

October 24, 2006

Mr. Peter T. Dietrich  
Site Vice President  
Entergy Nuclear Northeast  
James A. FitzPatrick Nuclear Power Plant  
Post Office Box 110  
Lycoming, NY 13093

SUBJECT: JAMES A. FITZPATRICK NUCLEAR POWER PLANT - NRC INTEGRATED  
INSPECTION REPORT 05000333/2006004

Dear Mr. Dietrich:

On September 30, 2006, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your James A. FitzPatrick Nuclear Power Plant. The enclosed integrated inspection report documents the inspection results, which were discussed on October 10, 2006, with you 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, no findings of significance were identified.

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

Sincerely,

**/RA/**

Eugene W. Cobey, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

Docket No.: 50-333  
License No.: DPR-59

Enclosure: Inspection Report 05000333/2006004  
w/Attachment: Supplemental Information

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**U.S. NUCLEAR REGULATORY COMMISSION**

REGION I

Docket No.: 50-333

License No.: DPR-59

Report No.: 05000333/2006004

Licensee: Entergy Nuclear Northeast (Entergy)

Facility: James A. FitzPatrick Nuclear Power Plant

Location: 268 Lake Road  
Scriba, New York 13093

Dates: July 1, 2006 through September 30, 2006

Inspectors: G. Hunegs, Senior Resident Inspector  
D. Dempsey, Resident Inspector  
C. Long, Reactor Engineer  
J. Noggle, Senior Health Physicist  
J. Richmond, Reactor Inspector  
D. Silk, Senior Emergency Preparedness Inspector  
B. Wittick, Resident Inspector

Approved by: Eugene W. Cobey, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

Enclosure

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## SUMMARY OF FINDINGS

IR 05000333/2006-004; 07/01/2006 - 09/30/2006; James A. FitzPatrick Nuclear Power Plant; Routine Resident Inspector Integrated Inspection Report.

The report covered a 3-month period of inspection by resident inspectors and announced inspections by four regional specialist inspectors. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

No findings of significance were identified.

B. Licensee-Identified Violations

None.

## REPORT DETAILS

### Summary of Plant Status

The James A. FitzPatrick plant began the inspection period at full rated thermal power and operated at or near full power until September 5. On September 5, the plant began a gradual power reduction (coastdown) as a result of fuel depletion at the end of the operating cycle. On September 30, power was at 91 percent.

#### 1. **REACTOR SAFETY**

##### **Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity**

1R04 Equipment Alignment (71111.04 - 4 samples, 71111.04S - 1 sample)

.1 Partial Walkdown (4 samples)

a. Inspection Scope

The inspectors performed four partial system walkdowns to verify the operability of redundant or diverse trains and components during periods of system train unavailability or following periods of maintenance. The inspectors referenced the system procedures, the Updated Final Safety Analysis Report (UFSAR), and system drawings in order to verify that the alignment of the available train was proper to support its required safety functions. The inspectors also reviewed applicable condition reports and work orders to ensure that Entergy had identified and properly addressed equipment deficiencies that could potentially impair the capability of the available train. The documents reviewed are listed in the Attachment. The inspectors performed a partial walkdown of the following four systems:

- “A” and “C” emergency diesel generator (EDG) subsystems on August 7, while subsystems “B” and “D” were out of service for monthly surveillance testing;
- Reactor core isolation cooling (RCIC) system on August 15, while the high pressure coolant injection (HPCI) system was out of service for surveillance testing;
- Electric and east diesel-driven fire pumps on August 31, while west diesel-driven fire pump was out of service for surveillance testing; and
- “A” train of the residual heat removal (RHR) system on September 7, while train “B” was out of service for quarterly surveillance testing.

b. Findings

No findings of significance were identified.

