



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION II  
SAM NUNN ATLANTA FEDERAL CENTER  
61 FORSYTH STREET, SW, SUITE 23T85  
ATLANTA, GEORGIA 30303-8931

January 26, 2007

EA 06-265-1  
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  
05000250/2006005 AND 05000251/2006005 AND EXERCISE OF  
ENFORCEMENT DISCRETION

Dear Mr. Stall:

On December 31, 2006, 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 18, 2007, 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 findings of significance were identified. Also, licensee identified violations which were determined to be of very low safety significance are listed in Section 4OA7 of this report. NRC is treating the violations as non-cited violations (NCVs) consistent with Section VI.A.1 of the NRC Enforcement Policy because of the very low safety significance of the violations and because they are entered into your corrective action program. If you wish to contest these non-cited violations, 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 20555-001; 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 Resident Inspector at Turkey Point.

This report documents one Unit 3 issue involving a failure to maintain two operable flow paths capable of taking suction from the containment sump per Technical Specification 3.5.2.e requirements. Although this issue constitutes a violation of NRC requirements, we have concluded that FPL's actions did not contribute to the degraded condition and thus, no performance deficiency was identified. Based on these facts, I have been authorized, after consultation with the Director, NRC Office of Enforcement, to exercise enforcement discretion

in accordance with Section VII.B.6 of the Enforcement Policy and refrain from issuing enforcement action for the violation.

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/*

Michael E. Ernstes, Chief  
Reactor Projects Branch 3  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000250/2006005 and 05000251/2006005  
w/Attachment: Supplemental Information

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Enclosure: Inspection Report 05000250/2006005 and 05000251/2006005  
 w/Attachment: Supplemental Information

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Report to J. A. Stall from Michael E. Ernstes dated January 26, 2007.

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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: 05000250/2006005, 05000251/2006005

Licensee: Florida Power & Light Company (FP&L)

Facility: Turkey Point Nuclear Plant, Units 3 & 4

Location: 9760 S. W. 344<sup>th</sup> Street  
Florida City, FL 33035

Dates: October 1 to December 31, 2006

Inspectors: S. Stewart, Senior Resident Inspector  
T. Kolb, Resident Inspector  
R. Taylor, Reactor Inspector (4OA2)  
S. Vias, Senior Reactor Inspector (1R08)  
R. Chou, Reactor Inspector (1R08)

Approved by: M. Ernstes, Chief  
Reactor Projects Branch 3  
Division of Reactor Projects

Enclosure

## SUMMARY OF FINDINGS

IR 05000250/2006-005, 05000251/2006-005; 10/01/2006 - 12/31/2006; Turkey Point Nuclear Power Plant, Units 3 and 4; Inservice Inspection (ISI) Activities, Refueling and Other Outage Activities

The report covered a three month period of inspection by resident inspectors and region based reactor inspectors. Two 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 Oversight Process", Revision 3, dated July 2000.

### A. Inspector Identified & Self-Revealing Findings

#### Cornerstone: Initiating Events

Green. The inspectors identified a Green non-cited violation of Technical Specification 6.8.1 for failure to implement procedures during core alterations when operators failed to maintain reliable communications and to place irradiated fuel in a safe storage location when communications were lost between the refueling personnel and the control room. When identified to the licensee, the issue was entered into the corrective action program and actions to brief fuel handling personnel on procedure requirements were taken prior to resuming fuel movement.

The finding was more than minor because technical specification requirements to implement core alterations procedures were not being met. Using the NRC Manual Chapter 0609, Attachment 1, Checklist 4, a Phase 2 analysis was not required (conditions not met) and the finding was determined to be of very low safety significance. The Initiating Events cornerstone was affected because reliable communications and placement of the irradiated fuel assembly in a safe location on loss of communications would permit prompt protection of personnel and emergency response should a loss of the refueling water seal occur. The finding affects the cross cutting area of Human Performance - Work Practices because the licensee had not defined and effectively communicated expectations regarding procedural compliance and personnel did not follow procedures. (Section 1R20)

#### Cornerstone: Barrier Integrity

Green. The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions." During the 2003 outage, the licensee failed to identify two tubes in the Steam Generator 'A', that had wear indications that exceeded TS tube plugging criteria. The licensee operated the past two cycles with two tubes that exceeded the plugging limit criteria as defined in the plants TS. The issue was documented in the corrective action program and the affected tubes were subsequently removed from service by plugging.

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The finding was more than minor since it affected the barrier integrity cornerstone objective of barrier performance in that the licensee permitted tubes to remain in service that exceeded the Technical Specification tube plugging criteria. The finding was evaluated using Phase 1 of the NRC IMC 0609, Appendix J, "Steam Generator Tube Integrity Findings Significance Determination Process (SDP)." Using Table 1 of Appendix J, "Steam Generator Tube Integrity SDP Matrix," the finding was found to be of very low safety significance (Green) because it met the criteria of one or more steam generator tubes that should have been repaired as a result of the previous inspection. (Section 1R08)

B. Licensee Identified Violations

Two violations of very low safety significance, which were identified by the licensee, have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been administered through the licensee's corrective action program. The violations and corrective actions are listed in Section 4OA7 of this report.



## REPORT DETAILS

### Summary of Plant Status:

Unit 3 operated at full power throughout the period.

Unit 4 began the period at full rated thermal power and operated at or near full power for the inspection period with the following exceptions: On October 11, power was reduced to 60 percent due to a secondary plant transient. After raising power to 96 percent on October 12, continued secondary problems required a power reduction to 85 percent. After secondary repairs were done, power was raised to 100 percent on October 13. On October 28, power was reduced to 50% for testing of main steam safety valves. On October 30, the reactor was shutdown for a refueling outage. On December 6, the reactor entered Mode 2 following the refueling outage for core physics testing and auxiliary feedwater (AFW) testing. On December 7, the reactor was shutdown while performing repairs to the condenser water boxes and intake cooling water (ICW) piping. On December 9, the unit was placed in Mode 2 and full power operation was resumed on December 14. The unit operated at full power for the remainder of the period.

#### 1. REACTOR SAFETY

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

#### 1R01 Adverse Weather Protection

##### a. Inspection Scope

On November 22, 2006 the inspectors reviewed the status of licensee actions in accordance with 0-ONOP-103.2, Cold/Hot Weather Conditions. 0-ONOP-103.2 was entered due to low outside air temperature at the intake area. The inspectors verified conditions were met for entering the procedure and that equipment status was verified as directed by the procedure. The inspectors performed a walkdown of the following safety related equipment on both units that is exposed to the outside weather conditions to identify any potential adverse conditions:

- Intake Cooling Water pumps
- Component Cooling Water pumps and heat exchangers
- High Head Safety Injection pumps

##### b. Findings

No findings of significance were identified.

