



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

April 30, 2008

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  
05000250/2008002 AND 05000251/2008002

Dear Mr. Stall:

On March 31, 2008, 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 April 22, 2008, with Mr. W. Jefferson 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, one finding of significance (violation) was identified. Also a licensee identified violation which was determined to be of very low safety significance is listed in this report. NRC is treating these violations as Non-cited Violations consistent with Section VI.A.1 of the NRC Enforcement Policy because of the very low safety significance of the issues 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.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of 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/***

Marvin D. Sykes, Chief  
Reactor Projects Branch 3  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000250/2008002 and 05000251/2008002  
w/Attachment: Supplemental Information

cc w/encls.: (See page 3)

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Letter to J. Art Stall from Marvin D. Sykes dated April 30, 2008

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05000250/2008002 AND 05000251/2008002

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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.: 05000250/2008002, 05000251/2008002

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: January 1 - March 31, 2008

Inspectors: S. Stewart, Senior Resident Inspector  
M. Barillas, Resident Inspector  
H. Gepford, Senior Health Physicist (Sections 2PS1, 2PS3)  
W. Loo, Senior Health Physicist (Section 2PS1)  
A. Nielsen, Health Physicist (Sections 2OS3, 2PS3)  
R. Aiello, Senior Operations Engineer (1R11, 4OA2)  
B. Caballero, Operations Engineer (1R11)

Accompanied By: T. Chandler, Trainee  
P. Lessard, Trainee

Approved By: M. Sykes, Chief  
Reactor Projects Branch 3

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## SUMMARY OF FINDINGS

IR 05000250/2008-002, 05000251/2008-002; 01/01/2008 - 03/31/2008; Turkey Point Nuclear Power Plant, Units 3 and 4; Problem Identification and Resolution.

The report covered a three-month period of inspection by resident and region-based inspectors. One Green non-cited violation (NCV) was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using NRC Inspection Manual Chapter 0609, Significance Determination Process (SDP). Findings for which the SDP does not apply may be Green or 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 4, dated December 2006.

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

#### **Cornerstone: Mitigating Systems**

Green. The inspectors identified a Non-cited violation of Technical Specification (TS) 6.8.5 for the failure of the licensee to properly implement procedure requirements regarding the control of overtime for operations personnel that may perform safety-related duties. To address this issue the licensee has revised the operations shift scheduling to reduce or eliminate the need for overtime beyond the limits specified in licensee procedures.

The finding is greater than minor in accordance with Inspection Manual Chapter (IMC) 0612, Power Reactor Inspection Reports, "Appendix B, Issue Screening." If left uncorrected, the excessive work hours could adversely affect the station's defense-in-depth and increase the likelihood of human errors during response to plant events and would become a more significant safety concern. The failure to implement requirements for controlling the use of overtime is contrary to TS and is a performance deficiency which could adversely the impact operability to monitor safe operation of the plant and other onsite activities. This issue has a cross-cutting aspect in the area of Human Performance, Resources (Item H.2.(c) of IMC 0305, because sufficient qualified personnel were not available to maintain working hours within working hour guidelines. (4OA2)

### B. Licensee Identified Violations

A violation of very low safety significance, 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. This violation and corrective actions are listed in Section 4OA7 of this report.

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## REPORT DETAILS

### Summary of Plant Status:

Unit 3 began the period at or near full power. On January 10 and again on January 12 reactor power was reduced approximately 5 MWe pursuant to Technical Specification 3.0.3 when two rod position indicators in control rod bank A were declared inoperable. After some minor cleaning, one rod position indicator was returned to normal, the TS was exited and the reactor was returned to full power. Again on January 18 reactor power was reduced 5 MWe pursuant to TS 3.0.3 when two rod position indicators in control rod bank A were declared inoperable. After a minor modification, one rod position indicator was returned to normal and the reactor was returned to full power. On February 26 Unit 3 tripped from full power at 1309 hours due to an offsite grid disturbance. The unit was stabilized in Mode 3. Unit 3 was critical at 0511 hours on March 3, 2008, and was returned to full power on March 4.

Unit 4 operated at or near full power during the inspection period with the following exception: On February 26 Unit 4 tripped from full power at 1309 hours due to an offsite grid disturbance. The unit was stabilized in Mode 3. Unit 4 was returned to critical on February 28 at 0615 hours and manually tripped at 0451 hours on February 29 due to a steam generator water level transient. After repairs, Unit 4 was returned to critical at 0009 hours on March 1 and reached full power on March 2, 2008. Unit 4 began a power reduction on March 30 and the plant was subsequently shutdown and cooled to Mode 5 on March 31 for refueling outage 24.

### 1. REACTOR SAFETY

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

#### 1R01 Adverse Weather Protection

##### a. Inspection Scope

During the week of January 1 the inspectors verified the status of licensee actions in accordance with licensee off-normal procedure 0-ONOP-103.2, Cold/Hot Weather Conditions. The inspectors checked Technical Specifications and the Updated Final Safety Analysis Report (UFSAR) for cold weather design features and monitored the periodic testing of the diesel driven instrument air compressors during lower temperature weather. Although the licensee had initiated cold weather mitigation using off-normal procedures, there were no actual cold weather conditions at the site. This was the annual review of cold weather verification and included physical walkdowns of the following plant areas to check for any specific cold weather vulnerabilities and reviews of operator actions used to mitigate cold weather:

- Boric acid storage tank and transfer pump area
- Unit 3 charging pump area
- Unit 4 charging pump area

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b. Findings

No findings of significance were identified.

1R04 Equipment Alignment.1 Partial Equipment Walkdownsa. Inspection Scope

The inspectors conducted partial alignment verifications of the three 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 operable systems were correctly aligned.

- Unit 4, auxiliary feedwater system alignment when the B standby steam generator feedwater pump was removed from service due to wiring deficiencies (CR 2007-41939). The alignment was checked using license procedure 4-OP-075, Auxiliary Feedwater System.
- Units 3 and 4, boric acid storage system using 0-OP-046, Chemical and Volume Control System (CVCS) - Boron Concentration Control and 3-OSP-046.3, CVCS - Boration Systems Flowpath Verification following overflow of the boric acid batch tank while transferring boric acid solution from the temporary tanker (CR 2008-3212)
- Unit 4, 4A and 4B emergency diesel generators and the station blackout cross-tie when the Unit 4 startup transformer was removed from service for preventive maintenance. The walkdown was done using licensee procedure 4-OP-023, Emergency Diesel Generator.

b. Findings

No findings of significance were identified.

.2 Complete System Walkdowna. Inspection Scope

The inspectors conducted a detailed walkdown/review of the alignment and condition of the Unit 4 125V DC batteries to verify the 125V DC system will provide a reliable power supply for equipment, controls and instrumentation required to bring the plant to shutdown and maintain a safe shutdown in the event of a loss of all AC power. The inspectors used licensee procedure O-OP-003.1, 125V Vital DC System and drawing 5610-T-E-1592 (125V DC and 120V instrument AC electrical distribution), 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) electrical power was available as required to the battery chargers; (2) major portions of the system and components were correctly labeled, cooled, and ventilated; (3) selected supports were correctly installed and functional; (4) essential support systems were operational; (5) ancillary equipment or debris did not interfere with system performance; and (6) tagging clearances were appropriate. Pending design and equipment issues were reviewed to determine if the identified deficiencies significantly impacted the system's functions. The system health report for the 125V DC and 120 VAC Instruments was used in the review. In addition, the inspectors reviewed the licensee's corrective action program to ensure that the licensee was identifying and resolving equipment alignment problems in a timely manner.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

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 using 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 a daily 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:

- main control room
- 3A emergency diesel generator room
- 4B 4160 volt switchgear room
- 4A emergency diesel generator room
- intake cooling water pump area
- 4A 125V DC battery room
- 3A 4160 volt switchgear area
- cable spreading room
- auxiliary building exterior hallway

b. Findings

No findings of significance were identified.

