treated as a non-cited violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy, and is identified as NCV 050000250, 251/2004005-02, High Head Safety Injection Pump Inoperable Due to an Increase in a Previously Identified Oil Leak.

.2 (Closed) LER 05000251/2004-002-00, Automatic Reactor Trip Due to Low Steam Generator Level and Steam/Feedwater Flow Mismatch

On May, 14, 2004, Unit 4 experienced an automatic reactor trip from 100% power after the 4A Steam Generator Feedwater Flow Control Valve FCV-4-478 closed unexpectedly. The reactor operator (RO) identified the condition that caused the steam generator level deviation and placed the FCV-4-478 in manual control. The RO then manually tripped the reactor, but the automatic trip had already initiated. The closure of FCV-4-478 was determined to be caused by the failure of a capacitor in the Hagan feedwater flow controller, which resulted in the controller output failing to zero and closing the valve. This was caused by a failure of an undersized capacitor which was being used in a component that required a capacitor with a higher voltage rating. The root cause of the event was the inadequate implementation of a design change to replace an original undersized capacitor. The event was addressed in the licensee's corrective action program as CR 04-2591. This issue was also reviewed by the NRC and an inspector identified finding for inadequate corrective actions to preclude the use of the undersized capacitor was documented in the Section 4OA2 of NRC Inspection Report 050000250, 251/2004011-03. The licensee has taken corrective actions to address these issues. This LER is closed.

.3 (Closed) Licensee Event Report (LER) 05000251/2004-001-00, Inadequate Calibration Renders Radiation Process Effluent Monitor Inoperable

On March 9, 2004, the licensee determined that the method used to calibrate the plant vent gaseous effluent monitor, R-14 was not in accordance with TS and offsite Dose Calculation Manual (ODCM) calibration requirements. The inoperability dated back to 1984 when the calibration requirements were revised via a Licensed Amendment. The inspectors determined that this issue was an NRC identified finding for failure to correctly calibrate selected effluent monitoring instrumentation in accordance with ODCM requirements and documented in the Section 2PS1 of the NRC Inspection Report 05000250, 251/2004002-01. Subsequently, the licensee performed an extent of condition review and discovered that TS Table 3.3-4 Action 28 was not met because two irradiated fuel assemblies were moved from the Unit 4 spent fuel pool (SFP) to the reactor on October 21, 2003, with the plant vent SPING out of service and R-14 inoperable due to incorrect calibration. The cause of the event was not properly translating the TS calibration requirements into plant procedures. Corrective actions included instrument calibration, revision of calibration procedures, and enhancing TS License Amendment implementation process. The event was addressed in the licensee's corrective action program as CRs 04-095 and 04-255. The inspectors reviewed the subject LER and determined that the finding is more than minor because it was associated with the Public Radiation Safety Cornerstone plant equipment/process radiation monitoring attribute and affected the associated cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operations. The finding is of very low safety significance (Green) because there was no failure to assess dose to the public and doses did not exceed Appendix I to10 CFR Part 50 design criteria. This licensee-identified finding involved a violation of Action 28 of Technical Specification Table 3.3-4. The enforcement aspects of the violation are discussed in Section 4OA7. This LER is closed.

4OA4 Cross Cutting Aspects of Findings - Human Performance

Section 4OA5.4 describes a finding which involved the cross-cutting aspect of human performance, in that a QC inspection was completed prior to ensuring the appropriate conditions were established for the inspection. As a result the inspection was ineffective.

4OA5 Other Activities

.1 Reactor Pressure Vessel Head (RPVH) Replacement (71007)

a. Inspection Scope

The inspectors observed/reviewed the activities detailed below for the RPVH replacement to verify compliance with applicable Codes (ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through 2000 Addenda, Section II, 1989 Edition and Section III, 1965 Edition with Addenda through Summer 1965) as defined in PC/M 03-057, Rx Vessel Closure Head Replacement, Rev. 1.

The inspectors reviewed the following documents for the RPVH fabrication, NDE Examinations and receiving inspection activities:

- JQA-03-048 (1/49), Certified Material Test Report
- 2010-1-1-2, Record of Heat Analysis
- 2010-1-3, Record of Normalizing & Tempering
- 2010-1-10, Record of Quenching & Tempering
- MET-03-053, Certified Material Test Report, (Nikko Inspection Service)
- 2010-1-20, Certificate of Compliance
- 2010-1-2-A2-1, UT Examination Results
- 2010-1-2-A2-2, MT Examination Results
- 2010-1-2-A2-3, VT Examination Results
- 02-5023321E-10, Areva Specification Drawing
- 08-5023846-04, Areva Design Specification
- 23-5048490-00, Framatome ANP Quality Assurance Data Package
- BUQATU/NCC1000, Areva Certificate of Compliance (RPVH), Rev. A
- BUQATU/NCC4000, Areva Certificate of Compliance (45 Thermal Sleeves and Guide Funnels), Rev. A

The inspectors reviewed the receiving inspection activities for the replacement RPVH as detailed in Florida Power & Light (FPL) SPEC-—085, Reactor Vessel Closure Head Forging Materials, Rev. 1 and SPEC-—088, Replacement of Reactor Vessel Closure Head Assemblies, Rev. 1.

Pre-service Inspection (PSI) and Baseline Inspections

The inspectors reviewed Framatome document 51-5049846-00, TP3 RPVH Replacement Baseline NDE Field Report, that documented the ASME Section XI PSI, and baseline inspections performed to provide baseline conditions for future inspections in accordance with U.S. Nuclear Regulatory Commission Order EA-03-09.

Relative to ASME Section XI PSI of the replacement RPVH, the inspectors reviewed the completed non-destructive evaluation (NDE) records for ultrasonic (UT), radiography (RT), and die penetrant (PT) examinations.

The baseline inspections consisted of: (1) automated inside diameter UT and eddy current (ECT) examination of 53 CRDMs and the vent line, (2) outside diameter and J-groove weld ECT examination of 53 CRDM penetrations, (3) under head visual (VT) examination of all J-groove welds and penetration outside diameters, (4) top of head bare metal VT examination of all penetrations, and (5) under head PT inspection of all penetration to head J-groove welds using “PT white” acceptance criteria. For these inspections, the inspectors reviewed the summary report of results, the PT records for the J-groove welds, a sample of the automated UT results, and a sample of NDE examiner certification results. In addition, NDE personnel certification records, NDE materials certification records, and NDE equipment certification records for these welds were reviewed.

Walkdown and Work Control/Design Package Review for RPVH

The inspectors reviewed the engineering evaluations and design changes associated with RPVH replacement activities to ensure conformance with requirements in the facility license, the applicable codes and standards, licensing commitments, and the regulations including 10 CFR 50.59.