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## 1R04 Equipment Alignment

### .1 Partial Equipment Walkdowns

#### a. Inspection Scope

The inspectors conducted three partial alignment verifications of the safety-related systems listed below. These inspections included reviews using plant lineup procedures, operating procedures, and piping and instrumentation drawings, which were compared with observed equipment configurations to verify that the critical portions of the systems were correctly aligned to support operability.

- Unit 3, 3A Emergency diesel generator (EDG) when 3B EDG was out-of-service for planned maintenance. Reviewed 0-OSP-023.3, Equipment Operability Verification with an Emergency Diesel Generator Inoperable, and 3-OP-023, Emergency Diesel Generator, along with ECO 3-06-08-037.
- Unit 3 4160 volt electrical lineup when the startup transformer was out-of-service for maintenance. Reviewed 0-OSP-205.1, Startup Transformers and Onsite A.C. Power Distribution Verification and 0-ADM-536, Technical Specification Bases Control Program. Performed plant walkdown of Unit 3 Startup Transformer breakers.
- Unit 4 intake cooling system when 4C ICW pump was out-of-service for discharge flange cracks. Reviewed Technical Specification actions per TS 3.7.3.a and TS 3.7.3.b. Performed system walkdown inside intake area for extent of condition.

#### b. Findings

No findings of significance were identified.

### .2 Complete System Walkdown

#### a. Inspection Scope

The inspectors conducted a detailed walkdown/review of the alignment and condition of the Control Room Emergency Ventilation System to verify the capability of the system to meet its design basis function to auto start on accident or radiological emergencies to pressurize and filter the control building atmosphere. The inspectors utilized licensee procedure 0-OP-025, "Control Room Ventilation System," and drawing 5610-M-3025 (Control Building Ventilation Control Room HVAC), as well as other licensing and design documents, when verifying that the system alignment was correct. During the walkdown, the inspectors verified, as appropriate, that: (1) valves were correctly positioned and did not exhibit leakage that would impact the function of any valve; (2) electrical power was available as required; (3) major portions of the system and components were correctly labeled, cooled, and ventilated; (4) hangers and supports were correctly installed and functional; (5) essential support systems were operational; (6) ancillary equipment or debris did not interfere with system performance; (7) tagging

clearances were appropriate; and (8) valves were locked as required by the licensee's locked valve program. Pending design and equipment issues were reviewed to determine if the identified deficiencies significantly impacted the system's functions. Items included in this review were the operator workaround list, the temporary modification list, system health reports, system description, and outstanding maintenance work requests/work orders. In addition, the inspectors reviewed the licensee's corrective action program to ensure that the licensee was identifying and resolving equipment alignment problems.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

.1 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 including fire barriers used to prevent fire damage or fire propagation. The inspectors reviewed these activities against provisions in the licensee's procedure 0-ADM-016, Fire Protection Plan, and 10 CFR Part 50, Appendix R. The licensee's fire impairment lists, updated on an as-needed basis, were routinely reviewed. 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:

- 3A and 3B EDG rooms including day tank rooms
- Unit 3 and Unit 4 containment spray pump rooms
- Unit 4 containment
- Unit 3 and Unit 4 main and auxiliary transformers
- Cable Spreading room
- Unit 3 and Unit 4 high head safety injection pump rooms
- Unit 4 A and B 4160 volt bus rooms
- General auxiliary building passageway
- Control room

b. Findings

No findings of significance were identified

## 1R06 Flood Protection Measures

### .1 Internal Flooding

#### a. Inspection Scope

The inspectors conducted walkdowns of the following areas which included checks of the sumps to ensure that flood protection measures were in accordance with design specifications. The inspectors reviewed the Updated Final Safety Analysis Report, Appendix 5F, Internal Plant Flooding, that discussed protection of areas containing safety-related equipment that may be affected by internal flooding. Specific plant attributes that were checked included structural integrity, sealing of penetrations, control of debris, and operability of sump systems.

- Unit 3, 4160 volt switchgear rooms
- auxiliary feedwater pump area

#### b. Findings

No findings of significance were identified.

## 1R08 Inservice Inspection (ISI) Activities

### .1 Piping and Pressure Boundary Systems ISI

#### a. Inspection Scope

From November 6-17, 2006, the inspectors reviewed the implementation of the licensee's ISI program for monitoring degradation of the reactor coolant system boundary and the risk significant piping system boundaries for Unit 4. The inspectors selected a sample of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI required examinations and Code components in order of risk priority as identified in Section 71111.08-03 of inspection procedure 71111.08, "Inservice Inspection Activities," based upon the ISI activities available for review during the onsite inspection period.

The inspectors conducted an on-site review of nondestructive examination (NDE) activities to evaluate compliance with Technical Specifications (TS), ASME Section XI, and ASME Section V requirements, 1998 Edition through 2000 Addenda, and to verify that indications and defects (if present) were appropriately evaluated and dispositioned in accordance with the requirements of ASME Section XI, IWB-3000 or IWC-3000 acceptance standards. The inspectors observed the following examinations and/or examination records:

Ultrasonic Testing (UT):

- 14" Feedwater Loop A, Augmented Exam, Nozzle Ramp to Past Elbow
- 12" Pressurizer Surge Line, Weld No. 12"-RC-1401-7, Pipe to Pipe
- 12" Pressurizer Surge Line, Weld No. 12"-RC-1401-8, Pipe to Elbow
- 12" Pressurizer Surge Line, Weld No. 12"-RC-1401-8A, Elbow to Safe-End
- Weld 4-SGB-FW, Steam Generator B Feed Water Nozzle to Shell

Visual Exam (VT):

- 4-SGB-O-IRS, SG B Inlet Nozzle Inner Radius (VT-1)
- Reactor Head Flange (VT-3)

Magnetic Particle Testing (MT):

- Weld 4-SGB-FW, Steam Generator B Feed Water Nozzle to Shell

Radiographic Testing (RT) for Flow Accelerated Corrosion (FAC):

- Main Steam Isolation Valve ½" Drain Pipe, Elbow No. ST-4-2-E-PD
- Main Steam Isolation Valve ½" Drain Pipe, Elbow No. ST-4-1-E-PE
- Main Steam Isolation Valve ½" Drain Pipe, Elbow No. ST-4-3-E-PH
- Main Steam Isolation Valve 3" Drain Pipe, Elbow No. MBHA-E-1

Qualification and certification records for examiners, inspection equipment, and consumables along with the applicable NDE procedures for the above ISI examination activities were reviewed and compared to requirements stated in ASME Section V and Section XI.