## 1R11 Licensed Operator Regualification Program

### .1 Quarterly Review

#### a. Inspection Scope

On January 8 the inspectors observed and assessed licensed operator training activities in the plant specific simulator to verify that operator performance was adequate and that evaluators were identifying and documenting crew performance problems. The simulated events were done per Scenario 75004201, which involved a loss of main condenser vacuum followed by a steam generator tube rupture. The inspectors observed the operator's use of procedures 3-EOP-E-0, Reactor Trip and Safety Injection, 3-EOP-E-3, Steam Generator Tube Rupture, and 3-ONOP-0100, Fast Load Reduction. Event classifications (including Unusual Event, and Alert) were checked for proper classification and timely notification of state agencies using licensee procedure 0-EPIP-20101, Duties of the Emergency Coordinator. The simulator board configurations were compared with actual plant control board configurations including recent modifications. 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
- Control board operation and manipulation, including high-risk operator actions
- Oversight and direction provided by supervision, including ability to identify and implement appropriate Technical Specification actions, regulatory reporting requirements, and emergency plan classification and notification; crew overall performance and interactions

#### b. Findings

No findings of significance were identified.

### .2 Biennial Review

#### a. Inspection Scope

The inspectors reviewed the facility operating history and associated documents in preparation for this inspection. During the week of January 14 - 18, 2008, the inspectors reviewed documentation, interviewed licensee personnel, and observed the administration of operating tests associated with the licensee's operator requalification program. Each of the activities performed by the inspectors was done to assess the effectiveness of the licensee in implementing requalification requirements identified in 10 CFR Part 55, "Operators' Licenses." The evaluations were also performed to determine if the licensee effectively implemented operator requalification guidelines established in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," and

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Inspection Procedure 71111.11, "Licensed Operator Requalification Program." The inspectors also evaluated the licensee's simulation facility for adequacy for use in operator licensing examinations using ANSI/ANS-3.5-1998, "American National Standard for Nuclear Power Plant Simulators for use in Operator Training and Examination." The inspectors observed two crews during the performance of the operating tests. Documentation reviewed included written examinations, Job Performance Measures (JPMs), simulator scenarios, licensee procedures, on-shift records, simulator modification request records and performance test records, the feedback process, licensed operator qualification records, remediation plans, watchstanding, and medical records. The records were inspected using the criteria listed in Inspection Procedure 71111.11. Documents reviewed during the inspection are listed in the List of Documents Reviewed.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the following three equipment and associated Condition Reports to verify that licensee maintenance efforts comported with 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 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 corrective maintenance activities. Furthermore, the inspectors verified that equipment problems were being identified and entered into the corrective action program.

- CR 2008-3253, Primary water storage tank exceeded the Maintenance Rule unavailability performance criteria
- CR 2008-4110, Maintenance Rule impact of Unit 3 intake cooling water basket strainer backwash valves hard to operate
- CR 2008-6948, 3C Intake cooling water pump abnormal indications on startup, abnormal noise and fluctuating amps

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 eight 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) and the recommendations of Nuclear Management and Resource Council 93-01, Industry Guidelines for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants, Revision 3. Implementation of licensee procedures O-ADM-068, Work Week Management; and O-ADM-225, On Line Risk Assessment and Management were also verified. The inspectors 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:

- January 11, 2008, risk assessment for unit 4 rod position indication (RPI) H-4 repair after multiple indicator failures (WO 38000145 01)
- January 22, risk assessment for Unit 3 during period when PORV block valve was shut. CR 2008-2458 was written when the inspector found that the risk assessment had not been updated to reflect the configuration change.
- January 24, Unit 3 and unit 4 risk assessment during preventive maintenance on MOV-878A (WO 36001407)
- February 11, 2008, risk assessment after 4C intake cooling water pump was declared inoperable for a failed inservice test on the discharge check valve. (CR 2008-4741, Work Request 38002073)
- February 14 risk assessment when the Unit 4 startup transformer was removed from service for preventive maintenance. (Multiple tasks, SUTXOUT429)
- February 19 risk assessment while unit 4 AFW train 2 was out of service for FCV-4-2832 on 4B SG (WO 38003984-01).
- March 4 risk assessment and risk management actions while replacing fossil unit protective relay panels in the Turkey Point switchyard.
- March 6 Unit 3, risk assessment following failure of Train 1 auxiliary feedwater nitrogen regulator while the 3C intake cooling water pump was out of service for replacement (CR 2008-8040).

### b. Findings

No findings of significance were identified.

## 1R15 Operability Evaluations

### a. 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

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inspectors reviewed the UFSAR, applicable supporting documents and procedures, and interviewed plant personnel to assess the adequacy of the interim condition report disposition.

- CR 2007-14089, Unit 4 refueling water tank purification pump inoperable causing no recirculation of water in the tank prior to chemistry sampling since March 17, 2007.
- CR 2008-2454, Unit 4 A high head safety injection pump oiler level dropped during a preventive maintenance run.
- CR 2008-684, Operability assessment after the 3A main steam isolation valve backup nitrogen header regulator was found (92 psig) out of the acceptable set point range of 78 to 90 psig.
- CR 2007-35511, 3A reactor coolant pump vibration spiking to verify no degradation of the pump has occurred that would cause vibration limits to be reached and require a reactor trip.
- CR 2008-5841, Unit 3, 4-inch elbow adjacent to basket strainer BS-3-1403 was supplied as commercial grade.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

For the seven 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 and 4; Diesel driven fire pump after inadvertent loss of oil during operation (CR 2008-130), tested using 0-OSP-016.23, Diesel Driven Fire Pump Operability Test. The review included a check of vibration data obtained by the licensee (1-2-2008).
- Unit 3 and 4; stroke testing of MOV-878A after preventive maintenance on the starter in accordance with work order 36001407. The stroke testing was not timed.
- Unit 4: Post maintenance test following preventive maintenance on room high temperature alarm using work order 37017246.
- Unit 4: Post maintenance test of CV-4-2832 (4B steam generator train 2 auxiliary feedwater flow control valve) following excessive oscillations during 4-OSP-075.2, Auxiliary Feedwater Train 2 Operability Verification. The repair and replacement of the I/P converter were done with work orders 38003984 and

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38003992. The operability verification (4-OSP-07 5.2) was repeated satisfactorily. (CR 2008-5074).

- Auxiliary Feedwater Train 1 Backup Nitrogen Test, 3-OSP-075.6 completed procedure related to PC-3-1706 replacement in work order 37005673-01.
- Unit 3: Post maintenance testing of rod position indication following cleaning and modification of control room indicators per Work order 38000512.
- Unit 4: Post maintenance testing of rod position indication following cleaning and modification of control room indicators per Work order 38000541.