Enclosure

.2 Complete Walkdown (1 sample)a. Inspection Scope

The inspectors performed a complete walkdown of the HPCI system to identify any discrepancies between the existing equipment lineup and the required lineup. The inspectors reviewed operating procedures, surveillance test results, piping and instrumentation drawings, equipment lineup check-off lists, and the UFSAR to determine if the system was aligned to perform its safety functions. The inspectors reviewed a sample of condition reports and work orders written for deficiencies associated with the HPCI system to ensure that they had been evaluated and resolved. The documents reviewed are listed in the Attachment. The walkdown of the HPCI system represents one sample.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q - 10 samples, 71111.05A - 1 sample).1 Quarterly Inspection (10 samples)a. Inspection Scope

The inspectors conducted tours of the 10 areas listed below to assess the material condition and operational status of fire protection features. The inspectors verified that combustibles and ignition sources were controlled in accordance with White's administrative procedures; fire detection and suppression equipment was available for use; that passive fire barriers were maintained; and that compensatory measures for out-of-service, degraded, or inoperable fire protection equipment were implemented in accordance with Entergy's fire plan. The inspectors used procedure ENN-DC-161, "Transient Combustible Program," in performing the inspection. The inspectors evaluated the fire protection program against the requirements of license condition 2.C.3. The documents reviewed are listed in the Attachment. This inspection satisfied 10 inspection samples for fire protection tours. The areas inspected included:

- Fire Area/Zone VII/SP-1, XII/SP-2, IB/FP-1, FP-3;
- Fire Area/Zone VII/CS-1;
- Fire Area/Zone XVII/RB-1E;
- Fire Area/Zone XVIII/RB-1W;
- Fire Area/Zone 1A/AS-1;
- Fire Area/Zone II/CT-2;
- Fire Area/Zone IC/CT-1;
- Fire Area/Zone V/EG-5;
- Fire Area/Zone III/BR-1, BR-2, IV/BR-3, BR-4, XVI/BR-5; and
- Oxygen storage area.

b. Findings

No findings of significance were identified.

.2 Annual Inspection (1 sample)

a. Inspection Scope

The inspectors observed a fire drill on September 16, including the post-drill critique, and reviewed the disposition of issues and deficiencies that were identified. The drill was observed to evaluate the capability of the fire brigade to fight fires. Specific attributes evaluated were: (1) control room response; (2) effectiveness of fire brigade leader communications, command and control, and utilization of pre-planned strategies; (3) proper wearing of turnout gear and self-contained breathing apparatus; (4) proper use and layout of fire hoses; (5) sufficient fire fighting equipment brought to the scene; (6) employment of appropriate fire fighting techniques; (7) search for victims and propagation of the fire into other plant areas; (8) smoke removal operations; and (9) proper storage of fire fighting equipment. The inspectors evaluated the fire brigade capability to meet 10 CFR 50, Appendix R requirements. This inspection represented one sample.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06 - 2 samples)

.1 Internal Flooding (1 sample)

a. Inspection Scope

The inspectors reviewed selected risk-important plant design features and licensee procedures intended to protect the plant and its safety-related equipment from internal flooding events. The inspectors reviewed flood analysis and design documents, including the Individual Plant Examination (IPE) and the UFSAR, engineering calculations, and abnormal operating procedures. In addition, the inspectors reviewed areas and equipment that may be affected by internal flooding due to the emergency service water (ESW) system. This inspection represented one sample.

b. Findings

No findings of significance were identified.

.2 External Flooding (1 sample)

a. Inspection Scope

The inspectors reviewed FitzPatrick's Individual Plant Examination of External Events (IPEEE) and the UFSAR concerning external flooding events. The inspection included a walkdown of accessible areas of the plant to look for potential susceptibilities to external flooding and to verify the assumptions included in the site's external flooding analysis. The inspectors also reviewed relevant abnormal operating and emergency plan procedures. This inspection represented one sample.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program

.1 Resident Inspector Quarterly Review (71111.11Q - 1 sample)

a. Inspection Scope

On August 17, the inspectors observed licensed operator simulator training to assess operator performance during several scenarios to verify that operator performance was adequate and evaluators were identifying and documenting crew performance problems. The inspectors evaluated the performance of risk significant operator actions, including the use of emergency operating procedures. The inspectors assessed the clarity and effectiveness of communications, the implementation of appropriate actions in response to alarms, the performance of timely control board operation and manipulation, and the oversight and direction provided by the shift manager. The inspectors also reviewed simulator fidelity to evaluate the degree of similarity to the actual control room. Licensed operator training was evaluated against the requirements of 10 CFR 55, "Operators' Licenses." This observation of operator simulator training constituted one sample.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q - 2 samples)

a. Inspection Scope

The inspectors reviewed performance-based problems involving selected in-scope structures, systems, or components (SSCs) to assess the effectiveness of the maintenance program.