The inspectors reviewed four samples of recordable indications to verify that the evaluation and disposition of indications were in accordance with the applicable criteria of ASME Section XI, IWB-3000, that are identified in the procedures listed in section 1R08. The inspectors reviewed the disposition of indications for the following welds or components:

- Framatome Condition Report (CR) 2005-10, PT Indication on Reactor Head Lifting & Shroud Support Lugs
- FPL CR 2005-13231, UT report on Slot Inclusion at Weld of Feed Water to Shell at SG A
- 2006 UT Inspection Report on Geometry on Pressurizer Surge Line Weld No. 12"-RC-1401-7, Pipe to Pipe
- UT Indication Report for Weld 4-SGB-FW, Steam Generator B Feed Water Nozzle to Shell

The inspectors reviewed three samples of welding repair or replacement activities performed since the beginning of the last refueling outage to evaluate compliance with procedures and the ASME Code. The inspectors reviewed weld process control sheets,

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welding procedure specifications, welding procedure qualification records, welder qualification records, Certified Material Test Reports for weld material, ASME Code reconciliation documents, and NDE reports. The weld repair or replacements were:

- Main Feed Water Flow Control Valve FCV-4-478
- Seal Water Injection Filter B Outlet Valve 4-293A
- Seal Water Injection Filter B Outlet Valve 4-293B

b. Findings

No findings of significance were identified.

.2 Reactor Vessel Upper Head Penetrations

a. Inspection Scope

The Reactor Vessel Upper Head Penetrations Inspection was not required during this outage. The Turkey Point Unit 4 Reactor Upper Head was replaced with preservice and base line inspections in May 2005 and was not required to have a Reactor Vessel Upper Head Penetration Inspection during this first refueling outage per Temporary Instruction (TI) 2515/150, Reactor Pressure Vessel Head and Vessel Head Penetration Nozzles.

b. No findings of significance were identified.

.3 Boric Acid Corrosion Control (BACC) ISI

a. Inspection Scope

The inspectors reviewed the licensee's BACC activities to ensure implementation with commitments made in response to NRC Generic Letter 88-05, "Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary" and Bulletin 2002-01, "Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity."

The inspectors conducted an on-site record review as well as an independent walk-down of parts of the reactor building that are not normally accessible during at-power operations to evaluate compliance with licensee BACC program requirements. In particular, the inspectors assessed whether the visual examinations focused on locations where boric acid leaks can cause degradation of safety significant components and that degraded or non-conforming conditions were properly identified in the licensee's corrective action system.

The inspectors reviewed a sample of engineering evaluations completed for boric acid found on reactor coolant system piping and components to verify that the minimum design code required section thickness had been maintained for the affected component(s). The inspectors also reviewed the licensee's corrective actions implemented for evidence of boric acid leakage to confirm that they were consistent with requirements of Section XI of the ASME Code and 10 CFR 50 Appendix B Criterion XVI.

The following four CRs were reviewed.

- CR 2006-22765, Valve 4-942E Had an Active Boric Acid Leak
- CR 2006-23452, Valves 4-208 and 4-297B Had Dry Boric Acid
- CR 2006-31041, The Block Valve for LT-4-930 Was Found Encased in Dry Boric Acid
- CR 2006-31042, Valve 4-941P Had Dry Boric Acid

b. Findings

No findings of significance were identified.

.4 Steam Generator (SG) Tube ISI

a. Inspection Scope

The inspectors reviewed the Unit 4 SGs A, B, and C tube examination activities conducted pursuant to Technical Specification (TS) and the ASME Code Section XI requirements.

The inspectors reviewed activities, plans, condition and operational assessments, pre-outage degradation assessment, problem identification, and procedures for the inspection and evaluation of the steam generator Inconel Alloy 600TT tubing and related components to determine if the activities were being conducted in accordance with TS and applicable industry standards. The inspectors reviewed data results for various tubes to verify the adequacy of the licensee's primary, secondary, and resolution analyses. Data gathering, analysis, and evaluation activities were reviewed, with special emphasis on evaluation of the eddy current data for the indications found in six tubes which were plugged in SG A.

The inspectors reviewed data analyses for six tubes in SG A: Row (R)36 Column (C)74, R35C70, R35C68, R35C69, R35C71, and R35C72. The inspectors also reviewed the data analysis gathered in 2003 for tubes R36C74 and R35C70. The inspectors observed the licensee perform the video/visual inspection of the secondary side of the top of the tubesheet area of the steam generators to determine if foreign materials or loose parts were present and to determine if the licensee was conducting appropriate evaluations. The inspectors also reviewed data operators and analysts' certifications and qualifications, including medical exams.

b. Findings

Introduction: A Green NCV was identified for the failure to comply with 10CFR50, Appendix B, Criteria XVI, "Corrective Actions." During the 2003 outage, the licensee failed to identify two tubes in the Steam Generator 'A', that had wear indications that exceeded technical specification tube plugging criteria. The licensee operated the past two cycles with two tubes that exceeded the plugging limit criteria identified as defined in the plants technical specifications.

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Description: During steam generator eddy current testing, the licensee identified that Tubes R36C74 and R35C70 in Steam Generator A had through wall degradation of 43% and 51% respectively. These indications were identified during the secondary analysis of eddy current examinations conducted during this outage. Bobbin probe examination data was analyzed utilizing a Turbo Mix Method (mixed channel with 100, 200, and 400 KHz frequencies) for secondary Automatic Computer Data Analysis (ACDA) and indications were confirmed using eddy current rotating probe examination. The licensee determined that the indications were a result of wear from the tube interacting with a loose part. The licensee also reviewed video tapes of visual inspections conducted on the secondary side of the steam generator during this and previous refueling outages and could not identify loose parts or foreign objects in the locations of two tubes. The licensee expanded the examination sample to adjacent tubes and identified four additional tubes that had similar degradation and plugged all six tubes during this outage.

During the review of the eddy current data for the 2003 refueling outage, the inspectors noted that the licensee had also used a Turbo Mix Method to evaluate eddy current data for the secondary ACDA. The inspectors reviewed this data and concluded that there were clear visible indications in the data that had not been recognized by the licensee in 2003. The secondary ACDA had not detected and analyzed the indications that were visibly evident in the data during the 2003 secondary data analysis. The inspectors inquired as to why the indications had not been detected by the ACDA. The licensee discovered that their 2003 ACDA was set to only identify flaws with phase angles corresponding to flaws that measured 1% to 100 % through-wall. The ACDA method used during the November 2006 outage did not have such a limitation, and detected the flaws.