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities

.1 Dual Unit Outage

a. Inspection Scope

The inspectors observed the short duration Mode 3 outages that started on February 26 following the dual unit reactor trip. The inspectors evaluated licensee activities to verify the licensee considered risk in developing work 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. The inspectors reviewed outage activities to verify that risk management strategies were implemented, including availability of safety systems and reactivity management. 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 verified that outage items had been entered into the licensee's corrective action program at an appropriate threshold.

b. Findings

No findings of significance were identified.

.2 Unit 4 Refueling Outage 24

Review of Outage Plan

a. Inspection Scope

Unit 4 entered a refueling outage on March 31, 2008. Prior to the outage, the inspectors reviewed the licensee's outage plan and risk management activities. Licensee procedure O-ADM-051, Outage Risk Assessment and Control, and various maintenance schedules were reviewed to verify that the licensee had performed adequate risk assessments and had planned risk-management strategies as required by 10 CFR 50.65(a)(4).

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b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors either reviewed or witnessed the following seven 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 risk 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 system to perform its intended safety function. The tests reviewed included one inservice test (IST) and one reactor coolant system leak rate determination.

- 3-OSP-024.2, Emergency Bus Load Sequencers Manual Test for 3A train
- 3-OSP-059.5, Power Range Nuclear Instrument Shift check and Daily Calibration
- 3-OSP-023.1, (3A) Emergency Diesel Generator Operability Test
- 3-OSP-023.2, (3B) Diesel Generator 24 Hour Full Load Test and Load Rejection
- 4-OSP-059.5, Power Range Nuclear Instrumentation Shift Checks
- 3-OSP-041.1, Reactor Coolant System leak rate calculation
- 3-OSP-072.2, Main Steam Isolation Valve Nitrogen Backup Periodic Test

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the two temporary system alterations (TSA) listed below to ensure that they did not adversely affect the operation of the affected systems. 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.

- TSA 07-022, Temporary power to selected loads during load center 3F and 3G maintenance



- TSA 08-001, Alternate temperature input to the 3A Overpressure Mitigation System (OMS)

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation

.1 Emergency Preparedness Drill

Simulator Based Emergency Drill

a. Inspection Scope

On February 14, 2008, the inspectors observed the licensee's emergency drill that included event classifications and notifications. Results of the drill were used by the licensee as inputs into the Drill/Exercise Performance and Emergency Response Organization Drill Participation Performance Indicators. The simulation began with steam generator tube leak which later becomes a tube rupture. A fire in the area causes a loss of offsite power resulting in a site area emergency classification. The inspectors observed the initial events and implementation of the licensee emergency response plan in the site specific simulator. After the technical support center was made operational, the inspectors observed event evaluation, including classifications and notifications made from this location. At the conclusion of the drill, the inspectors discussed the drill with plant staff and noted that licensee identified problems were documented in the corrective actions program (CR 2008-5513, 2008-5564, 2008-5273).

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Occupational Radiation Safety Cornerstone

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

a. Inspection Scope

Radiation Monitoring Instrumentation: During tours of the auxiliary building and spent fuel pool areas, the inspectors observed installed radiation detection equipment including the following instrument types: Area Radiation Monitors (ARMs), Continuous Air Monitors, Personnel Contamination Monitors (PCMs), and components of the Post-Accident Sampling System. The inspectors observed the physical location of the components, noted the material condition, and compared sensitivity ranges with Updated Final Safety Analysis Report (UFSAR) requirements.

In addition to equipment walk-downs, the inspectors observed functional checks, calibrations, and alarm setpoint testing of various fixed and portable detection instruments. These observations included: calibration of portable ion chambers and electronic dosimeters, source checks of PCMs and Portal Monitors (PMs), and daily Quality Assurance checks on a whole body counter. The most recent 10 CFR Part 61 analysis for Dry Active Waste was reviewed to determine if calibration and check sources are representative of the plant source term.

The inspectors reviewed the last two calibration records for selected PCMs, PMs, and for the Unit 3 containment high-range ARMs. Calibration stickers on portable survey instruments were noted during inspection of storage areas for ready-to-use equipment.

Operability and reliability of selected radiation detection instruments were reviewed against details documented in the following: 10 CFR Part 20; NUREG-0737, Clarification of TMI Action Plan Requirements; Technical Specifications (TS) Section 3; UFSAR Chapter 11; and applicable licensee procedures. Documents reviewed during the inspection are listed in Section 2OS3 of the report Attachment.

Self-Contained Breathing Apparatus (SCBA) and Protective Equipment Selected SCBA units staged for emergency use in the Control Room and other locations were inspected for material condition, air pressure, and number of units available. The inspectors also reviewed maintenance records for selected SCBA units for the past five years and certification records associated with supplied air quality.

Qualifications for individuals responsible for testing and repairing SCBA vital components were evaluated through review of training records. In addition, Main Control Room operators were interviewed to determine their knowledge of available SCBA equipment locations, including corrective lens inserts if needed, and their training on bottle change-out during a period of extended SCBA use. Respirator qualification records were reviewed for several Main Control Room operators and emergency responder personnel in the Maintenance Department.

Licensee activities associated with maintenance and use of respiratory protection equipment were reviewed against 10 CFR Part 20; Regulatory Guide (RG) 8.15, Acceptable Programs for Respiratory Protection; and applicable licensee procedures. Documents reviewed during the inspection are listed in Section 2OS3 of the report Attachment.

Problem Identification and Resolution Selected licensee Condition Reports (CRs) associated with instrumentation and protective equipment were reviewed and assessed. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with procedure NAP-204, Condition Reporting, Revision (Rev.) 14. The inspectors also evaluated the scope of the licensee's internal audit program and reviewed recent assessment results. Documents reviewed are listed in Section 2OS3 of the report Attachment.

The inspectors completed eight (8) of the nine (9) specified line-item samples detailed in Inspection Procedure (IP) 71122.01.

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b. Findings

No findings of significance were identified.

**Cornerstone: Public Radiation Safety**

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

a. Inspection Scope

Effluent Monitoring and Radwaste Equipment During inspector walk-downs of Units 3 and 4, accessible sections of the liquid and gaseous radioactive waste (radwaste) processing and effluent systems were assessed for material condition and conformance with system design diagrams. The inspection included drain tanks, monitor tanks, waste monitor tanks, waste holdup tanks, demineralizer system, liquid waste system pumps, valves, and piping, and associated airborne effluent sample lines. The inspectors interviewed chemistry supervision and operations personnel regarding radwaste equipment configuration and effluent monitor operation.

The inspectors reviewed performance records and calibration results for selected radiation monitors, flowmeters, and air filtration systems. The inspectors reviewed the out-of-service logbook and verified that required compensatory sampling was performed. Select surveillances and performance and operations of select systems were reviewed and discussed with cognizant licensee personnel.

Installed configuration, material condition, operability, and reliability of selected effluent sampling and monitoring equipment were reviewed against details documented in the following: 10 CFR Part 20; RG 1.21, Measuring, Evaluating and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials In Liquid and Gaseous Effluents from Light-Water Cooled Nuclear Power Plants; ANSI - N13.1-1969, Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities; TS Section 6; the Offsite Dose Calculation Manual (ODCM), Rev. 21; and UFSAR, Chapters 1 and 11. Procedures and records reviewed during the inspection are listed in Section 2PS1 of the report Attachment.