Reviews focused on:

- Proper Maintenance Rule (MR) scoping in accordance with 10 CFR 50.65;
- Characterization of reliability issues;
- Changing system and component unavailability;
- 10 CFR 50.65 (a)(1) and (a)(2) classifications;
- Identifying and addressing common cause failures;
- Trending of system flow and temperature values;
- Appropriateness of performance criteria for SSCs classified (a)(2); and
- Adequacy of goals and corrective actions for SSCs classified (a)(1).

The inspectors reviewed system health reports, maintenance backlogs, and Maintenance Rule basis documents. The inspectors evaluated the maintenance program against the requirements of 10 CFR 50.65. The documents reviewed are listed in the Attachment. The following two systems were inspected as maintenance rule samples:

- high pressure coolant injection; and
- neutron monitoring system.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 - 5 samples)

a. Inspection Scope

The inspectors reviewed the following five activities to verify that the appropriate risk assessments were performed prior to removing equipment from service for scheduled work. The inspectors verified that risk assessments were performed as required by 10 CFR 50.65(a)(4), and were accurate and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly reassessed and managed. The following activities represent five inspection samples:

- Week of August 6, that included “B” train EDG testing, replacement of a “B” train low pressure coolant injection battery room exhaust fan, and HPCI automatic isolation logic system surveillance;
- Week of August 21, that included maintenance on the east diesel fire pump and emergent work on the “A” instrument air compressor;
- Troubleshooting of “B” reactor protection system (RPS) motor-generator output electrical protection assembly 71EPA-RPS1B2G following a spurious trip on September 8;
- Week of September 18, that included “A” train EDGs and RCIC system testing, planned maintenance on the “B” RHR train, and emergent work on the west diesel-driven fire pump start system; and

- Week of September 25, that included "A" train ESW system maintenance, and "A" RPS system emergent work.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15 - 5 samples)

a. Inspection Scope

The inspectors reviewed operability determinations to assess the acceptability of the evaluations; when needed, the use and control of compensatory measures; and the compliance with Technical Specifications. The inspectors' review included a verification that the operability determinations were made as specified by ENN-OP-104, "Operability Determinations." The technical adequacy of the determinations was reviewed and compared to the Technical Specifications, UFSAR, and associated design basis documents (DBDs). The documents reviewed are listed in the Attachment. The following five evaluations were reviewed and each constituted inspection program samples:

- CR 2006-02243 concerning leakage past train "A" main steam leakage collection system isolation valve 29MOV-200A;
- CR 2006-03268 concerning an unexpected control room alarm involving a HPCI pump room high temperature isolation trip;
- CR 2006-03317 concerning loss of the ability to operate safety/relief valve 02RV-71J from the remote shutdown panel;
- CR 2006-03340 concerning secondary containment leak tightness with degraded boundary door seals; and
- CR 2006-03429 concerning the RCIC system steam trap not cycling.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing (71111.19 - 5 samples)

a. Inspection Scope

The inspectors reviewed five post maintenance test procedures and associated testing activities for selected risk significant mitigating systems to assess whether the effect of maintenance on plant systems was adequately addressed by control room and engineering personnel. The inspectors verified that test acceptance criteria were clear, demonstrated operational readiness and were consistent with design basis documentation; that test instrumentation had current calibrations and the range and accuracy for the application; and that tests were performed, as written, with applicable prerequisites satisfied. Upon completion, the inspectors verified that equipment was

returned to the proper alignment necessary to perform its safety function. Post maintenance testing was evaluated against the requirements of 10 CFR 50, Appendix B Criterion XI, "Test Control." The documents reviewed are listed in the Attachment. The following post maintenance test activities were reviewed and represent five inspection program samples.

- Work Request (WR) JAF-06-14487, which involved installation of a manual coupler bushing on the operator of torus vacuum breaker isolation valve 27AOV-101B. The retest consisted of remote and local-manual operation of the valve in accordance with the WR instructions.
- WR JAF-04-24206, which involved disassembly and inspection of SW check valve 46SWS-60B. The retest consisted of a reverse flow closure and leakage test using ST-8Q, "Testing of the ESW System (IST)."
- WR JAF-06-25216, which involved troubleshooting and repair of the west diesel-driven fire pump start system. The retest consisted of an operational check using ST-76C, "West Diesel Fire Pump 76P-1 Operational Check."
- WRs JAF-06-18183 and JAF-06-21004, which involved preventive maintenance on the "A" reactor protection system motor-generator set and replacement of the flywheel bearing housings. The retest consisted of operational checks using MP-058.04, "Reactor Protection System Motor Generator Set Maintenance," and vibration checks.
- WR JAF-04-26890, which involved preventive maintenance on west electric bay unit cooler SW check valve 46SWS-67A. The retest consisted of an operation leakage check and forward and reverse flow exercise checks using ST-8Q, "Testing of the Emergency Service Water System (IST)."