The inspectors reviewed the Steam Generating Team's (SGT) Work Control Packages WP-03-1730, Concrete/Rebar Removal for Containment Access Opening and WP-03-1031, Install Service Platform. A walkdown of the service platform both outside and inside containment was conducted to verify that the temporary structure was in accordance with design drawings. The inspectors also observed the conditions of the containment access opening, the exposed rebar, the tendon ducts and the liner plate that was removed from the opening. A review of the associated design packages and drawings (PC/M 03-057, PC/M 03-059, PC/M 03-076, and PC/M 03-077) was conducted to confirm the licensee's disposition of issues and 10 CFR 50.59 applicability determination.

The inspectors performed a walkdown of the transport heavy haul route from the reactor vessel head assembly building to the service platform, to verify the clearances and locations of the buried piping and electrical duct banks as referenced in 0-GMM-102.18, "Implementation Procedure for Heavy Hauls." The inspectors reviewed WP-03-3310, Offload Transport Replacement Reactor Vessel Closure Head (RRVCH) to verify that the work and engineering evaluations had been completed and signed off as required. Additional equipment modifications such as lifting and rigging crane equipment were also visually examined per design specifications.

The inspectors reviewed the licensee and its contractor's corrective action database for issues identified during the process of replacing the Reactor vessel head, to verify that appropriate corrective actions were identified and tracked for appropriate review and actions.

b. Findings

No findings of significance were identified.

.2 Review of 10 CFR 50.59 Evaluations for the Replacement RPVH

a. Inspection Scope

The inspectors reviewed PC/M 03-057, Rx Vessel Closure Head Replacement, Rev. 1, and DCP 03-1-9914-0-001, Replacement Reactor Vessel Closure Head Assembly Upgrade Package including the associated 10 CFR 50.59 evaluation to verify that changes between the original RPVH and the replacement RPVH, and modifications resulting from installation of the replacement RPVH were properly evaluated in accordance with 10 CFR 50.59.

b. Findings

No findings of significance were identified.

.3 Containment Restoration Activities

Welding Activities

a. Inspection Scope

The inspectors examined restoration activities associated with the temporary construction opening (approximately 18 feet by 30 feet) in the containment liner, as detailed in the licensee's Plant Change/Modification PC/M 03-075, Containment Access Opening for U3 RVCH Replacement, Revision 1.

Activities associated with containment liner plate welding were observed/reviewed and compared with the applicable codes (ASME Boiler and Pressure Vessel Code (B&PV), Section VIII, 1998 Edition with 2000 Addenda and Section XI, 1992 Edition with 1992 Addenda) and FPL Specification 5610-C-47. For the liner plate welds (LP-1, LP-2, LP-3, LP-4, and LP-5) the inspectors visually inspected the inside and outside surfaces of the completed welds and reviewed the final radiographic (RT) film. In addition to visually inspecting the completed welds and review of the RT film, the inspection included: review of the welding procedure specification, including the supporting procedure qualification records; review of welder qualification records; review of welding material receipt inspection and certification records; review of in-process Weld Data Cards; review of Magnetic Particle Examination reports; review of Visual Examination reports; review of Bubble Test Reports; review of Quality Control (QC) involvement in the welding process; and review of QC and NDE personnel qualification and certification records.

For restoration of the reinforced concrete, the inspectors reviewed activities associated with installation of the containment opening reinforcing bar (rebar) and compared activities with the applicable Codes (ACI 318-63, Part IV-B, Building Code Requirements for Reinforced Concrete, 1963, and ASME Section III, Division 2, 1989 Edition, no Addenda). The inspection included review of the rebar splice procedure and ASME Code qualification records (including tensile test results) for the rebar splice process.

The inspectors also reviewed PC/M 03-075 to verify that the modification was properly evaluated in accordance with 10 CFR 50.59.

b. Findings

No findings of significance were identified.

.4 Installation of Concrete Activities

a. Inspection Scope

The inspectors examined restoration activities associated with the temporary construction opening (approximately 20 feet by 33 feet) in the containment, as detailed in the licensee's Plant Change/Modification (PC/M) Package 03-075, Containment Access Opening for U3 RVCH Replacement.

The inspectors reviewed activities associated with installation of the containment opening reinforcing bar (rebar). The inspectors observed in-process mechanical splicing (Barsplice swaged couplers) of splice 60E, 3-1730-MK-6-0. The inspectors visually inspected 24 horizontal mechanical splices and inspected rebar installation to verify proper bar size, spacing, splice length, and cover. The inspectors also performed visual inspection of eight welded rebar splices and witnessed installation of tendon 15H53. In addition, the inspectors reviewed the qualification records for 14 mechanical rebar splicers and the welding qualification records for six rebar welders.

Relative to installation of concrete, the inspectors witnessed placement of concrete in the containment wall to restore the temporary construction opening. The inspectors examined the reinforcing steel to ensure it was installed in accordance with design requirements, observed the concrete forms to ensure tightness and cleanliness, and that reinforcing steel was clean. The inspectors reviewed placement activities to ensure that activities pertaining to concrete delivery time, free fall, flow distance, layer thickness and concrete consolidation conformed to industry standards established by the American Concrete Institute. Concrete batch tickets were examined to ensure that the specified concrete mix was being delivered to the site. The inspectors also witnessed testing of the plastic concrete for slump, air, and temperature, unit weight, and molding of the concrete cylinders for testing. Reviews were performed to ensure concrete testing was performed and the cylinders were molded in accordance with applicable American Society for Testing and Materials (ASTM) requirements. In addition, the inspectors reviewed activities to ensure that concrete testing was performed by qualified inspectors from an independent testing company, and that concrete placement activities were continuously monitored by licensee and contractor quality control and quality assurance personnel.

The inspectors examined the concrete batch plant to verify proper storage and separation of materials, and temperature controls. The inspectors reviewed results of quality control acceptance testing performed on materials (cement, Komponent, fine and coarse aggregate, and admixtures) used for batching the concrete. The inspectors also reviewed records documenting inspection of the concrete batch plant and the concrete truck mixers. Activities were reviewed to determine if the contractor's inspection of the trucks and batch plant were performed in accordance with the guidance of the National Ready Mixed Concrete Association (NRMCA); the batch plant scales were calibrated in accordance with NRMCA recommendations; and mixer efficiency tests were performed on the truck mixers in accordance with ASTM C-94. The inspectors reviewed the concrete mix data to ensure that mix proportions for delivered concrete were selected based on trial concrete mix results, that QC acceptance criteria for the plastic concrete were based on the trail mixes, and that the trail mix met concrete strength requirements.

b. Findings

Introduction: A Green NCV of 10 CFR 50, Appendix B, Criterion V was identified by the inspectors for failure to follow procedures during repair of the Unit 3 containment opening. This involved inadequate pre-placement inspection of the cleanliness of the concrete forms which failed to identify free water which ponded in the base of the forms prior to placement of concrete for repair construction opening in the Unit 3 containment building.