NRC Information Notice 2003-05, "Failure to Detect Freespan Cracks in PWR Steam Generator Tubes" dated June 5, 2003, identified that care should be exercised when establishing reporting criteria for indications based on phase angle response, and that data analysis procedures (including automated or computerized data screening criteria) should be sufficiently robust to reliably identify indications which may potentially exceed the plugging limit. The licensee performed the secondary ACDA in October 2003 after the Information Notice 2003-05 was issued and had an automatic computer data analysis setup with a limitation to detect the phase angle flaws which resulted in failure to detect the indications.

Technical Specification 4.4.5.4.a.(6), Surveillance Acceptance Criteria, required that a tube shall be removed from service if the imperfection depth is greater than or equal to 40% of the nominal tube wall thickness. The failure to identify the two steam generator tubes with greater than 40% through wall indications resulted in the tubes remaining in service for two additional operating cycles. The licensee performed an evaluation for the two tubes this outage and concluded that both tubes would have been able to resist a pressure of more than three times the differential pressure requirements and were not required to have in-situ pressure testing. Both tubes were subsequently plugged.



Analysis: The failure to identify and plug the steam generator tubes is a performance deficiency because the licensee is expected to use inspection methods with the objective of detecting and plugging those tubes which exceeded the TS through wall degradation limit of 40 percent. During the 2003 outage, the licensee failed to properly identify and evaluate indications utilizing the eddy current Bobbin data resulting in steam generator tubes being left in service with through wall indications of 43% and 51%.

The finding was more than minor since it affected the barrier integrity cornerstone objective of barrier performance in that the licensee permitted tubes to remain in service that exceeded the Technical Specification tube plugging criteria. The finding was evaluated using Phase 1 of the NRC IMC 0609, Appendix J, "Steam Generator Tube Integrity Findings Significance Determination Process (SDP). Using Table 1 of Appendix J, "Steam Generator Tube Integrity SDP Matrix," the finding was found to be of very low safety significance (Green) because it met the criteria of, "One or more tubes should have been repaired as a result of the previous inspection." Although degraded, the tubes did not leak and they were plugged during this refueling outage to remove them from service.

Enforcement: 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions." required, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. Contrary to the above, defective tubes R36C74 and R35C70 in Unit 4 Steam Generator A, with eddy current indications greater than 40%, were not identified and corrected by removing them from service as required by TS. Because this finding is of very low safety significance and has been entered into the licensee's corrective action program as Condition Report (CR) 2006-33467, this violation is being treated as a Non-Cited Violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 50-251/2006-005-01, Failure to Identify Indications during a SG Eddy Current Examination.

.5 Problem Identification and Resolution

a. Inspection Scope

The inspectors performed a review of ISI related problems that included welding, boric acid corrosion control, and steam generator replacement activities that were identified by the licensee and entered into their corrective action program. The inspectors reviewed a sample of these corrective action documents to confirm that the licensee had appropriately described the scope of the problems and had initiated corrective actions. The inspectors performed this review to ensure compliance with 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requirements. The corrective action documents reviewed by the inspectors are listed in the attachment.

b. Findings

No findings of significance were identified.

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1R11 Licensed Operator Requalification Program.1 Resident Inspector Quarterly Reviewa. Inspection Scope

During the week of October 16, 2006, the inspectors observed and assessed licensed operator annual operating test activities in accordance with 10 CFR 55.59 to verify that operator performance was adequate, and that evaluators were identifying and documenting crew performance problems. The simulated events were administered using the licensee's plant specific simulator and scenario 750005502, Steam Break Inside Containment / ATWS / Loss of 3A 4KV Bus. Additionally, the inspectors observed the operators' use of 3-EOP-E-1, Loss of Reactor of Secondary Coolant, 3-EOP-E-2, Faulted Steam Generator Isolation, 3-EOP-FR-S.1, Response to Nuclear Power Generation / ATWS, and 3-ONOP-004.2, Loss of 3A 4KV Bus. Event classifications (including Alert) were checked for proper classification and completion of the notification form. The simulator board configurations were compared with actual plant control board configurations. The inspectors specifically evaluated the following attributes related to operating crew performance:

- Clarity and formality of communication
- Ability to take timely action to safely control the unit
- Prioritization, interpretation, and verification of alarms
- Correct use and implementation of off normal and emergency operation procedures; and emergency plan implementing procedures
- Control board operation and manipulation, including high-risk operator actions
- Oversight and direction provided by operation's supervision, including ability to identify and implement appropriate technical specification actions, regulatory reporting requirements, and emergency plan actions and notification

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectivenessa. Inspection Scope

The inspectors reviewed the following two equipment problems and associated condition reports to verify that 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 FPL Administrative Procedure 0-ADM-728, Maintenance Rule Implementation. The inspectors' efforts focused on maintenance rule scoping, characterization of maintenance problems and 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. The

inspectors checked that when operator actions were credited to prevent failures, the operator was dedicated at the location needed to take timely action, and that the action was governed by applicable procedures. The inspectors checked to ensure that equipment problems were being identified and entered into the corrective action program. Because some deficiencies had involved work practices, the inspectors observed work in progress to determine that work controls were sufficient to prevent problems.

- CR 2006-4868, Instrument air compressor 4CD failed to stop normally following weekly run (Oct 4)
- CR 2006-35645, Cracks on 4C ICW pump discharge flange (Dec 6) along with 4C ICW pump exceeding maintenance rule unavailability performance criteria (CR 2006-36364).

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 six 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 O-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.

- October 4, risk management for inspection of 3A EDG exhaust manifold during overhaul of 3B EDG
- October 6, Unit 3, Yellow risk due to failure of 3B2 battery charger when 3B emergency diesel generator was out of service for overhaul (CR 2006-28580)
- October 23, Unit 4, risk assessment when the Unit 4 startup transformer was de-energized for insulator washing
- November 6, Unit 3 risk assessment when the Unit 4 startup transformer was removed from service for maintenance
- November 8, Unit 3, Yellow risk due to Unit 4 supplied equipment unavailable along with Unit 4 RWST unavailability.
- December 19, risk assessment for planned maintenance on 4CD instrument air compressor.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluationsa. Inspection Scope

The inspectors reviewed five interim disposition and operability determinations associated with the following condition reports to ensure that Technical Specification 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 Final Safety Analysis Report, applicable supporting documents and procedures, and interviewed plant personnel to assess the adequacy of the interim condition report disposition.