Effluent Release Processing and Quality Control (QC) Activities The inspectors discussed with cognizant licensee representatives the procedures and processes followed by chemistry personnel for obtaining waste gas samples and liquid effluent samples from waste monitor tanks. In addition, the inspectors discussed the process for performing liquid and gaseous releases with cognizant licensee representatives that included system alignments and verifications that are performed. Chemistry technician proficiency in collecting, processing, and counting samples, as well as preparing the applicable release permits, was reviewed.

QC activities associated with gamma spectroscopy were discussed with count room technicians and Chemistry supervision. The inspectors reviewed daily QC data logs for High Purity Germanium (HPGe) detectors 1, 2, and 3, and reviewed licensee procedural guidance for count room QC activities. The inspectors also reviewed the QC data for the

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liquid scintillation counters. The inspectors reviewed calibration records for select HPGe detectors (select counting geometries), liquid scintillation counters, and alpha/beta proportional counters. In addition, results of the radiochemistry cross-check program for 2006 and 2007 were reviewed and discussed with cognizant licensee individuals. Selected portions of procedures for effluent sampling, processing, and release were evaluated for consistency with licensee actions. Select liquid and gaseous release permits were reviewed against ODCM specifications for pre-release sampling and effluent monitor setpoints. The inspectors discussed performance of pre-release sampling and analysis, release permit generation, and radiation monitor setpoint adjustment with chemistry technicians and control room operators. The inspectors reviewed the 2005 and 2006 annual effluent reports to evaluate reported doses to the public and ODCM changes. Public dose calculations were reviewed and discussed with cognizant licensee personnel. In addition, ODCM changes were discussed with design engineering and chemistry personnel.

Observed task evolutions, count room activities, and offsite dose results were evaluated against details and guidance documented in the following: 10 CFR Part 20 and Appendix I to 10 CFR Part 50; ODCM; RG 1.21; RG 1.109, Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50 Appendix I; RG 1.33, Quality Assurance Program Requirements (Operation); and TS Section 6. Procedures and records reviewed during the inspection are listed in Section 2PS1 of the report Attachment.

Groundwater Monitoring The inspectors discussed current and future programs for onsite groundwater monitoring with chemistry supervisors, including number and placement of monitoring wells and identification of plant systems with the most potential for contaminated leakage. The inspectors also reviewed procedural guidance for identifying and assessing onsite spills and leaks of contaminated fluids. In addition, the inspectors discussed contaminated spills that had occurred since the last inspection and evaluated whether records had been retained for decommissioning purposes as required by 10 CFR Part 50.75(g).

Problem Identification and Resolution Select CRs, audits, and self-assessments associated with effluent release activities were reviewed and assessed. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve selected issues in accordance with procedure NAP-204, Condition Reporting, Rev. 14. Reviewed documents are listed in Section 2PS1 of the report Attachment.

The inspectors completed three of the specified line-item samples detailed in IP 71122.01.

b. Findings

No findings of significance were identified.

## 2PS3 Radiological Environmental Monitoring Program (REMP) and Radioactive Material Control Program

### a. Inspection Scope

REMP Implementation The inspectors observed the collection of environmental samples and surveillance of sampling instruments during the licensee's weekly environmental run. The inspectors noted the material condition and operability of airborne particulate and iodine sampling stations at monitoring locations T51, T57, T52, T58, T41, and T56. The inspectors observed collection of airborne particulate filters and iodine cartridges at the monitoring locations referenced above. Material condition of thermoluminescent dosimeters (TLDs) NNW-6, WNW-3, WNW-2, N-7, NNW-2, NW-5, W-5, W-1, NNW-2, NW-2, W-7, and NW-1, was evaluated. The inspectors observed broadleaf vegetation sample collection at monitoring locations T40 and T41, and surface water and/or sediment sample collection at monitoring locations T84, T81, T75, T04, T85, T08, and T09.

The inspectors determined the current location of selected air samplers, surface water, sediment, TLD, and vegetation sampling stations using global positioning system instrumentation and compared the results with ODCM data. Land use census results and sample collection/processing activities were discussed with State of Florida environmental technicians and corporate environmental affairs personnel.

The inspectors reviewed the previous calibration records for the environmental air samplers. The inspectors also reviewed the 2005 and 2006 REMF reports, 2005-2006 results of the interlaboratory cross-check program, and procedures for environmental sample collection and processing. The inspectors discussed missed samples and inoperable samplers reported in the REMF reports, detection capabilities, and cross-check results with cognizant personnel.

Program implementation, sampling locations, and environmental monitoring results were reviewed against: 10 CFR Part 20; Appendix I to 10 CFR Part 50; TS 5.5.1; ODCM; RG 4.15, Quality Assurance for Radiological Monitoring Programs (Normal Operation) - Effluent Streams and the Environment; and Branch Technical Position, An Acceptable Radiological Environmental Monitoring Program - 1979. Documents reviewed are listed in Section 2PS3 of the report Attachment.

Meteorological Monitoring Program During a walkdown of the Land Utilization (10 meter) and South Dade (60 meter) meteorological towers and associated equipment, the inspectors observed the physical condition of the towers and discussed equipment operability and maintenance history with cognizant licensee personnel. The inspectors also reviewed and discussed planned and implemented design changes made to the equipment. During performance of surveillance testing, the inspectors compared locally generated meteorological data with information available to control room operators. The inspectors reviewed out-of-service periods for the meteorological instruments and verified implementation of appropriate compensatory measures and corrective actions. For the meteorological measurements of wind speed, wind direction, and temperature, the inspectors reviewed calibration records for applicable tower instrumentation and

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evaluated measurement data recovery from January 2006 through September 2007.

Licensee procedures and activities related to meteorological monitoring were evaluated against: ODCM; UFSAR Section 2.3; ANSI/ANS-2.5-1984, Standard for Determining Meteorological Information at Nuclear Power Sites; and Safety Guide 23, Onsite Meteorological Programs. Documents reviewed are listed in Section 2PS3 of the report Attachment.

Unrestricted Release of Materials from the Radiologically Controlled Area (RCA) The inspectors observed surveys of material and personnel being released from the RCA using Small Article Monitor (SAM), PCM, and PM instruments. The inspectors also observed source checks of these instruments and discussed equipment sensitivity and release program guidance with licensee staff. To evaluate the appropriateness and accuracy of release survey instrumentation, radionuclides identified within recent waste stream analyses were compared with radionuclides used in current calibration sources and performance check sources. The inspectors also reviewed the last two calibration records for selected SAM, PCM and PM instruments.

Licensee programs for monitoring materials and personnel released from the RCA were evaluated against 10 CFR Part 20 and IE Circular 81-07, Control of Radioactively Contaminated Material. Documents reviewed are listed in Section 2PS3 and 2OS3 of the report Attachment.

Problem Identification and Resolution The inspectors reviewed self-assessments and CRs involving environmental monitoring, meteorological monitoring, and release of radioactive materials. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with NAP-204, Condition Reporting, Rev. 14. Documents reviewed are listed in section 2PS3 of the report Attachment. The inspectors completed 10 of the specified line-item samples detailed in IP 71122.03.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

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

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condition report database. Additionally, reactor coolant system unidentified leakage was routinely checked 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 three topics and a sampling of associated 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 resolution of the problem including cause determination and corrective actions. 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. In addition, the inspectors reviewed Operations Department shift working schedule and qualification records to verify that a minimum TS control room staff requirement is being met.