Description: Prior to placement of concrete in the forms, the inspectors identified that free water had been permitted to accumulate in the bottom of the concrete forms. The depth of the water varied from zero inches in some areas to a depth of 6 inches in others, depending on the uniformity and slope of the base of the concrete opening. The pre-placement inspection had been performed by QC inspection personnel who failed to identify the presence of the water in the forms. The pre-inspection check list, Concrete Placement Report, had been signed off for final cleanup signifying that all dirt, debris, contaminants, and free water had been removed from surface against which fresh concrete was to be placed. The apparent source of the water was from water applied to pre-soak the concrete surfaces for 24 hours prior to placement. The QC inspection was conducted prior to the pre-soak evolution being completed. Section 13.5.1 of Specification 7012-SPEC-C-003, Containment Opening Concrete, Revision 1, required that the base of the construction opening in the containment be excavated to slope to drain to the exterior surface, and that at the time fresh concrete is placed, existing hardened concrete surfaces shall be in a saturated surface-dry condition with all free water removed. The water, estimated to be 25 gallons or more, was removed after the inspectors identified the problem and informed licensee personnel of the potential adverse affect of this quantity of water on the strength of the new concrete to be placed in the opening.

Analysis: The degraded condition was evaluated as a Barrier Integrity performance issue and was of greater than minor significance because if left uncorrected, failure to identify and remove the excess free water from the bottom of the concrete forms would have resulted in a reduction in the compressive strength of the replacement concrete and could have resulted in significant degradation of the containment. The failure to remove the water was of very low safety significance (Green) because the water was identified by the inspectors and removed prior to concrete placement, and did not result in an actual open pathway in the physical integrity of the containment. In addition, this finding involved the cross-cutting aspect of human performance, in that the QC inspection was completed prior to ensuring the appropriate conditions were established for the inspection. As a result the inspection was ineffective.

Enforcement: 10 CFR 50, Appendix B, Criterion V, requires activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, and shall be accomplished in accordance with these instructions, procedures, or drawings. Section 13.5.1 of Specification 7012-SPEC-C-003, Containment Opening Concrete, Revision 1, implements this requirement and required that QC technicians verify that the base of the construction opening in the containment be excavated to slope to drain to the exterior surface, and that at the time fresh concrete is placed, existing hardened concrete surfaces shall be in a saturated surface-dry condition with all free water removed.

Contrary to the above, although the step was completed by QC, the base of the construction had not been excavated with a slope to drain to the exterior, and water had accumulated in the bottom of the forms. The water, estimated to be 25 gallons or more, was removed after the inspectors identified the problem and informed licensee personnel of the potential adverse affect of this quantity of water on the strength of the new concrete to be placed in the opening. As a result of the inspectors' discovery on November 2, 2004, the licensee's contractor, SGT, initiated a nonconformance report, number 03-158, indicating that this deficiency was a condition adverse to quality. However, because the violation was of very low safety significance and was entered into the licensee's corrective action program, the violation is being treated as an NCV consistent with Section VI.A.1 of the NRC Enforcement Policy, and is identified as NCV 05000250/2004005-03, Failure to Perform the Pre-placement Inspection of the Unit 3 Containment Construction Opening Prior to Concrete Placement in Accordance with Requirements of Paragraph 13.5.1 of Specification 7012-SPEC-C-003, Rev. 1.

.5 Radiation Program (RP) Controls, Planning and Preparation

a. Inspection Scope

The inspectors reviewed the RP program controls, planning, and preparation for the replacement of the reactor vessel head. The inspectors reviewed the ALARA planning packages associated with removal of the old reactor head and subsequent replacement with a new integrated reactor head. This review included work activity evaluations, dose estimates, temporary shielding plans, usage of engineering controls for airborne radioactivity, and contamination control.

The inspectors reviewed several radiological work plans, Health Physics Department Instructions, and Health Physics Job Aids that had been created to assist with various contingencies and contamination control. The contingencies for adverse weather, including a hurricane storm surge, were discussed with the Health Physics Supervisor who was coordinating the health physics portion of the effort. Contingencies for loss of containment ventilation and effluent monitoring while the containment wall was open were also discussed.

Project RP staffing and training was reviewed to assess if sufficient RP support was available for a refueling outage with reactor vessel head replacement and 10 year in service inspection (ISI) being performed concurrently.

The inspectors discussed the packaging, subsequent storage, and ultimate disposal of the old reactor vessel head with RP Supervision. This discussion addressed the expected exposures to personnel occupying trailers within the protected area adjacent to the radiologically controlled area boundary, reactor vessel head packaged and shielded, the exceptions being requested from the Department of Transportation with regards to packaging requirements, and the final transportation of the reactor head. The clearance and disposition of the concrete removed from the containment opening to facilitate the passage of the reactor heads was discussed and the process was reviewed with RP management.

The inspectors reviewed several vendor documents detailing various options for storage, packaging, shielding and transport of the old reactor heads. Included in the documents were source term calculations detailing neutron activation and contamination levels to support shipping and burial of the head. The calculations included nuclides that are considered hard to detect and transuranics.

The replacement reactor head was examined by the inspectors for incorporation of ALARA principles which would facilitate maintenance and inspection while minimizing exposure. The design features were discussed with plant engineering, maintenance and RP personnel. The possible increase in neutron dose rates in upper containment at power as a consequence of switching from an external concrete missile shield to a steel shield internal to the reactor head upper support structure was discussed with RP personnel.

RP program activities and their implementation were evaluated against 10 CFR 19.12; 10 CFR Part 20, Subparts B, C, F, G, H, and J; 10 CFR 71; 49 CFR 172-178; TS Sections 6.8, Procedures and Programs, and 6.12, HRA; and approved licensee procedures. In addition, licensee performance was evaluated against Regulatory Guide 8.8, Information Relevant to Ensuring that Occupational Radiation Exposures at Nuclear Power Stations will be As Low As Reasonably Achievable Procedures and records reviewed within this inspection area are listed in Section 4OA5 of the report Attachment.

b. Findings

No findings of significance were identified.

.6 (Closed) NRC Temporary Instruction 2515/152, Reactor Pressure Vessel Lower Head Penetration Nozzles (NRC Bulletin 2003-02)

a. Inspection Scope

The inspectors reviewed licensee plans and activities relative to inspection of the reactor pressure vessel (RPV) lower head penetration nozzles in response to NRC Bulletin 2003-02. The inspection included review of nondestructive examination (NDE) procedure, review of procedure demonstration and calibration records, review of equipment certification records, and review of NDE personnel training and qualification records. Discussions were also held with licensee and contractor personnel. The activities were examined to verify licensee compliance with regulatory requirements and gather

information to help the NRC staff identify possible further regulatory positions and generic communications.

b. Observations and Findings

By FPL Letter L-2003-234 dated September 19, 2003, the licensee responded to NRC Bulletin 2003-02 and committed to perform a visual examination (VT-2) of all 50 RPV lower head penetrations at Turkey Point Units 3 and 4 during the next and subsequent refueling outages. The VT-2 visual examination was performed on Unit 4 during the October 2003 outage. Because of the high radiation associated with performing the bare metal VT-2 examination, by Letter L-2004-14, dated July 27, 2004, FPL changed its commitment for future inspections to perform UT examinations in lieu of a VT-2 visual examination. TI 2515/152 was intended to be completed if the licensee performed visual examinations. However, portions of the licensee's activities were reviewed and documented using this TI. At the time of the current NRC inspection, the UT examination of Unit 3 penetrations had not started, but procedures, personnel, and equipment were on site to perform the examination. The inspection included:

1) Verification that the examinations were performed by qualified and knowledgeable personnel.