- CR 2006-26427, Unit 3 EDG's have air start solenoids installed that are under rated for actual operating conditions.
- CR 2006-28403, Unit 3A EDG has through-wall corrosion on underside of exhaust silencer.
- CR 2006-28993, Unit 3B EDG broken air line to air start motors for one side.
- CR 2006-30033, Unit 3 Channel 2 Eagle 21 Delta H tuning constant left at 12 during performance of 3-PMI-059.9, Power Range Nuclear Instrumentation Protection Set II Channel N-3-42 Calibration.
- CR 2006-35673, cracks in 4A ICW pump discharge flange.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testinga. 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 verified that the requirements of procedure 0-ADM-737, Post Maintenance Testing, were incorporated into test requirements. The inspectors reviewed the following work orders (WO) and/or surveillance procedures (OSP):

- Unit 3, WO 36015483-01, 3B Diesel Generator air start pressure regulating valve replacement.
- Unit 3, WO 36004277-01, 3B Diesel Generator low prelube pressure switch replacement.
- Unit 3, WO 36016298-01, 3A Reactor Trip Breaker replacement.

- Unit 4, WO 36001478-01, MOV-4-744A, RHR discharge to cold leg, motor replacement
- Unit 4, WO 35021818-01, Rod Control System Preventive Maintenance per O-PMI-028.5, Rod Control System Preventive Maintenance and Power Cabinet Functional Test.
- WO 35003432-01, MOV-4-750, Hot Leg suction valve, valve inspection.

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities

.1 Unit 4 Refueling Outage

For the Unit 4 refueling outage that started on October 30, the inspectors evaluated licensee outage activities as described below, to verify the licensee considered risk in developing outage schedules, adhered to administrative risk reduction methodologies when changing plant configuration, and adhered to operating license and Technical Specification requirements that maintained defense-in-depth.

.2 Review of Outage Plan

a. Inspection Scope

Prior to the outage, the inspectors reviewed the licensee's outage plan and checked risk management procedure O-ADM-051, Outage Risk Assessment and Control, dated October 24, 2006, and various maintenance schedules to verify that the licensee had performed adequate risk assessments and had implemented appropriate risk-management strategies when required by 10 CFR 50.65(a)(4).

b. Findings

No findings of significance were identified.

.3 Monitoring of Shutdown Activities

a. Inspection Scope

The inspectors observed portions of the plant shutdown and cooldown in accordance with FPL procedure 3-GOP-305, Hot Standby to Cold Shutdown, to verify that cooldown restrictions and similar procedural requirements were followed.

b. Findings

No findings of significance were identified.

#### .4 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 Technical Specifications when taking equipment out of service.

- Clearance Activities: ECO 4-06-04-016, Zone 50-03, MOV 4-744A motor replacement, ECO 4-06004-016, Zone 74-03, Feedwater Isolation valves for Safeguards Train B test.
- Reactor Coolant System Instrumentation
- Electrical Power, including switchyard activities
- Residual Heat Removal (RHR) System Monitoring
- Spent Fuel Pit Cooling System Operation
- Inventory Control
- Reactivity Control
- Containment Closure, including the ability to establish closure should residual heat removal cooling be lost

The inspectors 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.

#### .5 Reduced Inventory and Mid-loop Conditions

##### a. Inspection Scope

The inspectors checked the licensee's preparations for reduced inventory operations, including ability to close the equipment hatch within time constraints, control of reactor parameters, including core exit thermocouples, procedure compliance for control of reactor water level, and oversight of the draining evolution. The licensee did not drain to the mid-loop condition during the outage.

##### b. Findings

No findings of significance were identified.

.6 Refueling Activities

a. Inspection Scope

The inspectors observed fuel handling operations (removal and insertion) and other ongoing activities to verify that those operations and activities were being performed in accordance with technical specifications 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. Checks were made of foreign material controls in vicinity of the open reactor vessel.

b. Findings

Introduction: The inspectors identified a Green non-cited violation of Technical Specification 6.8.1 for failure to implement procedures during core alterations. The inspectors identified the violation during a review of fuel handling operations that included review of records and interviews with personnel.

Description: On November 5, 2006, the licensee was defueling Unit 4. Licensee procedure 4-OP-040.2, Refueling Core Shuffle, requires reliable communications be maintained between the control room and the refueling station and that if communications are lost between the control room and any refueling station, fuel must be placed in a safe storage location and unlatched from any refueling equipment until communication is restored. While defueling Unit 4, direct communication between the personnel at the refueling station and the control room were repeatedly lost (six times) due to electrical problems. At each loss of communications, the licensee attempted differing interim repairs, including discontinuing use of a steam generator flush pump, then detaching the pump from the communications power supply, initiating an evaluation, making preparations for repairs, and rerouting the existing power supply. On two occasions, at 0202 hours, and again at 1450 hours, communications were lost for extended periods and the latched fuel bundle remained latched out of the core during troubleshooting and recovery from the communication failure. Recovery included restoration of communications and completion of 4-OP-040.2 Attachment 4, Refueling Core Shuffle Minimum Equipment Checklist.

Analysis: The licensee's failure to implement refueling procedures was a performance deficiency. Using the NRC Manual Chapter 0609, Attachment 1, Checklist 4, the finding was more than minor because the technical specification requirement to implement core alterations procedures was not being met. Using the checklist, a Phase 2 analysis was not required (conditions not met) and the finding was determined to be of very low safety significance. The Initiating Events cornerstone was affected because assuring reliable communications and placement of the fuel assembly in a safe location would permit prompt protection of personnel and emergency response should a loss of the refueling water seal or other fuel handling event occur. The finding affects the cross cutting area of Human Performance - Work Practices because the licensee had not defined and effectively communicated expectations regarding procedural compliance and personnel did not follow procedures.