- CR 2008-4742, Excessive amount of required/forced overtime in nuclear system operator classification, CR 2008-4743 Operations staffing less than required midshift February 10, 2008, CR 2008-1695 operator inconvenience becomes a significant reactivity management event, CR 2008-1929 240 hours of reactor control operator overtime, and CR 2008-4147, 232 hours of reactor controls operator overtime.
- CR 2007-37413, no process in place to ensure periodic independent review of individual overtime for operations are documented as required by Technical Specification 6.8.5, and CR 2008-1172 Reactivity management event on January 11, 2008.

b. Findings

Introduction: The inspectors identified a non-cited violation of Technical Specification (TS) 6.8.5 for failure to properly implement procedure requirements regarding the control of overtime for two individuals that performed safety related duties.

Description: Generic Letter 82-12, issued policy regarding nuclear plant staff working hours. The GL required licensees to establish controls to prevent situations where fatigue could reduce the ability of operating personnel to keep the plant in a safe condition. The objective was to have personnel work a normal 8-hour workday, 40 hour week while the plant is operating. Other guidelines were also specified for unforeseen circumstances which could require substantial overtime. Turkey Point TS 6.8.5, requires that procedures be developed and implemented to limit the working hours of personnel who perform safety related functions, including licensed and auxiliary operators.

Deviations from the requirements shall be approved by a department manager and include documentation of the basis of granting the deviation. The TS also required that controls be included in procedures to conduct a periodic independent review of work hour deviations to ensure that excessive hours are not assigned and routine deviations from the working hour guidelines are not authorized. The licensee implements the Technical Specification requirements with procedure QI 1-PTN-1, Organization, Section 5.8, Overtime, which included the following work hour limitations:

An individual should not be permitted to work (excluding shift turnover time):

- more than 16 hours straight
- more than 16 hours in any 24 hour period
- more than 24 hours in any 48 hour period
- more than 72 hours in any seven day period
- A break of at least 8 hours between work periods should be allowed

The inspector reviewed 21 overtime hour deviations for 17 individuals submitted during the first six weeks. The deviations were generally associated with exceeding the 72 hours in seven day guideline. Typically, the basis for approving the deviation was that the individual would not exceed the 84 hour restriction. In each case reviewed, the inspectors found no cases where any fatigue assessment was documented in the approved waivers. The inspector was aware that individuals were at times, asked to work overtime with minimal notice (sometimes 1 hour). Since overtime was usually assigned by the field supervisors and approved by senior station management, the inspectors were concerned that aspects of the behavioral observations program specified in the licensee's plant access training could be subverted. The inspectors also found that deviations were sometimes approved days in advance of or after the fact, which precluded completion a fatigue assessment. The licensee was also unable to demonstrate in accordance with TS 6.8.5 that an independent review of overtime had been conducted to verify that excessive overtime had not been assigned.

The inspectors noted the following working hour conditions of two operators during the week of January 12 an individual worked 72.5 hours in the six days prior to January 18 then was assigned 8 additional hours on January 18 and no waiver was issued. (A waiver was required when assigned greater than 72 hours in 7 days.) A second individual worked 69 hours in six days prior to Jan 29 and was assigned 16.75 hours of overtime on January 29. A waiver covering the period January 29 through February 4 had been issued to the individual with the detailed basis being "prevent forcing other individuals" into overtime. The inspector noted that both individuals had been involved in a boric acid tank overflow event on January 29. The event occurred during the last four hours of a 16 hour day for both individuals and fatigue was cited as a contributor in the licensee's event investigation. The boric acid system is safety related and the event caused a spill of about 200 gallons of boric acid solution to plant drains. (CR 2008-3212).

The inspector reviewed Condition Reports initiated in January 2007 and determined licensed reactor operators as a group worked the following overtime hours during the

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week of December 29 - 192 hours; January 5 - 236 hours; January 12 - 240 hours; January 19 - 200 hours; January 26 - 232 hours. During the week of February 4 non-licensed system operators had worked about 500 hours of overtime to fill crew vacancies and the inspector was informed that these hours were typical.

Analysis: Increased use of overtime without assurances that the assigned individuals were not in a fatigued condition was contrary to the licensee's overtime policy specified in QI-1-PTN-1 and was a performance deficiency. Additionally, the inspectors could not identify that the operations department had been conducting independent assessments of working hours to ensure that excessive hours had not been assigned. The inspectors identified one example of working hours greater than the licensee's guidelines without an approved waiver. xxxThe issue is more than minor because it affected the human performance attribute of the Mitigating Systems Cornerstone objective to ensure availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Licensed reactor operators provide important event mitigation capabilities. This violation of TS requirements affected the Mitigating Systems Cornerstone and is more than minor because if left uncorrected the excessive work hours would adversely affect the station defense-in-depth approach to operation and would increase the likelihood of human errors during normal and emergency operations. The event screened as Green using NRC Manual Chapter 0609, Attachment 0609.04 because no loss of function occurred. The cross-cutting area of Human performance - Resources was affected by the finding when sufficient qualified personnel were not available to maintain working hours within working hour guidelines.

Enforcement: Turkey Point Technical Specification 6.8.5 requires that administrative procedures be implemented to limit the working hours of personnel who perform safety related functions, and that; any deviation from the guidelines be authorized by department managers or higher. The Technical Specification also requires a periodic independent review to assure that excessive working hours are not assigned. The licensee implements these requirements with procedure QI 1-PTN-1, which states in paragraph 5.8.1 that to the extent practicable, personnel are not assigned to shift duties while in a fatigued condition that could significantly reduce their mental alertness or their decision making ability. Contrary to the above, the inspectors identified multiple examples where deviations from the working hour guidelines had been authorized for several individuals (stated above) without documented assurances that a fatigue assessment had been completed. One individual had also worked hours greater than the licensee's limits without the required deviation authorization on January 18, 2008. Further, no evidence was found to indicate that an independent review had been conducted. The issue was entered into the corrective actions program as CR 2008-12234. On February 16 the licensee rearranged the operations shift schedules to reduce the need for individuals to work at the working hour limits on any routine basis. Additionally, a fatigue assessment was required for future overtime assignments. Because this violation is of very low safety significance and has been entered into the licensee's 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 05000250251/2008-02-01, Failure to implement procedures regarding overtime hours for plant operations personnel.

#### 4OA3 Event Followup

##### a. Inspection Scope

The inspectors responded to the control room and observed the licensed operator's response to the dual unit trip on February 26, 2008. The inspectors observed that mitigating systems, with only minor exceptions, performed as designed. Operator response including supervisory oversight was without error and both units were stabilized in Mode 3 without complications. No emergency plan actuations were necessary.

##### b. Findings

No findings of significance were identified.

#### 4OA6 Exit

##### 1. Exit Meeting Summary

The resident inspectors presented the inspection results to Mr. Bill Jefferson and other members of licensee management on April 22, 2008. 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.

##### 2. Annual Assessment Meeting Summary

On April 11, 2008, the NRC's Chief of Reactor Projects Branch 3, Region II Public Affairs Officer, and the Resident staff assigned to the Turkey Point Nuclear Plant met with Florida Power and Light (FP&L) managers to discuss the NRC's Reactor Oversight Process (ROP) and the Turkey Point annual assessment of safety performance for the period of January 1, 2007 – December 31, 2007. The major topics addressed were: the NRC's assessment program, the results of the Turkey Point Nuclear Plant assessment, and future NRC inspection activities. Attendees included FP&L Management and staff. No members of the public attended.