   The inspectors found that the NDE examiners on site and approved for the planned examinations were trained and qualified with significant experience, including experience inspecting RPV head penetrations. In addition to qualification to Code requirements, UT examination personnel had additional training on RPV head inspections.

2) Verification that the examinations were performed in accordance with approved and demonstrated procedures.

   The Turkey Point RPV lower head has 50 instrument penetrations. The planned UT examination was to include all penetrations with the examination volume for each penetration to extend from a horizontal plane 2 inches above the weld toe to a horizontal plane 2 inches below the weld root. The examination procedure, Florida Power & Light Vendor Procedure VP-04-111 (Framatome ANP Procedure 54-ISI-167-02), required the use of remote mechanized UT scanning with automated data acquisition and collection. The procedure employed two sets of Time of Flight transducers, one with the beam directed in the circumferential direction and the other with the beam directed in the axial direction.

   The inspectors reviewed the Framatome ANP procedure. The NDE technique and procedure planned for use had been previously demonstrated under the MRP Inspection Demonstration Program.

Based on telephone conversations with licensee NDE personnel subsequent to completion of the inspection, the required inspection scope was successfully completed for all 50 penetrations and no service induced flaws, evidence of cracking , or evidence of leaking were identified.

.7 (Closed) NRC Temporary Instruction 2515/160, Pressurizer Penetration Nozzles and Steam Space Piping Connections in U.S. Pressurized Water Reactors NRC Bulletin 2004-01)

The inspectors reviewed the licensee's response to NRC Bulletin 2004-01 dated June 27, 2004 and determined that Turkey Point Units 3 & 4 pressurizer penetrations/nozzles and steam space piping connections contained all stainless steel or stainless steel clad lined low alloy for the integral full penetration nozzles. Also, there was no use of alloy 82/182/600 materials in the fabrication of Turkey Point Units 3 and 4 pressurizer penetrations/nozzles or connected steam space piping. The review scope for each unit included the pressurizer surge nozzle, spray nozzle, safety nozzles (3), relief nozzle, heater sleeves (78), instrument nozzles (9), and the connected steam space piping.

4OA6 Meetings, including Exit

Exit Meeting Summary

On January 13, 2005, the resident inspectors presented the inspection results to Mr. T. Jones and other members of his staff who acknowledged the findings. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

4OA7 Licensee-Identified Violation

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as an NCV.

Action 28 of Technical Specification Table 3.3-4 requires that if neither R-14 or plant vent SPING are operable, then suspend operations in the Unit 4 Spent Fuel Pool (SFP) area involving spent fuel manipulations. Contrary to the above, on October 21, 2003, two irradiated fuel assemblies were moved from the Turkey Point Unit 4 SFP to the reactor with plant vent SPING out of service and R-14 inoperable due to incorrect calibration. This was identified in the licensee's corrective action program as CRs 04-095 and 04-255. This finding was determined to be of very low safety significance (Green) because there was no failure to assess dose to the public and doses did not exceed Appendix I to10 CFR Part 50 design criteria.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:
A. Avella, Nuclear Project Manager, RPV Head Replacement
J. Cadogan, Engineering
M. Ferguson, Radiation Protection Supervisor
O. Hanek, Licensing Engineer
M. Jimenez, Radiation Protection Supervisor
J. Johns, Maintenance Rule Coordinator
W. Johns, Security Manager
T. Jones, Site Vice-President
M. McCoppin, Radiation Protection Supervisor
G. Mendoza, Chemistry Manager
S. Mihalakea, Licensing Engineer
M. Moran, Projects Engineering Manger
M. Murray, Emergency Preparedness Coordinator
M. Navin, Operations Manager
K O'Hare, Radiation Protection and Safety Manager
W. Parker, Licensing Manager
M. Pearce, Plant General Manager
W. Prevatt, Work Control Manager
D. Sipos, Construction Project Manager
B. Stamp, Operations Supervisor
T, Sweeney, Engineering Electrical Supervisor
C. Tudor, ISI NDE Supervisor

NRC personnel:

K. Weaver, Senior Resident Inspector

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

None

Opened and Closed

05000250/2004005-01	NCV	Four Examples of Violation of 10 CFR Part 50.55a(b)(2)(ix) for Failure to Correct Deficiencies Identified During Examination of the Unit 3 Containment Moisture Barrier, Failure to Conduct Augmented Inspections, Failure to Expand the Sample Size, and Failure to Perform Re-examination of Areas of Degradation During the next Inspection Period in Accordance with Requirements of Subsection IWE of ASME Section XI. (Section 1R08.2)
05000250, 251/2004005-02	NCV	High Head Safety Injection Pump Inoperable Due to an Increase in a Previously Identified Oil Leak (Section 4OA3.1)
05000250/2004005-03	NCV	Failure to Perform the Pre-placement Inspection of the Unit 3 Containment Construction Opening Prior to Concrete Placement in Accordance with Requirements of Paragraph 13.5.1 of Specification 7012-SPEC-C-003, Rev. 1. (Section 4OA5.4)

Closed

2515/160 (Docket 50-250)	TI	Pressurizer Penetration Nozzles and Steam Space Piping Connections in U.S. Pressurized Water Reactors (NRC Bulletin 2004-01) (Section 4OA5)
2515/152 (Docket 50-250)	TI	Reactor Pressure Vessel Lower Head Penetration Nozzles (NRC Bulletin 2003-02) (Section 4OA5)
05000251/2004003-00	LER	Oil Leak Causes High Head Safety Injection Pump to be Inoperable Longer Than Allowed by Technical Specifications (Section 4OA3)
05000251/2004002-00	LER	Automatic Reactor Trip Due to Low Steam Generator Level and Steam/Feedwater Flow Mismatch (Section 4OA3)
05000251/2004001-00	LER	Inadequate Calibration Renders Radiation Process Effluent Monitor Inoperable (Section 4OA3)

Discussed:

None

LIST OF DOCUMENTS REVIEWED

1R08: Inservice Inspection (ISI) Activities

Procedures

ENG-CSI 2.2 Planning and Reporting Results of Steam Generator Tubing Examinations, Rev. 17
ENG-CSI 2.0 ASME Section XI Inservice Inspection, Rev. 4
ENG-CSI 2.3 Steam Generator Integrity Program Administration, Rev. 10
ENG-CSI 9.3 Appendix VIII Implementation Program for FPL, Rev. 3
NP-919, Boric Acid Corrosion Control, Rev. 1
NDE Manual Examination Procedure, NDE - 4.4, Steam Generator Secondary Side Visual Examination, Rev. 4
ISI/IWE-PTN-3-PLAN, Containment Building Metallic Liner Inservice Inspection Plan for Turkey Point 3, Rev. 3
ENG-CSI-9.1, Nondestructive Examination (NDE) Personnel Qualification & Certification, Rev. 7.
51-5022683-03, Turkey Point Unit 3 & 4 Eddy Current Data Analysis Guidelines, Fall 2004, 9/24/2004
0-CMM-071.1, Steam Generator Secondary Side Entry and Inspection, 5/8/02
0-ADM-730, Foreign Materials Exclusion Controls, 2/8/02C
0-ADM-530, Flow Accelerated Corrosion Inspection Implementation Program, 6/6/02
0-ADM-532, ASME Section XI Repair/Replacement Program, 9/20/04
0-ADM-060, Steam Generator Integrity Program Administration, 9/26/02C1
NDE Manual Examination Procedure, NDE - 4.4, Steam Generator Secondary Side Visual Examination, Rev. 4
NDE Manual Examination Procedure, NDE - 9.3, Radiographic Examination General Requirements, Rev. 0
NDE Manual Examination Procedure, NDE - 4.3, Visual Examination VT-3, Rev. 10
NDE Manual Examination Procedure, NDE - 5.1, Ultrasonic Examination of Pressure Vessel Welds, Rev. 11
NDE Manual Examination Procedure, NDE - 2.2, Magnetic Particle Examination, Rev. 10
NDE Manual Examination Procedure, NDE - 5.4, Ultrasonic Examination of Austenitic Piping Welds, Rev. 17

Miscellaneous

Steam Generator Tube Plugging 15-Day Report, 10/18/2004
CRs: 2004-9315-CR, 2004-10895-CR, 2004-10778-CR, and 2004-11026-CR
PTN-ENG-SEMS-04-012, Engineering Evaluation Degradation Assessment for Turkey Point Unit 3 and 4 Steam Generators, Update for the Turkey Point Unit 3 End-of-Cycle 20 Refueling Outage, Rev. 0
CSI-NDE-03-103, ISI Program Procedure Adequacy and Implementation, 12/26/03
CSI-NDE-04-008, September 2004 Eddy Current Examination Implementation for SG Tubing at TP3, Rev. 1
ENG/CSI-NDE-99-051, Turkey Point Unit 3 and 4, Steam Generator Secondary Side Integrity Plan, Rev. 5
Letter FPL to NRC, April 21, 2004, Steam Generator Tube Plugging Inservice Inspection Special Report.
Turkey Point Nuclear Unit 3 Examination Implementation Plan, CSI-NDE-04-008, Rev. 1
QAS-CSI-04-1, Component, Support & Inspection Including Steam Generator Protection Program, August 2004

10CFR50.59 Evaluation for Unit 3 Steam Generator' Secondary Side Foreign Objects, 5/21/03

Specifications & Procedures

Specification No. 7012-SPEC-C-003, FPL Turkey Point, Construction Opening Concrete Rev. 1, dated 10/23/04

Specification No. 7012-SPEC-C-004, FPL Turkey Point, Tendon Fabrication Specification, Rev. 3, dated 10/18/04

Specification No. 7012-SPEC-C-006, FPL Turkey Point, Reinforcing Steel and Mechanical Splices, Rev. 0, dated 03/09/04

Plant Change/Modification (PC/M) Package 03-075, Containment Access Opening for U3 RVCH Replacement

Quality Execution Procedure QEP 11.03, Concrete and Grout Placement, Rev. 0E1, dated 11/3/03

QEP 12.17, ASME Section XI Visual Examination (IWE/IWL), Rev. 1, dated 12/12/03

QEP 20.09, Requirements for AWS Reinforcement Bar Welding, Rev. 0E1, dated 6/11/04

Bar Splice Instruction Manual, Installation and Examination of Swaged Mechanical Splices, Supplemental Requirements For Turkey Point Nuclear Plant, Rev. 0

AWS WPS for Reinforcing Steel, WPS No. SM-RS-2, Rev. 0

Drawing No. 5610, Containment Structure Liner Plate/Penetration Details

FP&L NDE Procedure 4.7, Visual examination of Reactor Building Containment Vessel, General Visual/VT-1/VT-3, Rev. 1, dated 09/2004

Quality Records

Results of Units 3 & 4 30th Year Containment Tendon Surveillance completed in 2001

National Ready Mixed Concrete Association (NRMCA) certificate for batch plant, truck mix

National Ready Mixed Concrete Association (NRMCA) certificates for concrete truck mixers, Rinker Materials concrete truck numbers 1946, 2012, 2022, 2027, 2172, 2178, 22353, 22593, 5950, and 17382

Records for calibration of concrete batch plant cement and aggregate scales, and batch plant water meter

Concrete mixer uniformity (ASTM C-94) tests performed on truck number 22353

Concrete mix design data

Result of testing performed on concrete materials: Type III cement (ASTM C-150), CTS Komponent admixture, air entraining admixture MB-EA90, lot number 1371740N3, high range water reducer Glenium 3030 NS, lot number 1312354T3, fine aggregate (ASTM C-33), number 67 coarse aggregate (ASTM C-33), Ice, and batch plant water

Concrete placement records which included the pre-pour check list, the concrete pour card, concrete batch tickets, and the results of testing performed on the plastic concrete (slump, air content, temperature and unit weight) at the batch plant and point of placement (end of pumpline)

Results of Craft Mechanical Coupler Rebar Splice Qualification Tests for Craft ID numbers 2236, 2610, 2688, 3194, 3244, 3327, 3372, 3792, 4090, 4093 4089, 4098, 4112, and 5248

Records of Welder Performance Qualification Tests for Welding of Concrete Reinforcing Steel, Welder ID numbers CB3347, CB3372, CB3864, CB5971, IW3611, and IW9099.
SGT Nonconformance Report (NCR) 02-010, Concrete Coverage Over Existing Reinforcing Steel

SGT NCR 03-105, Water Presence in Four Tendons

SGT NCR 03-106, Tendon shim Packs

SGT NCR 03-107, Missing Button Heads

SGT NCR 03-112, Anchor Head Existing Condition

SGT NCR 03-116, Banding found on Tendon

SGT NCR 03-123, Cutting of Concrete Outside Cut Boundary

SGT NCR 03-156, Some Concrete Placed in Construction Opening With Slump Above Specification Requirements

SGT NCR 03-157, Some Concrete Placed in Construction Opening Exceeded 70 Minute Time Limit After Addition of Mix Water

SGT NCR 03-158, Base of Construction Opening not Sloped to Drain Standing Water In Forms

Condition report (CR) 00-1817, Damaged Unit 4 Reactor Building Moisture Barrier at Azimuth 46 degrees

CR 00-1881, Blistering of Unit 4 Containment Liner Coating at Approximately Azimuth 53 degrees, 4' above moisture barrier

CR 00-0491, Damaged Unit 3 Reactor Building Moisture Barrier

CR 03-0556, Corrosion of Angle toe plate in Unit 3 Containment Liner moisture barrier at Azimuth 186 degrees