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 - 6 samples)

a. Inspection Scope

The inspectors witnessed performance of surveillance tests and/or reviewed test data of selected risk-significant SSCs to assess whether the SSCs satisfied Technical Specifications, UFSAR, Technical Requirements Manual, and Entergy procedure requirements. The inspectors verified that test acceptance criteria were clear, demonstrated operational readiness and were consistent with design basis documentation; that test instrumentation had current calibrations and the range and accuracy for the application; and that tests were performed, as written, with applicable prerequisites satisfied. Upon surveillance test completion, the inspectors verified that equipment was returned to the status specified to perform its safety function. The inspectors evaluated the surveillance tests against the requirements in Technical Specifications. The documents reviewed are listed in the Attachment.

The following surveillance tests were reviewed and represented six inspection program samples:

- ST-24J, "RCIC Flow Rate and Inservice Test (IST);"
- ISP-22, "HPCI Turbine Exhaust Diaphragm High Pressure Instrument Functional Test/Calibration;"
- ST-9BB, "EDG "B" and "D" Full Load Test and ESW Pump Operability Test;"
- ST-2XA, "RHR Service Water Loop A Quarterly Operability Test (IST);"
- ST-18BA, "CREVAS A Operability Test;" and
- ST-76J23, "West Diesel Fire Pump 76P-1 Performance Test."

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23 - 2 samples)

a. Inspection Scope

The inspectors reviewed the temporary modifications (TMs) listed below. The inspectors assessed the adequacy of the 10 CFR 50.59 evaluations for these temporary modifications. The inspectors also verified that the installation was consistent with the modification documentation; that the drawings and procedures were updated as applicable; and that the post-installation testing was adequate. The inspectors reviewed the results of ST-99G, "Temporary Modification Monthly Audit." The documents reviewed are listed in the Attachment. This review represented two inspection program samples:

- TA-JAF-01-028, "Disable Auto Closure of 33MOV-1-01A/102A on Hi-Hi Level;" and
- TM-1-2006-0051, "Install Equipment to Monitor "B" RPS MG Set EPA."

b. Findings

No findings of significance were identified.

**Cornerstone: Emergency Preparedness [EP]**

1EP6 Drill Evaluation (71114.06 - 1 sample)

a. Inspection Scope

The inspectors observed emergency response organization activities during the partial participation drill which was conducted on September 14. The inspectors verified that emergency classification declarations, notifications, and protective action recommendations were properly completed. The inspectors evaluated the drill against

the requirements in 10 CFR 50, Appendix E. This observation constituted one inspection program sample.

b. Findings

No findings of significance were identified.

**2. RADIATION SAFETY**

**Cornerstone: Occupational Radiation Safety**

2OS1 Access Control to Radiologically Significant Areas (71121.01 - 14 samples)

a. Inspection Scope

During September 18 through 22, the inspectors conducted the following activities to verify that Entergy was properly implementing physical, engineering, and administrative controls for access to high radiation areas, and other radiologically controlled areas, and that workers were adhering to these controls when working in these areas. Implementation of the access control program was reviewed against the criteria contained in 10 CFR 20, site Technical Specifications, and Entergy's procedures.

- There were no occupational exposure cornerstone performance indicator incidents during the current assessment period.
- The inspectors walked down exposure significant work areas of the plant and reviewed controls and surveys to determine if surveys, postings, and barricades were acceptable and in accordance with regulatory requirements.
- The inspectors walked down exposure significant work areas of the plant and conducted independent surveys to determine whether prescribed radiation work permit and procedural controls were in place and whether surveys and postings were complete and accurate.
- There were no internal dose assessments greater than 50 mrem to date in 2006.
- Entergy's physical and programmatic controls for highly activated materials stored underwater in the spent fuel pool were reviewed and evaluated through observation, access control procedure review, and response to audit findings in this area.
- A review of radiation protection program self-assessments and audits was conducted, which included: FitzPatrick Radiation Protection As Low As Is Reasonable Achievable (ALARA) Corporate Assessment, dated June 8, 2006; FitzPatrick Supervisor Effectiveness Corporate Assessment, dated April 27, 2006;

and FitzPatrick Self-Assessment in High Radiation Area and Locked High Radiation Area Controls, dated July 20, 2006.