This meeting was open to the public. The NRC's presentation material used for the discussion is available from the NRC's document system (ADAMS) as accession number ML 081060281 accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

#### 4OA7 Licensee Identified Violations

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.

10 CFR 55.46(c) states, in part, a plant-referenced simulator used for the administration of the operating test or to meet experience requirements in § 55.31(a)(5) must demonstrate expected plant response to operator input and to normal, transient, and accident conditions to which the simulator has been designed to respond. 10 CFR 55.46(d) states, in part, that facility licensees that maintain a simulation facility shall conduct performance testing throughout the life of the simulation facility in a manner sufficient to ensure that paragraphs (c)(2)(ii), as applicable, and (d)(3) of 10 CFR 55.46 are met. The intent of the performance testing is to ensure that no noticeable differences exist between the simulator control room and the Unit 3 control room. The results of performance tests must be retained for four years after the completion of each performance test or until superseded by updated test results.

Contrary to the above, the licensee identified three simulator performance testing deficiencies as required by 10 CFR 55.46(c) and (d). This finding was considered more than minor because of the potential for negative training. Negative training could have occurred because of the simulator fidelity testing deficiencies. This finding was of very low safety significance because the discrepancy was on the simulator verses the actual plant. Furthermore, no negative training occurred as a result of these performance testing deficiencies. The licensee has entered these deficiencies into their corrective action program (Condition Reports 2008-462, 2008-460, and 2008-1812).

ATTACHMENT: SUPPLEMENTAL INFORMATION

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## KEY POINTS OF CONTACT

### Licensee personnel:

J. Antignano, Fire Protection Supervisor  
R. Coffey, Maintenance Manager  
J. Hamm, Engineering Manager  
R. Frew, Acting Operations Superintendent  
W. Jefferson, Site Vice-President  
K. O'Hare, Performance Improvement Manager  
G. Warriner, Emergency Preparedness Manager  
R. Wright, Operations Manager  
M. Kiley, Plant General Manager  
M. Crosby, Quality Manager  
P. Skinner, Chemistry Manager  
D. Slutzka, Radiation Protection Manager

### NRC personnel:

M. Sykes, Branch Chief, DRP  
S. Vias, Branch Chief, DRP

## LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

### Opened and Closed

05000250 & 251/2008-02-01 NCV Failure to implement procedures regarding overtime hours for plant operations personnel.

## LIST OF DOCUMENTS/DATA REVIEWED

### **Section 20S3: Radiation Monitoring Instrumentation and Protective Equipment**

#### Procedures

0-ADM-041, PTN Respiratory Protection Plan  
0-HPT-016.14, Calibration & Operation of the Thermo-Eberline PM-7 Portal Monitor  
0-HPT-018, Calibration of Survey Instruments  
3-PMI-066.3, Containment HI Range Radiation Monitoring System Channels 6311A/B  
Calibration  
NAP-204, Condition Reporting, Rev. 14

#### Calibrations, Surveillance Tests, and Licensee Records

10 CFR Part 61 Analysis, Dry Active Waste, Dated 03/28/06  
PCM-2 Calibrations, S/N 481, Dated 01/12/07 and 09/13/07; S/N 433, Dated 04/25/07 and 10/31/07; S/N 432, Dated 04/24/07 and 10/23/07; and S/N 399, Dated 04/26/07 and 10/30/07  
PM-7 Calibrations, S/N 613, Dated 05/17/07 and 12/17/07; S/N 651, 06/12/07 and 12/13/07; S/N 533, 08/09/07 and 05/24/07; and S/N 473, 06/29/07 and 12/19/07

Respiratory Qualification Records, Selected Operations and Maintenance Personnel  
SCBA Breathing Air Quality Analyses, Dated 10/17/07 and 12/28/07

Attachment

SCBA Maintenance History, Air Pressure Regulator Nos. 89200103, 89200092, and 89200117, January 2004 – January 2008

U3 Incore Instrumentation ARM, RD-3-1403, Calibrations, Dated 03/10/06 and 09/10/07

U3 Containment Hi Range ARM, RAD-3-6311A/B, Calibrations, Dated 03/16/06 and 09/14/07

#### Condition Reports (CRs)/Audits

CR 2006-03026, Self-assessment of Respiratory Protection Program, Dated 06/05 – 06/23/06

CR 2006-12647, PCM-2 hand sensor malfunction, dated 04/25/06

CR 2006-18172, Unclear guidance on how powered air-purifying respirators are issued, returned, serviced, and inspected, Dated 06/13/06

CR 2007-09151, Radioactive source used to perform daily checks on whole body counter is not NIST traceable, Dated 03/29/07

CR 2007-13527, Monthly inspection of respiratory protection equipment carried over into 25% grace period, Dated 04/30/07

CR 2007-34147, Whole body counter had to be shutdown due to excessive heat from A/C failure, Dated 10/19/07

CR 2007-39274, Replacement pre-amplifier for ARM RD-1420 does not match installed equipment, Dated 11/28/07

Radiation Protection Functional Area Audit, Dated 03/07 – 04/26/07

### **Section 2PS1: Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems**

#### Procedures, Guidance Documents, and Reports

0-GMI-102.1, Troubleshooting and Repair Guidelines, Dated 02/14/05

0-NCAP-103, Secondary System and Groundwater Radiochemistry, Dated 10/30/07

0-PMI-061.1, Liquid Radwaste Effluent Line Flow Channel F-1064 Calibration, Dated 06/19/00

0-PMI-067.2, Process Radiation Monitoring System Channel R-14 Calibration Procedure, Dated 09/03/07C

0-PMI-067.5, Process Radiation Monitoring System Channel R-18 Calibration Procedure, Dated 10/29/07

0-PMI-067.9, Process Radiation Monitoring System SPING Calibration Procedure, Dated 09/03/07

3-PMI-067.6, Process Radiation Monitoring System Channel R-3-19 Calibration Procedure, Dated 09/03/07

4-PMI-061.3, Condenser Air Ejector Vent, Effluent Flow Rate Indicator, DPI-4-1406, Calibration, Dated 04/05/00C

4-PMI-067.1, Process Radiation Monitoring System Channel R-4-11 and R-4-12 Calibration Procedure, Dated 06/27/07

4-PMI-067.3, Process Radiation Monitoring System Channel R-4-15 Calibration Procedure, Dated 12/26/07

4-PMI-067.6, Process Radiation Monitoring System Channel R-4-19 Calibration Procedure, Dated 09/03/07

4-PMI-067.7, Process Radiation Monitoring System Channel R-4-20 Calibration Procedure, Dated 08/26/04  
 4-PMI-074.4, Steam Generator A Blowdown Effluent Flow Loop F6277A/F6278A Calibration, Dated 10/23/07  
 4-PMI-074.5, Steam Generator A Blowdown Effluent Flow Loop F6277B/F6278B Calibration, Dated 10/23/07  
 4-PMI-074.6, Steam Generator A Blowdown Effluent Flow Loop F6277C/F6278C Calibration, Dated 10/23/07  
 Annual Radioactive Effluent Release Report, 2005  
 Annual Radioactive Effluent Release Report, 2006  
 FPL Nuclear Fleet Implementation of Nuclear Energy Institute Industry Initiative NEI-07-07, Managing Situations Involving Inadvertent Radiological Releases into Groundwater, Dated 11/09/07  
 NAP-204, Condition Reporting, Rev. 14  
 NP-922, Managing Situations Involving Inadvertent Radiological Releases into Groundwater, Dated 06/29/07  
 Offsite Dose Calculation Manual, Rev. 14