CR 2004-2478, Review of NRC Information Notice 2004-009, Corrosion of Steel Containment and Containment Liner

CR 2004-10860, Tendon 61V10 Deformed Tendon Wires

CR 2004-12917, Degradation of Unit 3 Containment Moisture Barrier

1R12: Maintenance Effectiveness

CRs

2004-9092, RCS leakrate on Unit 3 showed an unidentified leak rate of 0.34 gpm on 9/25 at 14:19

Miscellaneous

Work Order 34000755 01, Replace 3A charging pump power frame and fluid drive
Work Order 34000755 02, Replace 3A charging pump motor
Work Order 34000755 05, Install plungers/packing on new 3A charging pump
Crane Nuclear Diagnostic Test Ramp Signature AOV8 for PCV456 (as-left)
Crane Nuclear Diagnostic Test Ramp Signature AOV9 for PCV456 (as-found)

Procedures

0-PMM-047.12, “Charging Pump Removal and Replacement”
0-GMI-102.3,”Air Operated Valves Diagnostic Testing Instructions“

1R14 Personnel Performance During Nonroutine Plant Evolutions and Events

Procedures

Procedure 3-EOP-E-0, Reactor Trip or Safety Injection
Procedure 3-EOP-ES-0.1, Reactor Trip Response
Procedure 0-OSP-040.4, Estimate Critical Conditions
Procedure 3-GOP-301, Hot Standby to Power Operation

1R15: Operability Evaluations

Procedures

0-PMM-030.1, “Component Cooling Water Heat Exchanger Cleaning”
3-OSP-024.2, “Emergency Bus Load Sequencers Manual Test”
0-PME-005.10, “4.16 kV A and B Switchgear Cubicle Inspection and Cleaning”
0-PMM-075.1, “Auxiliary Feedwater Pump Turbine Governor Valve Inspection”
4-OSP-075.2, “Auxiliary Feedwater Train 2 Operability Verification”

1R20: Refueling Outage Activities

Procedures

3-OP-050, “Residual Heat Removal”
3-ONOP-033.3, “Accidents Involving New or Spent Fuel”
3-OSP-051.12, “Refueling Containment Penetration Alignment”
3-EOP-E-0, “Reactor Trip or Safety Injection”
3-EOP-ES-0.1, “Reactor Trip Response”
3-OP-089, “Main Turbine”
3-OP-038.9, “Refueling Activities Checkoff List”
3-OP-040.2, “Refueling Core Shuffle”

3-GOP-103, “Power Operation to Hot Standby”
3-GOP-305, “Hot Standby to Cold Shutdown”
3-OP-041.7, “Draining the Reactor Coolant System”
0-ADM-051, “Outage Risk Assessment and Control”
0-ADM-529, “Unit Restart Readiness”
0-ADM-555, “Reactivity Management”
0-ADM-556, “Fuel Assembly and Insert Shuffles”
0-SMM-050.1, “Containment Recirculation Sump Screen Inspection”
3-GOP-503, “Cold Shutdown to Hot Standby”
3-GOP-301, “Hot Standby to Power Operation”
0-ADM-529, “Unit Restart Readiness”
0-SMM-051.3, “Containment Closeout Inspection”
3-OSP-051.15, “Valve Lineup for ILRT”

Miscellaneous
PTN-CY21, “Outage Risk Assessment Key Safety Function Protection Plan”
Equipment Clearance Order (ECO) 3-04-02-022, Section: Zone 56-01, Emergency Containment Filters”
ECO 3-04-02-022, Section: Zone 05-01, REV 1, 3A 4KV Bus Outage
ECO 3-04-02-022, Section: Zone 23-01, REV 2, 3A EDG Outage

Procedures
Procedure NAP-402, “Conduct of Operations”
Procedure 0-EPIP-2001, “Duties of Emergency Coordinator”
Procedure 3-EOP-E-0, Reactor Trip or Safety Injection
Procedure 3-EOP-ECA-0.0, Loss of All AC Power
Procedure 3-EOP-ECA-0.2, Loss of All AC Power Recovery With SI Required
Procedure 3-ONOP- 0034, Loss of DC Bus 3D01 and 3D01A (3A)
Procedure 3-ONOP-0041.3, Excessive Reactor Coolant System Leakage

2OS1: Access Controls to Radiologically Significant Areas
Procedures, Instructions, Guidance Documents
0-ADM-602, ALARA Program, 9/18/03
0-ADM-604, Radiological Protection Guidelines and Practices, 7/15/03
0-HPA-021, Health Physics Restricted Area Key Control, 10/2/03
0-HPA-031, Personnel Monitoring of Internal Dose, 3/7/01
0-HPS-025.1, General Posting Requirements for Radiological Hazards, 7/28/03
0-HPS-026.2, Response Protocols for Whole Body Counting and Personnel Contamination Monitoring, 9/11/03
0-HPS-052.10, Radiological Controls For Diving Operations, 9/30/03
0-OP-059.4, (section 3 only) Operation of the Movable Incore Detectors, 4/11/02
NAP-400, Condition Reports, Rev. 0
0-ONOP-066, High Area Radiation Monitoring System Alarm, 4/21/98

Corrective Action Program (CAP) Documents
CR 04-0029, A chain and padlock connected to a door handle of a posted Locked High Radiation Area through intervention could be positioned in a manner that degraded the barrier.
CR 04-0105 PTN Health Physics to evaluate event at Ft. Calhoun where the NRC identified inadequate Locked High Radiation Area barriers in containment during a recent refueling outage.

CR 04-0639, During a surveillance performed to assess radiological posting controls a Quality Department evaluator observed several inconsistencies related to radiological posting controls.
CR 04-1137, Contaminated sinks in the Hot lab were labeled “Only the Sink Surfaces are Contaminated”. This labeling was agreed upon by HP and Chemistry personnel so that work could be performed in the Hot lab without crossing a contaminated boundary. Recently new contamination boundary tape was installed around the sink and the agreed upon labeling was not replaced.

2OS3: Personnel Radiation Monitoring Instrumentation and Protective Equipment

Procedures, Instructions, Guidance Documents

0-ADM-601, Health Physics Conduct of Operations, 5/3/00
0-ADM-604, Radiological Protection Guidelines and Practices, 7/15/03
0-HPA-010, Health Physics Instrument Plan, 9/28/01
0-HPT-011.2, Shepherd Model 89 Shielded Range Calibrator, 2/18/03
0-HPT-013, Portable Survey Instruments, 8/27/01
0-HPT-012.1, Calibration and Operation of RO-20, RO-2 and RO-2A, 3/21/02
0-HPT-018, Calibration of Survey Instruments, 2/18/03
QI 12-PTN-2, Control of Chemistry and Health Physics Measuring and Test Equipment, 4/28/03C

Records and Data

FPL Memo: Annual Certification of Shepherd Model 89 Shielded Range Calibrator, 12/12/03

Corrective Action Program (CAP) Documents

CR 04-0553, When using the Shepard Irradiator Model 1142-10 to calibrate dosimeters the requirement to up post the room to Locked High Radiation Area and down post afterward the LHRA checklist is not being used as required by HPS-025.1. There is also a problem with the step sequence in the 0-HPT-014.