- Twenty-five condition reports associated with the radiation protection access control and ALARA areas (see Section 4OA2), between January 2006 and September 2006, were reviewed and discussed with Entergy staff to determine if the follow-up activities were being conducted in an effective and timely manner commensurate with their safety significance.
- Based on the condition reports reviewed, repetitive deficiencies were screened to determine if Entergy's self-assessment activities were identifying and addressing these deficiencies.
- There were no Occupational Exposure Performance Indicator incidents reported during the current assessment period.
- There were no changes to the high radiation area and very high radiation area procedures since the last inspection in this area.
- There are no posted very high radiation areas at the FitzPatrick plant.
- All accessible locked high radiation area entrances were verified to be locked through challenging the locks or doors.
- Several radiological condition reports (see Section 4OA2) were reviewed to evaluate if the incidents were caused by radiation worker errors and determine if there were any trends or patterns and if Entergy's corrective actions were adequately addressing these trends.
- Several radiological condition reports (see Section 4OA2) were reviewed to evaluate if the incidents were caused by radiation protection technician errors and determine if there were any trends or patterns and if Entergy's corrective actions were adequately addressing these trends.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls (71121.02 - 6 samples)

a. Inspection Scope

During September 18 through 22, the inspectors conducted the following activities to verify that Entergy was properly maintaining individual and collective radiation exposures ALARA. Implementation of the ALARA program was reviewed against the criteria contained in 10 CFR 20.1101(b) and Entergy's procedures.

- The FitzPatrick collective exposure history was reviewed to determine the plant's current 3-year rolling average exposure for calendar year 2003 through 2005. The three year average expressed was in the first quartile for boiling water reactors.
- Site specific source term trends were reviewed, indicating an increasing trend reflecting median boiling water reactor radiation levels and a corresponding increasing trend in collective exposures.
- The following procedures were reviewed that were associated with maintaining occupational exposures ALARA: RP-ALARA-01.01, "ALARA Review," Revision 5; RP-OPS-02.03, "High Radiation Area Access and Key Control," Revision 3; and EN-RP-101, "Access Control for Radiological Controlled Areas," Revision 1.
- ALARA work planning and exposure estimates were inspected for 2006 and the fall 2006 refueling outage. The assumptions and basis for the exposure estimates were reviewed in accordance with procedure RP-ALARA-01.01. The five highest exposure outage tasks were identified and the applicable ALARA reviews were inspected for the following.
  - In-service inspection: 35.917 person-rem estimate;
  - Replacement of 18 control rod drives: 13.96 person-rem estimate;
  - Reactor disassembly/reassembly: 12.983 person-rem estimate;
  - Defuel/Refuel and in-vessel inspection: 8.518 person-rem estimate; and
  - Radiation Protection (RP) routine outage coverage: 7.508 person-rem estimate.
- Source-term data was reviewed to determine historical trends from 1999 through October 2004. In addition, interviews were conducted with the ALARA supervisor and the Chemistry Superintendent relative to reactor water chemistry and source-term controls to reduce occupational exposure.
- A review of Entergy's radiation protection program self-assessments and audits was conducted, which included: FitzPatrick Radiation Protection ALARA Corporate Assessment, dated June 8, 2006; FitzPatrick Supervisor Effectiveness Corporate Assessment, dated April 27, 2006; and FitzPatrick Self-Assessment in High Radiation Area and Locked High Radiation Area Controls, dated July 20, 2006.

b. Findings

No findings of significance were identified.

#### 4. OTHER ACTIVITIES

##### 4OA1 Performance Indicator (PI) Verification

###### a. Inspection Scope (71151 - 8 samples)

The inspectors reviewed performance indicator (PI) data for the cornerstones listed below and used NEI 99-02, "Regulatory Assessment Performance Indicator Guidance," Revision 2, to verify individual PI accuracy and completeness.