#### Records, Data, and Drawings

0-NCCP-003, Calibration of the Gamma Spectroscopy Counting System, Dated 08/15/06, 08/25/06, 09/30/06, and 12/08/06  
 Gas Decay Tank Release Permit Nos. GRP-07-17, GRP-07-18, GRP-07-19, and GRP-07-20; Dated 09/26/07, 09/27/07, 09/29/07, and 09/30/07  
 Maintenance Support Package No. 06-080, Rev. 0, Installation of a Ball Valve to the Plant Vent System, Dated 02/15/07  
 Minor Engineering Package, PCM No. 04-085, Installation of SJAE SPING Sample Filters and Dryers, Dated 02/28/05  
 Numerical Applications, Inc., Letter Regarding Turkey Point Unit 3, Spent Fuel Pool Vent Particulate Monitor, Dated 02/15/08  
 Radiation Survey Log Nos. 07-7370, Unit 3 Liquid Effluent Discharge Piping Area, Dated 11/26/07; 07-7371, Unit 4 Liquid Effluent Discharge Piping Area, Dated 11/26/07; 07-7743, Unit 3 Spent Fuel Pit, Dated 12/17/07; and 08-0188, Unit 4 Spent Fuel Pit, Dated 01/11/08  
 Radioactive Liquid Release Permit No. LRP-70132, LRP-70133, LRP-70134, and LRP-70135; Dated 12/11/07, 12/12/07, 12/13/07, and 12/19/07  
 Radiochemistry Quality Control Samples, 2006 and 2007  
 Report of Primary Calibration, FPL & Company, Process Radiation Monitor, MW-2P Liquid Sampler and MD-5D Gamma Scintillation Detector, Dated 07/12/04  
 Sample Report, 06-07 DAW Smears, Dated 08/22/07  
 Tritium Sampling Summary Results, 2007  
 Turkey Point Units 3 and 4 – Issuance of Amendments Regarding Elimination of Requirements for Post-Accident Sampling Systems, Dated 01/31/01  
 VMS Gamma Spectroscopy Reports, Dated 01/30/08  
 WOs 34019348 01 and 35018266 01, Liquid Radwaste Effluent Line Flow Channel F-1064 Calibration, Dated 04/22/05 and 07/12/06  
 WOs 35000574 01 and 35012935 01, Process Radiation Monitoring System SPING Calibration, Dated 12/01/05 and 08/27/07

WOs 35006798 01 and 36004145 01, Process Radiation Monitoring System Channel R-4-15 Calibration, Dated 09/28/05 and 02/15/07

WOs 35009518 01 and 36024738 01, Process Radiation Monitoring System Channel R-4-19 Calibration, Dated 04/28/06 and 04/25/07

WOs 35010561 01 and 36024725 01, Purge Supply Fan, 4V9 Purge Supply Fan, Dated 02/14/06 and 02/28/07

WOs 35015121 01 and 37004709 01, Condenser Air Ejector Vent, Effluent Flow Rate Indicator, DPI-4-1406, Calibration, Dated 02/13/06 and 12/15/07

WOs 35015219 01 and 37009020 01, Steam Generator A Blowdown Effluent Flow Loop F6277A/F6278A Calibration, Dated 09/05/06 and 10/24/07

WOs 35015220 01 and 37009021 01, Steam Generator B Blowdown Effluent Flow Loop F6277B/F6278B Calibration, Dated 09/01/06 and 10/25/07

WOs 35015221 01 and 37009022 01, Steam Generator C Blowdown Effluent Flow Loop F6277C/F6278C Calibration, Dated 09/01/06 and 10/26/07

WOs 35018324 01 and 37004273 01, Purge Exhaust Fan, 3V20 Purge Exhaust Fan, Dated 04/03/06 and 10/24/07

WOs 35025337 01 and 36024045 01, Process Radiation Monitoring System Channel R-14 Calibration, Dated 11/02/05 and 08/24/07

WOs 35027037 01 and 36024024 01, Perform PM for Fans Listed on Attached Multiple Component List, Radwaste Building, Dated 04/18/06 and 03/22/07

WOs 35027043 01 and 36024074 01, Aux Building Exhaust Fan, V8A Annual PM: Change HEPA Filters, Dated 06/09/06 and 04/18/07

WOs 35027171 01 and 37001391 01, Spent Fuel Pit Exhaust Fan Roughing Filter, 4V21 Semi-Annual PM Exhaust/Supply Filter, Dated 07/07/06 and 06/28/07

WOs 35031391 01 and 36024737 01, Process Radiation Monitoring System Channel R-4-20 Calibration, Dated 01/02/06 and 04/27/07

WOs 36000575 01 and 36027810 01, Process Radiation Monitoring System Channel R-18 Calibration, Dated 03/04/06 and 10/30/07

#### CRs/Audits/Self-Assessments

CR 2006-2197, SFP SPING isokinetic sampling, Dated 01/26/06

CR 2006-12768, R-12 source check not giving the expected response, Dated 04/28/06

CR 2006-18276, SJAE SPING RAD-6417 Channel 5 reads higher than expected, Dated 06/15/06

CR 2006-20742, Evaluate impact of SJAE vent bi-directional flow on ability of associated SPING unit to provide representative sampling of noble gas, Dated 07/14/06

CR 2007-413, The nightly purge of the U3 and U4 containment PRMS monitors R-11 and R-12 may briefly render the equipment out of service, Dated 01/05/07

CR 2007-17798, Unit 3 Spent Fuel Pit SPING (RAD-3-6418) out of service, Dated 06/12/07

CR 2007-19030, Loss of PV SPING, Dated 06/22/07

CR 2007-25413, PTN, R-14 Plant vent radiation monitor detector failed calibration, Dated 08/23/07

CR 2007-36951, R-3-20 detector failed calibration, Dated 11/07/07

CR 2007-40004, Calibration of R-3-19 completed without the proper sources on site, Dated 12/03/07

CR 2008-416, U4 SJAE SPING flow decreases over time, Dated 01/05/08

PTN Nuclear Assurance Quality Report, QRNO 07-0032, ODCM – Radioactive Effluent Releases, Dated 05/23/07

Quality Assurance Audit QAO-PTN-06-005, Chemistry and Effluents Functional Area Audit, Dated 06/20/06

Turkey Point Chemistry Self-Assessment, Liquid and Gas Radioactive Effluents, 2006-924, Dated 11/21/06

### **Section: 2PS3 Radiological Environmental Monitoring Program (REMP) and Radioactive Material Control Program**

#### Procedures and Reports

0-EPIP-20126, Offsite Dose Calculations, Dated 10/24/07

0-HPS-021.3, Identification, Survey, and Release of Material for Unrestricted Use

0-HPS-026.2, Response Protocols for Whole Body Counting and Personnel Contamination Monitoring