4OA1: Performance Indicator Verification

Records/ Procedures

2003 Annual Radioactive Effluent Release Report, 3/29/04
Turkey Point Nuclear Offsite Dose Calculation Manual, Rev. 12, 12/23/03
US NRC Inspection Report 05000250& 251 -2004002, 4/26/04
PTN Procedure 0-ADM-032, NRC Performance Indicators, 7/15/03
PTN Procedure 0-ADM-518, Condition Reports, 12/15/03
FPL Procedure NAP-400, Condition Reports, Rev. 0

CRs

CR 2004-29, A door lock was broken and a chain and padlock was attached to the door handle as an alternate means of locking the door. The room was posted Locked High Radiation Area. The chain could be manipulated enough to degrade the barrier. (The door could be opened 4 inches at the maximum extent).
CR 2004-0639, During a surveillance performed to assess radiological posting controls a Quality Department evaluator observed several inconsistencies related to radiological controls. (Observations did not identify any violations of 10 CFR 20 or plant procedures but were not consistent with management guidance.)

4OA2: Problem Identification and Resolution

CR 04-0029, A chain and padlock connected to a door handle of a posted Locked High Radiation Area through intervention could be positioned in a manner that degraded the barrier.
CR 04-0105 PTN Health Physics to evaluate event at Ft. Calhoun where the NRC identified inadequate Locked High Radiation Area barriers in containment during a recent refueling outage.
CR 04-0553, When using the Shepard Irradiator Model 1142-10 to calibrate dosimeters the requirement to up post the room to Locked High Radiation Area and down post afterward the LHRA checklist is not being used as required by HPS-025.1. There is also a problem with the step sequence in the 0-HPT-014.
CR 04-0639, During a surveillance performed to assess radiological posting controls a Quality Department evaluator observed several inconsistencies related to radiological posting controls.
CR 04-1137, Contaminated sinks in the Hot lab were labeled "Only the Sink Surfaces are Contaminated". This labeling was agreed upon by HP and Chemistry personnel so that work could be performed in the Hot lab without crossing a contaminated boundary. Recently new contamination boundary tape was installed around the sink and the agreed upon labeling was not replaced.

4OA5: Other Activities

Procedures

0-GMM-043.13	Reactor Vessel Head Installation, 3/16/03, (FPL)
0-FMM-043.8	Reactor Vessel Head Lifting, 2/26/03C, (FPL)
0-GMM-102.18	Implementation Procedure for Heavy Hauls, 10/19/99C (FPL)
0-GMM-043	Temporary Reactor Head Preparation, Installation and Removal, 9/27/04 (FPL)
0-ADM-717	Heavy Load Handling, 8/27/04, (FPL)
3-GMP-051.1	Reactor Polar Crane Inspection and Periodic Maintenance, 12/5/03, (FPL)
0-ONOP-103.3	Severe Weather Preparations, 7/15/04, (FPL)
MCP11.01	Severe Weather Preparation, Rev. 1 (SGT)

Design Packages

PC/M 03-057	Rx Vessel Closure Head Replacement, Rev. 1
PC/M 03-059	Integrated Head Assembly Installation, Rev. 1
PC/M 03-076	Service Platform for U3 RVCH Replacement, Rev. 2
PC/M 03-077	Miscellaneous Civil Engineering for U3 RVCH Replacement, Rev. 1
SPEC-—085	Reactor Vessel Closure Head Forging Materials, Rev. 1
SPEC-—088	Replacement of Reactor Vessel Closure Head Assemblies, Rev. 1
SPEC-C-001	Heavy Transport, Rigging and Handling for the RVCH Replacement Project, Rev. 1
CALC-C-005	TP 3 & 4 Heavy Load Evaluation, Rev. 1

Guidance Documents

ALARA Package 04-3200, U3 Containment-Containment Wall Excavation Inside Containment including All Support Work, 9/1/04
ALARA Package 04-3202, U3 Containment-Prepare / Package/ Transport Old Reactor Head Inside Containment (non-LHRA) Including All Support Work, 9/1/04
ALARA Package 04-3203, U3 Containment-Transport /Prepare /Reassemble New Reactor Head Inside Containment (Non-LHRA) Including All Support Work, 9/1/04
ALARA Package 04-3204, U3 Containment- Installation of Flow Restrictors In Reactor Vessel

And All Support Work, 9/1/04
ALARA Package 04-3205, U3 Containment- Core Barrel Including All Support Work, 9/1/04
ALARA Package 04-3206, Remove RVLIS Probes and O-Ring From Reactor Head Including All Support Work, 9/1/04
ALARA Package 04-3207, U3 Containment- Removing / Replace Curb Boxes Including All Support Work, 9/1/04
Framatome ANP EIR #51-5648092, FP&L DOT Exemption Request, 9/13/04 (Reviewed document but did not verify calculation results)
U3 Reactor Vessel Closure Head HP Plan 2004 Consisting of the following documents:
ALARA Work Plan - U3 RVCH Replacement, ALARA Review 04-007, Rev. 0
Health Physics Department Instruction 04-007, RVCH Replacement Health Physics Controls, 9/27/04
PTN Health Physics Outage Plan, 8/26/04
RPT Staffing Plan, (not dated)
FP&L Memo: Control of Water From Hydro-Cutting Unit 3 Containment,4/16/04
FP&L Memo: Methodology For Handling the Construction Debris From The Head Replacement project, 8/9/04
FP&L Memo: Satellite RCA and Relocation of C-Land Containers, 6/10/04
HP Job Aid, Removal of Spoils From Containment Opening, Rev. 1, 9/24/04
HP Job Aid, Removal and Release of Tendons From The RCA, Rev.1 , 9/14/04
AREVA Memo: Final Characterization of The Turkey Point 3 Old Reactor Vessel Closure Head and Submittal of Revised RVCH / CRDM/ Smear Map, 9/15/04
AREVA Memo: Packaging and Disposal of The Miscellaneous Waste and Missile Shield, 9/15/04
AREVA Memo: Proposed Design to Attach Temporary Lead Blankets to Either The Temporary Storage Container or Dot Storage/shipping Container While the Old Reactor Vessel Closure Head (ORVCH) Is Stored On-site, 9/15/04
AREVA Memo: Onsite Storage of the Old Reactor Vessel Closure Head and Contingency Plan, 9/10/04
AREVA Memo: Material Safety Data Sheets for ORVCH DOT Shipping Container, 9/23/04
Framatome ANP EIR#51-5038533-00, Turkey Point Reactor Vessel Closure Head Packaging, Shipment, and Disposal Plan, 12/29/03
FP&L White Paper: U3 Containment Temporary Opening Effluent Accountability Rev.1, 9/26/04
HP Job Aid: Removal and Cut up of RVLIS Probe, Rev. 1, 9/15/04
HP Job Aid: Upper Internal Lifting Rig Initial Removal From Lower Cavity, Rev. 1, 9/14/04
RWP 04-3140, U3 Containment/ Upper Reactor Head Inspection / Alignment / Photogrametry Upper Internals Lift Rig Including All Support Work, 9/1/04
AREVA Procedure: Turkey Point III RFO 21 Internals Lift Rig Realignment Procedure, 8/16/04
HP Job Aid: HP Controls for the Curb Box Modifications, (not dated)
HP Job Aid: Installation and Removal of the Temporary Reactor Head, Rev.1
Radiography Shot Plan: Turkey Point Liner Plate Radiography, 9/22/04