Enclosure

Enforcement: Technical Specification 6.8.1 requires that the written procedures of Appendix A to NRC Regulatory Guide 1.33, Revision 2, February 1978, be implemented. The regulatory guide includes procedures for refueling and core alterations. The licensee implements this requirement, in part, using procedure 4-OP-040.2, which requires that reliable communications be maintained and that upon loss of communications between any refueling station and the control room, fuel must be placed in a safe storage location and unlatched until communications is restored. Contrary to the above, on November 5, 2006, on multiple occasions, reliable communications were not maintained and when communications were lost, fuel assemblies being moved were not unlatched. Instead, operators took action to temporarily restore communications and other fuel handling recovery actions. When identified, the licensee documented the problem in the corrective actions program as CR 2006-32040 and revised fuel handling procedures to clarify actions for various fuel handling problems. Additionally, fuel handling personnel were re-briefed and trained on procedural expectations. The violation existed when communications were repeatedly lost and fuel handling personnel directed their attention to communications recovery while fuel remained latched out of the core. Because the finding is of very low safety significance, Green, and had been entered into the corrective action program, the violation is being treated as a Non-Cited violation consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 50-251/2006-005-02, Failure to Comply with Core Alteration Procedures for Handling of Irradiated Fuel.

.7 Monitoring of Heatup and Startup Activities

a. Inspection Scope

The inspectors reviewed activities during reactor restart and power escalation to verify that reactor parameters were within safety limits and that the startup evolutions were done in accordance with pre-approved procedures and plans. The inspectors conducted a thorough walkdown of containment prior to reactor restart to verify no evidence of leakage and verify that debris filters were properly positioned to maintain operability of the containment sump. Sections of the reactor physics testing were observed or reviewed with reactor engineering personnel.

b. Findings

No findings of significance were identified.

.8 Identification and Resolution of Problems

a. Inspection Scope

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.



b. Findings

No findings of significance were identified.

1R22 Surveillance Testinga. Inspection Scope

The inspectors either reviewed or witnessed the following nine surveillance tests to verify that the tests met the technical specifications, 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 their safety function. The tests reviewed included two inservice tests (IST) and one reactor coolant system leakage detection surveillance.

- Unit 4, 4-OSP-047.1, Charging Pumps/Valves IST
- Unit 3, 3-OSP-028.6, RCCA Periodic Exercise, (OTSC 0288-06)
- Unit 4, 4-OSP-062.5, Safety Injection Gas Intrusion Valve Testing, Section 7.14 for valve 4-895U and RV-4-857.
- Unit 4, 4-OSP-206.1, Inservice Valve Testing-Cold Shutdown, Section 7.4 for MOV 4-626. This is a containment isolation valve test.
- Unit 4, 4-OSP-013.3, Diesel Instrument Air Compressor Operability Test.
- Unit 3, 3-OSP-206.4, Inservice Valve Testing / Refueling, Section 7.5 for Containment Spray suction relief line check valve, 3-2052. This is a containment isolation valve test.
- Unit 3, 0-OSP-062.2, Safety Injection System IST, Section 7.1, for the 3A HHSI pump.
- Unit 4, 4-OSP-041.1, Reactor Coolant System Leak Rate Calculation.
- Unit 3 and 4, 0-OSP-205.1, Startup Transformers and Onsite A.C. Power Distribution Verification.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modificationsa. Inspection Scope

The inspectors reviewed the temporary modification listed below to ensure that it did not adversely affect the operation of the system. The inspectors screened temporary plant modifications for systems that were ranked high in risk for departures from design basis and for inadvertent changes that could challenge the systems to fulfill their safety function. The inspectors conducted plant tours and discussed system status with

engineering and operations personnel to check for the existence of temporary modifications that had not been appropriately identified and evaluated.

- Unit 3, TSA 03-06-041-08, 3C Reactor Coolant Pump vertical vibration monitor disconnected.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

Initiating Events and Mitigating Systems Cornerstones

a. Inspection Scope

The inspectors checked licensee submittals for the performance indicators (PIs) listed below for the period April 1, 2005, through September 30, 2006, to verify the accuracy of the PI data reported during that period. Performance indicator definitions and guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Rev. 4 and licensee procedure 0-ADM-032, "NRC Performance Indicators - Turkey Point," were used to check the reporting for each data element. The inspectors checked licensee event reports (LERs), operator logs, condition reports (CRs), and performance indicator data sheets to verify that the licensee had properly counted the associated events and required hours, as applicable. The inspectors interviewed licensee personnel associated with performance indicator data collection, evaluation, and distribution.

- Unplanned Scrams per 7000 Critical Hours
- Scrams with Loss of Normal Heat Removal
- Unplanned Power Changes per 7000 Critical Hours
- Safety System Functional Failures

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 screening of items entered daily into the licensee's corrective action program. This review was accomplished by reviewing daily printed summaries of condition reports and by reviewing the licensee's electronic condition report database. Additionally, reactor coolant system unidentified leakage was checked on a daily basis to verify no substantive or unexplained changes.

b. Findings

No findings of significance were identified

.2 Annual Sample Review

a. Inspection Scope

The inspectors selected the following two condition reports for detailed review and discussion with the licensee. The condition reports were reviewed to ensure that an appropriate evaluation was performed and appropriate corrective actions were specified and prioritized. Other attributes checked included disposition of operability, resolution of the problem including cause determination and corrective actions. In addition, the inspectors evaluated the condition reports in accordance with the requirements of the licensee's corrective actions process as specified in NAP-204, Condition Reporting. The inspectors reviewed the cumulative effects of the operator workarounds that were in place to verify that those effects could not increase an initiating event frequency, affect multiple mitigating systems, or affect the ability of operators to properly respond to plant transients and accidents. The inspectors also reviewed operator workarounds to verify that the licensee was identifying operator workaround problems at an appropriate threshold and entering them in the corrective action program.

- CR 2005-23705, 4CM air compressor tripped while in lead
- CR 2006-20551, NRC Cross cutting aspects of findings have crossed the threshold for a substantive cross-cutting issue in the area of corrective actions (included a review of CR 2006-25531, Root Cause Analysis for NRC Cross-Cutting Letter dated August 31, 2006)

b. Findings

No findings of significance were identified. The inspectors noted that as a result of a substantive cross-cutting issue in corrective actions, the licensee implemented a number of program changes and training to increase attention to identification, tracking, and correction of problems of significance, with focus on problems affecting the MSPI systems and the switchyard. Subsequently, the licensee completed a root cause evaluation of the cross-cutting issues and proposed a number of actions to prevent recurrence. A root cause in the area of human performance was also completed under CR 2006-28918 and corrective actions were proposed in this area. The actions were being implemented at the end of the inspection period.

.3 Semi-Annual Trend Reviewa. Inspection Scope

As required by Inspection Procedure 71152, Identification and Resolution of Problems, the inspectors reviewed 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 repetitive equipment issues, but also considered the results of daily inspector corrective actions item screening discussed in section 4OA2.1 above, plant status reviews, plant tours, document reviews, and licensee trending efforts. The inspectors' review nominally considered the six-month period of July through December 2006. The review also included issues documented outside the normal CAP such as in the Chief Nuclear Officer's Indicator Report, dated November 16, 2006. Corrective actions associated with a sample of the issues identified in the licensee's corrective action program were reviewed for adequacy.

b. Assessment and Observations

No findings of significance were identified.