###### Cornerstone: Initiating Events

- Unplanned scrams per 7000 critical hours
- Scrams with loss of normal heat removal
- Unplanned transients per 7000 critical hours

The inspectors reviewed Entergy's event reports, operator logs, and PI data sheets to determine whether Entergy adequately identified the number of scrams and unplanned power changes greater than 20 percent that occurred between July 2003 and June 2006. This number was compared to the number reported for the PI during the current quarter. The inspectors also verified the accuracy of the number of critical hours reported.

###### Cornerstone: Barrier Integrity

- Reactor coolant system leak rate
- Reactor coolant system specific activity

The inspectors reviewed operator logs, plant computer data, chemistry records, and procedure ST-40D, "Daily Surveillance and Channel Check," to verify the accuracy of Entergy's reported maximum reactor coolant system identified leakage and specific activity between January 2004 and June 2006

###### Cornerstone: Emergency Preparedness

- Drill and exercise performance
- Emergency response organization drill participation
- Alert and notification system reliability

The inspectors reviewed data for the emergency planning PIs. The inspectors reviewed supporting documentation from drills and exercises in the fourth quarter of 2005 and the first two quarters of 2006 to verify the accuracy of the reported data. Since the alert and notification system (ANS) is shared with Nine Mile Point (NMP) who tests the system, the inspectors verified that Entergy was reviewing the ANS data reported by NMP. The inspector's verification of the accuracy of NMP's ANS data is documented in Inspection Report 05000220&410/2006004. The review of these PIs was conducted in accordance with NRC Inspection Procedure 71151. The acceptance criteria used for the review were 10 CFR 50.9 and NEI 99-02, "Regulatory Assessment Performance Indicator Guidelines," Revision 2.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

.1 Annual PI&R Sample Review (71152, 1 sample)

a. Inspection Scope

Based on a plant specific risk assessment, resident inspector input, and input from prior NRC team inspections, the inspectors selected condition report (CR) 2005-02467 as a problem, identification and resolution sample for a detailed follow-up review. This CR documented Entergy's evaluation and corrective actions for a previous NRC identified green finding (NRC Inspection Report 05000333/2005004) for inadequate design control of the west cable tunnel unit cooler. Specifically, Entergy had not adequately evaluated the ability of the cooler to remove its design basis heat load at the maximum allowable ultimate heat sink temperature of 85°F and with 22 tubes plugged.

The inspectors assessed Entergy's problem identification threshold, cause analyses, extent of condition reviews, operability determinations, and the prioritization and timeliness of corrective actions to determine whether Entergy was appropriately identifying, characterizing, and correcting problems associated with this issue and whether the planned or completed corrective actions were appropriate. The documents reviewed are listed in the Attachment.

b. Assessment and Observations

A recent NRC team inspection identified a weak extent of condition evaluation for CR 2005-02467. Entergy subsequently initiated CR 2006-02780 and performed additional calculations and operability evaluations for the electric bay and crescent area (emergency core cooling (ECCS) room) unit coolers. The inspectors concluded that Entergy's initial extent of condition evaluation for the cable tunnel cooler had been narrowly focused and had lacked an adequate engineering bases for continued operability of other safety-related unit coolers with similar design deficiencies. This performance deficiency was determined to be of minor safety significance because a subsequent engineering analysis demonstrated that the heat removal margin was not significantly reduced. No findings of significance were identified.

.2 Review of Items Entered into the Corrective Action Program (CAP)

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of all items entered into Entergy's corrective action program. The review was accomplished by accessing Entergy's computerized database for CRs and attending CR screening meetings.

In accordance with the baseline inspection modules the inspectors selected corrective action program items across the initiating events, mitigating systems, barrier integrity, and public radiation safety cornerstones for additional follow-up and review. The inspectors assessed Entergy's threshold for problem identification, the adequacy of the cause analyses, extent of condition review, and operability determinations, and the timeliness of the specified corrective actions. The CRs reviewed are noted in the Attachment.