MiscellaneousOther Documents:

BUHSTU/NCC0001	Procurement Specification SA-508 Class 3 Integral Cover Head for Reactor Pressure Vessel Cover, TPN 3, Rev. 3
51-5030051-04	TP3 Replacement RPV Closure Head Reconciliation

51-5049846-00	TP3 RPVH Replacement Baseline NDE Field Report Examination Technique Specification Sheet #1 - 2x9 orthogonal array
08–5023846-04	Technical Document, Certified Design Specification
33-5041336-01	ASME Design Report
5610-C-8	Drawing: Paving, Grading & Fencing Main Service Area, Rev. 24
NCR–37012-03-113	(Improper field weld FW-27 in the east buttress bracing assembly at El. 29'-4")
NCR–37012-03-123	(Hydroblasting of concrete beyond the originally planned opening of the construction boundary; also CR2004-10706)
NCR–37012-03-124	(Concrete excavation 1' above proposed design location)

Plant Change/Modification PC/M 03-075, Containment Access Opening for U3 RVCH Replacement, Revision 1, including: (1) Attachment 9, ASME Section XI Repair/Replacement for the Containment Opening, (2) Attachment 10, Code Reconciliation - Containment Liner Plate, and (3) Attachments 1A and 1B, 10 CFR 50.59 Applicability Determination and Evaluation

Work Package 3-3740, Reinstall Liner At Containment Access Opening, Revision 04-SEP-03

Work Package 3-3730, Concrete/Rebar Reinstallation for the Containment Access Opening, Revision 30-JUN-04

SGT Specification No. 7012-SPEC-C-006, Reinforcing Steel and Mechanical Splicing, Revision 0

FPL Specification 5610-C-47, Specification for Furnishing, Fabrication, Delivery, & Erection of the Containment Structure Liner Plate and Accessory Steel

BarSplice Installation and Examination of Swaged Mechanical Splices Supplemental Requirements for the Turkey Point Nuclear Power Plant, Revision 0

Procedure BPI-GRIP Systems Splicing Manual and Operating Instructions, Revision 10/18/01

FPL Procurement Quality Audit Report 08.03.BAROH.04.01

Wiss, Janney, Elstner, Associates, Inc. Report WJE 78649Q, Interim Report CAMTAK and BARGRIP SLEEVE TESTING for DAYTON BAR SPLICE , ING

NDE Examiner Qualification Records for the following SGT NDE Examiners: 5 Level II VT and MT Examiners and 1 Level III RT Examiner

Qualification Records for 5 SGT LII Welding Inspectors

Radiographic Examination Reports and Film for Liner Plate Welds LP-1, LP-2, LP-3, LP-4 and LP-5

Magnetic Particle Examination Reports for Liner Plate Welds LP-1, LP-2, LP-3, LP-4, and LP-5, back-gouge and final weld surfaces

Visual Examination IWE/IWL Reports for Liner Plate Welds LP-1, LP-2, LP-4, and LP-5

Certification Records for MT Yoke SGT-2284 and Test Plate SGT-5318

Bubble Test Technique Sheets for Liner Plate Welds LP-1, LP-2, LP-3, LP-4, and LP-5

Qualification Records for one level II and one Level III Bubble Test Inspectors

SGT Quality Execution Procedure 12.06, Radiographic Examination (ASME) , Revision 0

SGT Quality Execution Procedure 12.05, Magnetic Particle Examination, Revision OE1

SGT Welding Procedure Specification SM/1.1-1, Revision 0

SGT Procedure Qualification Record GT-SM/1.1-Q6

Welder Qualification Records for 15 Chicago Bridge and Iron (CB&I) Welders

Receipt Inspection Reports and Certified Material Test Reports for 3/32" E7018 - Lot 2B402C06, and 1/8" E7018 - Lot 4E412C03 Welding Electrodes

SGT Nonconformance Report (NCR) 03-141 and associated Deficiency Report for use of incorrect MT Powder

FPL NCR 2002-11527-CR for tracking SGT NCR 03-141

FPL Procedure VP-04-111, Remote Ultrasonic Examination of Bottom Reactor Head Penetrations (54-ISI-167), Revision 10/19/2004

Summary of Demonstration Results - Materials Reliability Program (MRP) Demonstration of Equipment and Procedures for the Inspection of Alloy 600 Bottom Mounted Instrument Head Penetrations, 2002/10/21

NDE Personnel Qualification and Certification Records for 4 Level II and 2 Level III UT Examiners (Framatome ANP) for RPV Lower Head Penetration Examinations

NDE Equipment Certification Records for the Following Equipment to be Used on the RPV Lower Head Examinations:

- UT Probes - Serial Numbers 35893, 35895, 35896, 35897, and 35894
- UT Pulser/Receivers - Serial Numbers VH-9239 and VH-9238
- UT µThomscan Units - Serial Numbers VH-7366, VH-7367, VH-74745 and VH-7969

LIST OF ACRONYMS

AFW	Auxiliary Feedwater
BACC	Boric Acid Corrosion Control
CR	Corrective Action Condition Report
DOT	Department Of Transportation
EAD	Electronic Alarming Dosimeter
ECT	Eddy Current Testing
EDG	Emergency Diesel Generator
FP& L	Florida Power and Light
ISI	Inservice Inspection
HHSI	High Head Safety Injection
HRA	High Radiation Area
IST	In Service Testing
LER	Licensee Event Report
MRP	Materials Reliability Program
NCR	Non-conformance Report
NCV	Non-cited Violation
NDE	Non-Destructive Examination
NRC	Nuclear Regulatory Commission
ORVCH	Old Reactor Vessel Closure Head
PC/M	Plant Change & Modification
PI	Performance Indicator
PSI	Pre Service Inspection
PT	Die Penetrant
PZR	Pressurizer
RCA	Radiologically Controlled Area
RCS	Reactor Coolant Systems
RFO	Refueling Outage
RHR	Residual Heat Removal
RP	Radiation Protection
RPV	Reactor Pressure Vessel
RPVH	Reactor Pressure Vessel Head
RRVCH	Replacement Reactor Vessel Closure Head Assembly
RT	Radiography
RWP	Radiation Work Permit
SGT	Steam Generating Team’s
SG	Steam Generator
TI	Temporary Instruction
UT	Ultrasonic Testing
UFSAR	Updated Finial Safety Analysis Report
VT	Visual Testing
WO	Work Orders