The inspector identified a trend of operators not identifying deficient conditions during rounds in the safety-related battery rooms. Specifically, on September 5, 2006, the inspectors found water on the floor in the Unit 3 B battery room that had been missed on operator rounds. The water was later identified to have been spilled during battery testing. Further, the inspectors found that the 3A battery had two missing foreign material caps for cells 5 and 16, as a result of testing. These deficiencies had not been identified during operator rounds.

4OA3 Event Followup.1 (Closed) LER 05000250/2006-003-00, Failure of Residual Heat Removal MOV 3-744B, Cold Leg Isolation Valve

(Closed) Unresolved Item (URI) 05-250/2006-002-02, Failure of MOV-3-744B to open when demanded on March 7, 2006

a. Inspection Scope

The inspectors reviewed the LER to evaluate the licensee's assessment of the event and to identify any licensee performance deficiencies associated with the cause.

b. Findings

Introduction: A violation of Technical Specification 3.5.2.e was identified when one of two flow paths from the containment sump was inoperable in excess of the allowed time. Enforcement discretion was exercised for this violation. No performance deficiency was identified.

Description: On March 6, 2006, one of the two low pressure injection valves (motor operated valve, MOV 3-744B) failed to open during alignment for a refueling outage. The valve was subsequently manually opened using the valve operator. The licensee determined the failure was caused by oxidation and corrosion of the valve's magnesium motor. The rotor's fan blades and shorting ring were found discolored and distorted with some fan pieces broken. The licensee entered the failure in the corrective action program as CR 2006-6604 and initiated a root cause and extent of condition evaluation.

Based on the failure mechanism, the licensee, using engineering judgement, concluded that the valve had been inoperable for a period of time greater than the 72 hours allowed by Technical Specification 3.5.2, Action a. The motor for MOV 3-744B was installed prior to 1985 and was last successfully operated when the valve was cycled during surveillance testing on November 27, 2004.

As discussed in the licensee's root cause report, the valve had been qualified for a 40 year service life and was operating within its design conditions. Because the vendor recommended preventive maintenance activities had been implemented by the licensee, including meggar testing, no performance deficiency was identified. There were no similar motor failures identified at Turkey Point. Relevant industry information for a similar failure in a PWR valve motor was too recent (October 2005) to have been used to detect the failure. Additionally, the valve motor could only be checked/tested in Mode 5 and that there were no Mode 5 entries from October 2005 until the motor failure was detected in March 2006. Other corrosion type failures of motors had occurred in boiling water reactor applications where the ambient conditions of temperature and humidity were more extreme.

Analysis: The inspectors determined that a violation of Technical Specification 3.5.2 Action a occurred since valve MOV 3-744B had been inoperable in excess of the allowed time (72 hours). The inspectors determined that this violation was more than minor because it affected the equipment performance attribute of the Mitigating System cornerstone and because it affects the cornerstone objective of ensuring mitigating system availability. The inspectors determined that the valve failure was not a performance deficiency since the cause of the failure was not reasonably within the licensee's ability to foresee and correct to prevent the failure. Because a performance deficiency was not associated with this issue, it was not subject to evaluation under the Significance Determination Process (SDP). The licensee risk evaluation, assuming that the valve had been out of service for nine months, found that the increase in core damage probability was very small (less than  $1E-7$ ). The significance of the event was mitigated because the redundant valve MOV 3-744A was available to open should a demand occur. Other higher pressure injection paths remained available. The licensee's evaluation resulted in a very low safety significance finding (Green).

Enforcement: The NRC concluded that a violation of Technical Specification 3.5.2 occurred; however, the violation was not attributable to an equipment failure that was avoidable by reasonable licensee quality assurance measures or management controls. Because the applicable criteria specified in the NRC's Enforcement Policy was satisfied,

the NRC is exercising enforcement discretion in accordance with Section VII.B.6 of the Enforcement Policy and is refraining from issuing enforcement action for this violation.

#### 40A5 Other Activities

##### .1 (Closed) NRC Temporary Instruction (TI) 2515/169, Mitigating Systems Performance Index (MSPI) Verification

###### a. Inspection Scope

During this inspection period, the inspectors completed a review of the licensee's implementation of the Mitigating Systems Performance Index (MSPI) guidance for reporting unavailability and unreliability of monitored safety systems in accordance with Temporary Instruction 2515/169.

The inspectors examined the following surveillances that the licensee determined would not render the train unavailable for greater than 15 minutes or during which the system could be promptly restored through operator action and therefore, are not included in unavailability calculations. As part of this review, the recovery actions were verified to be uncomplicated and contained in written procedures.

- 0-OSP-202.3, Safety Injection Pump and Piping Venting
- 3/4-OSP-064.1, Safety Injection Check Valve Full flow Test
- 3/4-OSP-75.1, Auxiliary Feedwater Train 1 Operability Verification
- 3/4-OSP-203.1, Train A Engineered Safeguards Integrated Test
- 3/4-OSP-023.1, Diesel Generator Operability Test
- 3/4-OSP-023.2, Diesel Generator 24 Hour full Load Test
- 3/4-OSP-050.2, Residual Heat Removal Inservice Test
- 3/4-OSP-50.11, Residual Heat Removal Manual Valve Operability Test

On a sample basis, the inspectors reviewed operating logs, work history information, maintenance rule information, corrective action program documents, and surveillance procedures to determine the actual time periods the MSPI systems were not available due to planned and unplanned activities. The results were then compared to the baseline planned unavailability and actual planned and unplanned unavailability determined by the Licensee to ensure the data's accuracy and completeness. Likewise, these documents were reviewed to ensure MSPI component unreliability data determined by the licensee identified and properly characterized all failures of monitored components. The unavailability and unreliability data were then compared with performance indicator data submitted to the NRC to ensure it accurately reflected the performance history of these systems.

###### b. Findings and Observations

No findings of significance were identified.

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With exceptions, the licensee accurately documented the baseline planned unavailability hours, the actual unavailability hours and the actual unreliability information for the MSPI systems. Discrepancies were largely identified in the licensee's validation effort, which verified data used in the indicator starting with second quarter 2003. The licensee stated that no significant errors in the reported data were identified, which resulted in a change to the indicated index color. No significant discrepancies were identified in the MSPI basis document which resulted in: (1) a change to the system boundary, (2) an addition of a monitored component, or (3) a change in the reported index color. The inspector identified the following discrepancies. The licensee was reviewing the issues and evaluating if any changes to the MSPI basis document or data submittals were needed.