In addition, the inspectors reviewed 25 corrective action condition reports directly associated with the radiation protection program that were initiated between January and September 2006. The inspectors verified that problems identified by these condition reports were properly characterized in Entergy's event reporting system, and that applicable causes and corrective actions were identified, commensurate with the safety significance of the radiological occurrences.

b. Assessment and Observations

Equipment, human performance and program issues were identified at an appropriate threshold and were entered into the licensee's corrective action program. No findings of significance were identified.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On October 10, 2006, the inspectors presented the inspection results to Mr. Peter T. Dietrich and other members of his staff. The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### **Entergy Personnel**

N. Avrakotos, Manager, Emergency Preparedness  
S. Bono, Director Engineering  
J. Costedio, Manager, Regulatory Compliance  
P. Dietrich, Site Vice President  
M. Durr, Manager, System Engineering  
M. Jacobs, Manager, Training  
D. Johnson, Manager, Operations  
J. LaPlante, Manager, Security  
K. Mulligan, General Manager, Plant Operations  
J. Pechacek, Manager, Programs and Components Engineering  
W. Rheume, Manager, CA&A  
J. Solowski, Radiation Protection  
D. Wallace, Director, Nuclear Safety Assurance

### **LIST OF DOCUMENTS REVIEWED**

#### **Section 1R04: Equipment Alignment**

OP-13, "Residual Heat Removal System," Revision 92  
FM-20A, "Flow Diagram - Residual Heat Removal System 10," Revision 70  
FM-20B, "Flow Diagram - Residual Heat Removal System 10," Revision 62  
FM-25A, Revision 68: "Flow Diagram High Pressure Coolant Injection System"  
FM-22A, "Flow Diagram-Reactor Core Isolation Cooling System 13," Revision 53  
OP-15, Revision 51: "High Pressure Coolant Injection"  
DBD-023, Revision 10: "Design Basis Document fo the High Pressure Coolant Injection System"

#### **Section 1R05: Fire Protection**

##### **Pre-Fire Plans**

PFP-PWR33 - Fire Area/Zone VII/SP-1, XIII/SP-2, IB/FP-1, FP-3  
PFP-PWR11 - Fire Area/Zone VII/CS-1  
PFP-PWR14 - Fire Area/Zone XVII/RB-1E  
PFP-PWR15 - Fire Area/Zone XVIII/RB-1W  
PFP-PWR09 - Fire Area/Zone 1A/AS-1  
PFP-PWR01 - Fire Area/Zone II/CT-2  
PFP-PWR01 - Fire Area/Zone IC/CT-1  
PFP-PWR31 - Fire Area/Zone V/EG-5  
PFP-PWR04 - Fire Area/Zone III/BR-1, BR-2, IV/BR-3, BR-4, XVI/BR-5  
PFP-OUT36 - Oxygen Storage Facility

**Section 1R11: Licensed Operator Requal Program**

70690-3, Tech Spec Instrument Failure/ Loss of Feedwater Heating (AOP-62)/ Stuck Rod (AOP-24)/ Fuel Damage Leading to EOP-6/ Eventual Emergency Depressurization

**Section 1R12: Maintenance Effectiveness**

JENG-APL-03-010, "HPCI System Maintenance rule (a)(1) Action Plan"  
System 023 Health Report - HPCI System - 1<sup>st</sup> quarter 2006  
OP-15, "High Pressure Coolant Injection"  
JAF-RPT-HPCI-02289, "Maintenance Rule Basis Document for System -23 High Pressure Coolant Injection"  
WR JAF-04-17968  
WR JAF-05-26659  
GEK-27690F, "Ion Chamber Power Supply, Section II, 'Troubleshooting'"  
Maintenance rule action plan for local power range monitor ion chamber power supplies, Revision 0  
Maintenance rule action plan for local power range monitor ion chamber power supplies, Revision 1  
JAF-RPT-NMS-02278, "Maintenance Rule Basis Document for System 007 Neutron Monitoring System," Revision 5  
007 Neutron monitoring system status and trend report, 2<sup>nd</sup> quarter 2005 to 1<sup>st</sup> quarter 2006  
007 Neutron monitoring system unavailability a(2) tracking, 1<sup>st</sup> quarter 2006  
WR-JF-980435800  
023 HPCI System Report, 1<sup>st</sup> Quarter 2006  
JENG-APL-03-101, Revision 1: "Maintenance Rule (a)(1) Action Plan"