0-HPT-016.11, Calibration and Operation of SAM-9/11

2005 Annual Radiological Environmental Operating Report

2006 Annual Radiological Environmental Operating Report

Calibration Procedure 7, Calibration of Gas Meters and Flow Meters, Rev. 7

Offsite Dose Calculation Manual, Rev. 14

Sampling Procedure 1, Air Particulates and Radioiodines, Rev. 9

Sampling Procedure 4, Surface Water, Rev. 5

Sampling Procedure 5, Broadleaf Vegetation, Rev. 2

Sampling Procedure 7, Shoreline Sediment, Silt, Soil, Beach Sand, Rev. 4

SWD-I-103-003, Meteorological Parameter Verification Land Utilization 10 Meter and South Dade 60 Meter Towers, Rev. 6

Technical Memorandum 2, Lower Limit of Detection for Analyses, Rev. 5

#### Records and Data

2006 Annual Meteorological Report

Change Request Notice E17436, Provide details for met data wiring and design, 05/01/07

DOE Mixed-Analyte Performance Evaluation Program results, June 18, 2007

Gas meter calibration data, 2007

Inter-laboratory Cross Check Program Reports, 2006 - 2007

Permanent Change/Modification 04-112, Unit 3 ERDADS Replacement, Rev. 0

Quarterly Meteorological Reports, 1st Quarter 2006 - 3rd Quarter 2007

SAM Calibrations, S/N 259, Dated 05/23/07 and 11/15/07; and S/N 580, Dated 05/01/07 and 11/01/07

WO 35014911, Semiannual met tower test, 06/13/06

WO 36000746, Semiannual met tower test, 12/27/06

WO 36027808, Semiannual met tower test, 07/16/07

WO 37011356, Semiannual met tower test, 12/30/07

#### CRs/Audits/Self-Assessments

2007 REMF Self-Assessment: Intra-Laboratory QC Program

CR 2006-5172, South Dade met tower lower wind speed sensor needs calibration, Dated 02/22/06

CR 2006-6800, Line power loss at 60 meter met tower, Dated 03/07/06

CR 2006-9149, Worker needed coaching to monitor a second time when alarming a portal monitor at the Protected Area exit, Dated 03/23/06



CR 2006-15553, 10 meter tower failed following repair, Dated 05/13/06  
 CR 2006-33298, South Dade meteorological temperature problems continue to degrade, Dated 11/14/06  
 CR 2007-11397, 60 meter meteorological communication failure due to lightning, Dated 04/10/07  
 CR 2007-18531, 2007 QA audit of radiological environmental monitoring program, Dated 06/19/07  
 CR 2007-21095, Torque wrench with radioactive material sticker found outside RCA, Dated 07/13/07  
 CR 2007-22100, Electrical power interruption to air sample stations, Dated 07/10/07  
 CR 2007-22100, REMP - electric power interruption to air sample stations, Dated 07/10/07  
 CR 2007-27283, Self-assessment, REMP intralaboratory QC program, Dated 08/23/07  
 CR 2007-27283, Self assessment of REMP, focused area, intralaboratory QC program, Dated 09/06/07  
 CR 2007-30404, Temperature sensor A reading low at 60 meter met tower, Dated 09/26/07  
 CR 2008-452, Loss of indication for 60 meter tower on DCS, Dated 01/06/08  
 Environmental Radiation Control Semi-Annual Self-Assessment, September 2007  
 Environmental Radiation Control Semi-Annual Self-Assessment, September 2006  
 Environmental Radiation Control Semi-Annual Self-Assessment, March 2007  
 Environmental Radiation Control Semi-Annual Self-Assessment, March 2006  
 JQA-07-3, Environmental Protection/REMP Audit, May 1, 2007 – June 19, 2007  
 REMP 2007 Self-Assessment Quick Hit: REMP TLDs and DOH's COOP  
 SA-2005-16623, 2005 REMP Self-Assessment

#### Simulator scenarios

750005401: Loss of 3P07/ATWS/Main Steam Break Inside Containment  
 750006506: Transmitter failure/Large Break LOCA

#### Job performance measures (JPMs)

01049002302-016c: Realign AMSAC For PT-447 Failure  
 24200017300/SEQ#2C: Respond to Control Room Evacuation As Outside SNPO  
 01028023300/SEQ190B: Rod Control Failure  
 01030008303/SEQ21E: Respond to Component Cooling Water System Malfunction

#### Procedures

0-ADM-040, Facility Staff Qualifications, Rev 07/25/06  
 0-ADM-301, Conduct of Training, Rev 10/22/07  
 0-ADM-309, Shift Manager Training Program, Rev 09/27/07  
 0-ADM-311, Reactor Operator Training Program, Rev 06/28/07  
 0-ADM-312, Tracking of Licensed Operators and License Candidates, Rev 03/12/07  
 0-ADM-314, Senior Reactor Operator Training Program, Rev 06/28/07  
 0-ADM-315, Licensed Operator Continuing Training Program, Rev 8/29/07  
 0-ADM-305, Simulator Configuration Management, Rev 08/23/02C1  
 0-ADM-536, Turkey Point Technical Specifications Basis, Rev 12/12/07  
 SEI-25, Simulator Operability Tests, Rev 04/27/06  
 0-NTP-004, SAT Implementation, Rev 10/22/07  
 0-NTP-005, SAT Evaluation, Rev 09/12/07  
 0-NTP-014, Training Records and Work Management, 10/11/07

Turkey Point Technical Specifications Amended Change Summary, Rev 11/02/07  
Turkey Point Technical Specifications, Rev 06/06/02

Self Assessment Report

2007-1354 and 2007-13514, December 10-13, 2007: NRC 711111.11 Pre-Inspection Readiness & Simulator Certification

Training Schedules

2006 LOCT segments 1 through 5  
2007 LOCT segments 1 through 4

Condition Reports

2008-464: Unit 3 core not installed on simulator  
2008-460: Transient testing is year-to-year comparison only  
2008-462: Normal evolutions testing not performed on the simulator  
2008-1812: Transient test #6 conducted improperly

Simulator Tests

2006 & 2007 transient test TRN-006, Turbine trip which does not cause auto reactor trip  
2006 & 2007 transient test TRN-008, Large break LOCA combined with LOOP  
October 15, 2005, Unit 3 post trip review: 3C MFRV failure and manual reactor trip

Simulator service requests

Open requests: 01/01/06 - 12/04/07  
Closed requests: 01/01/06 - 12/04/07

Records:

Badge Access Transaction Reports for Reactivation of Licenses (4)  
Licensed Operator Medical Records (20)  
Feedback Summaries  
Remedial Training Records (3)  
2006 LOCT Exam Scores  
2007 LOCT Exam Scores

Written Examinations Reviewed:

Inspectors reviewed five written examinations that were administered for the 2008 biennial requalification Examinations, Crews A-E, RO and SRO.  
Two Weekly Examinations

## LIST OF ACRONYMS

ANSI	American National Standards Institute
ARMs	Area Radiation Monitors
CFR	Code of Federal Regulations
CR	Condition Report
HPGe	High Purity Germanium
IP	Inspection Procedure
ODCM	Off Site Dose Calculation Manual
PCM	Personnel Contamination Monitor
PMs	Portal Monitors
QC	quality control
radwaste	radioactive waste
RCA	Radiologically Controlled Area
REMP	Radiological Environmental Monitoring Program
Rev.	Revision
SAM	Small Article Monitor
SCBA	Self-Contained Breathing Apparatus
RG	Regulatory Guide
TLD	thermoluminescent dosimeters
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report