- July 25, 2005, The 4C component cooling heat exchanger was removed from service for cleaning. The 29 planned hours should have been counted as unplanned.
- August 2, 2002, The 3A component cooling pump was removed from service due to breaker failure. The 100 hours unplanned unavailability was reported as planned.
- First quarter 2002, 50 hours of planned unavailability for the 3B high head safety injection pump was not included in the basis document.
- Diesel bar-over times, typically 50 minutes per engine per month are not included in the unavailability time. The licensee was developing a procedure to assure prompt restoration if the engine was needed.

#### 40A6 Exit

##### Exit Meeting Summary

The resident inspectors presented the inspection results to Mr. Jones and other members of licensee management on January 18, 2007. The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. The licensee did not identify any proprietary information.

Interim exit meetings for section 1R08 were held on November 9 and 17, 2006 and Interim re-exit by phone on December 21, 2006 with Plant Manager, ISI and Engineering Services personnel. Some proprietary information was reviewed and is not contained in the report input.

#### 40A7 Licensee Identified Violations

The following violations of very low safety significance (Green) were identified by the licensee and are violations of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600 for being dispositioned as NCVs:

- TS 6.8.1.a requires that the written procedures of Appendix A to NRC Regulatory Guide 1.33, Revision 2, February 1978, be implemented. The regulatory guide includes procedures for Jumper Control. The licensee implements this

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requirement in part, using administrative procedure 0-ADM-701, Control of Plant Work Activities, which states in Section 5.1.2.4 that any lifted lead will be documented and independently verified. Contrary to the above, on November 24, during performance of 4-OSP-203.1, Engineered Safeguards Testing, a lead to be lifted on terminal 4T09 for a jumper of the Unit 4 turbine bearing lift pump starter, although documented, was not independently verified. When identified by the licensee during management reviews of equipment configuration, condition report 2006-34325 was written, the jumper was properly lifted, and an investigation was initiated. The finding is of very low safety significance because the failure to conduct an independent verification was identified and corrected prior to challenging operability of safety systems.

- TS 6.8.1.a requires that written procedures covering the activities of Regulatory Guide 1.33, Revision 2, Appendix A, February 1978 be implemented. Section 3.f.(1) of Appendix A requires procedures for maintaining containment integrity including procedures to support refueling operations. The licensee implements these requirements, in part, with procedure 4-OSP-051.12, Refueling Containment Penetration Alignment, which requires each containment penetration to be isolated or capable of being isolated with an operable automatic containment isolation valve. Contrary to the above, on November 2, 2006, containment penetration #4 was not able to be isolated due to an open, but untracked flowpath using drain valves 4-730A and 4-730C along with MOV 4-730. This condition was maintained until November 20, 2006 at which time the discrepancy was identified and actions were taken by the shift to isolate the penetration. During the time that penetration #4 was open and was not being tracked as open by the licensee, Unit 4 had completed a core offload and was in the process of performing a core reload. The violation was identified during a licensee review of plant configuration. The issue was of very low safety significance due to the small size (3/4 inch) of the open penetration. When identified, the licensee documented the issue in the corrective actions program (CR 2006-34059) and stopped fuel movement.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure



## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee personnel:

J. Antignano, Fire Protection Supervisor  
J. Connolly, Acting Licensing Manager  
S. Greenlee, Engineering Manager  
D. Hoffman, Operations Superintendent  
T. Jones, Site Vice-President  
M. Moore, Corrective Actions Supervisor  
M. Murray, Emergency Preparedness Supervisor  
M. Navin, Operations Manager  
K. O'Hare, Radiation Protection and Safety Manager  
M. Pearce, Plant General Manager  
D. Poirier, Maintenance Manager, Unit 4 Outage Manager  
W. Pravat, Work Controls Manager  
G. Warriner, Quality Manager  
B. Webster, Senior Vice President, Operations

#### NRC personnel:

M. Ernstes, Chief, Reactor Projects Branch 3

### LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

#### Closed

05000250, 251/TI-2515/169	TI	Mitigating Systems Performance Index Verification (Section 4OA5)
05000250/2006-003-00	LER	Failure of RHR MOV 3-744B, Cold Leg Isolation Valve (Section 4OA3)
05000250/2006-002-02	URI	Failure of MOV-3-744b to Open When Demanded on March 7, 2006 (Section 4OA3)

#### Opened and Closed

05000251/2006-005-01	NCV	Failure to Identify Indications During a Steam Generator Eddy Current Examination (Section 1R08)
05000251/2006-005-02	NCV	Failure to Comply with Core Alteration Procedures for Handling of Irradiated Fuel (Section 1R20)

## LIST OF DOCUMENTS REVIEWED

### Inservice Inspection Activities 1R08 (IP 71111.08)

#### Nondestructive Examination

- CAL-1, Ultrasonic Instrument Linearity Verification, Rev. 5
- CAL-3, Calibration Verification of Temperature Measurement Devices, Rev. 6
- Summary of Inservice Examinations (NIS-1), 4<sup>th</sup> Interval 1<sup>st</sup> Period, Attachment 2
  
- NDE 5.16, Ultrasonic Examination Technique for the Detection of Cracking in Feedwater Piping, Rev. 9
- NDE 4.1, Visual Examination VT-1 Welds/bolting/Bushings/Washers, Rev. 12
- NDE 4.3, Visual Examination VT-3, Rev. 10
- NDE 5.1, Ultrasonic Examination of Pressure Vessel Welds, Rev. 11
- NDE 5.4, Ultrasonic Examination of Austenitic Piping Welds, Rev. 17
- NDE 9.3, Radiographic Examination General Requirements, Rev. 1
- NDE 9.4, Magnetic Particle Examination in Accordance with Construction Codes, Rev. 0
- NDE 9.5, Liquid Penetrant Examination in Accordance with Construction Codes, Rev. 1
- O-ADM-537, Boric Acid Corrosion Control Program, 6/16/03
- O-OSP-041.26, Containment Visual Leak Inspection, Dated 6/27/2006
- CSI-NDE-05-076, Eddy Current Implementation Plan for Steam Generator Tubing at TP4, 9/13/06
- 51-5022683-04, TP 3 & 4 Eddy Current Data Analysis Guidelines, Fall 2006
- 51-5029214-05, Qualified Eddy Current Techniques for PTN 3 & 4
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