**Section 1R15: Operability Evaluations**

OP-1, "Main Steam System," Revision 52  
AOP-39, "Loss of Coolant," Revision 16  
ST-1M, "MSLCS Valve Exercise Test (IST)," Revision 15  
TST-133, "MSLCS Valve Exercise With 29MOV-200A Seat Leakage (IST)," Revision 0  
ST-1N, "MSLCS Functional Test," Revision 14  
ARP 09-5-2-49, "MSLCS A Press High," Revision 2  
ESK-6MBK, "Elementary Diagram - 600V CKTS MOV-202A, 202B - MSLCS/SGTS Backup Isolation Valves," Revision 9  
ESK-6MBJ, "Elementary Diagram - 600V CKTS MOV-201A, 201B - MSLCS/SGTS Isolation Valves," Revision 7  
FM-29A, "Flow Diagram - Main Steam System 29," Revision 53  
MST-025.05, "SRV Remote Actuation Maintenance Testing," Revision 2  
ST-39D, "Secondary Containment Leak Test," Revision 21

**Section 1R19: Post-Maintenance Testing**

FB-10H, "Flow Diagram - Reactor Building Service Water Cooling System 66," Revision 40  
JAF-RPT-MULTI-03365, "James A. FitzPatrick Nuclear Power Plant Inservice Test Program for Pumps and Valves Third Interval Plan," Revision 9  
JAF-RPT-MULTI-04406, "Inservice Test Program Basis Document," Revision 0  
JAF-DBD-046, "Design Basis Document for Normal Service Water, Emergency Service Water, Residual Heat Removal Service Water," Revision 9

**Section 1R22: Surveillance Testing**

OP-55B, "Control Room Ventilation and Cooling," Revision 32  
JPN-95-010, "Response to NUREG-0737, Item III.D.3.4 - Control Room Habitability," dated March 2, 1995  
JAF-CALC-FPS-01170, "Fire Pump Performance Evaluation Methodology," Revision 0  
FB-48A, "Flow Diagram - Fire Protection Water Piping System 76," Revision 33  
ESK-3G, "Control Switch Contact Diagram  
ST-4E, "HPCI and SGT Logic System Functional and Simulated Automatic Actuation Test," Revision 50  
WR JAF-04-28272  
FM-25A, "Flow Diagram - High Pressure Coolant Injection System 23," Revision 68  
Data sheet for master relay 02-3MTU-272A, reactor lo level ECCS master trip unit

**Section 1R23: Temporary Plant Modifications**

WR JAF-06-25109  
AOP-60, "Loss of RPS Bus B Power," Revision 4  
1.67-74, 'Elementary Diagram (MOD) - Reactor Protection System - MG Set Control," Revision 7  
ISP-94, "Reactor Protection System Electrical Protection Assembly Functional Test/Calibration," Revision 28  
FE-7L, "Wiring Diagram - Annunciator Interposing Relay Cabinet 1R-2, Sheet 2," Revision 10  
FE-4H, "Wiring Diagram - Instrument Transmitter Rack 8-02, Sheet 8, System 33 & 34," Revision 8  
ESK-10GM, "Elementary Diagram - Interposing Relay System, Sheet 12," Revision 3  
ESK-11AAE, "Elementary Diagram - 125 VDC SOV CKTS Extraction Steam Non Return VV's," Revision 14

**Section 4OA1: Performance Indicator Verification**

EN-EP-201, "Emergency Planning Performance Indicators," Revision 2

**Section 4OA2: Identification and Resolution of Problems**

**Calculations and Engineering Analyses**

01891.01-B-004-2, "East & West Crescent Area Heat Load, due to Uprate," Revision 2  
02268-5017-6, "Required Heat Duty Values of Crescent Area Unit Coolers for Long Term Peak Temperatures of 110° F & 120° F with 1 Hour Operator Actions," Revision 1  
14620.9008-US(N)-001, " Crescent Area Heat Loads under Abnormal Conditions," Revision 2  
14620.9008-US(N)-004-0, "Determination of Post-LOCA Temperature Envelope in Crescent Area with 75% Capacity Unit Coolers and 82 ° F Lake Temperature," Revision 0  
14620.9020-US(N)-003-0, "Average and Maximum Post-LOCA Temperature in East & West Electric Bays with Unit Coolers Operating with 82 ° F Lake Water," Revision 2  
14620.9033-US(N)-003-2, "Total Available Tube Plugging margin in Electric Bay Coolers and Crescent Area Coolers," Revision 2  
14620-E-9020-1, "Heat Release from Electrical Equip in Electrical Bays during LOCA Condition," Revision 2  
14620-E-9020-2, "Heat Release from Electrical Equip in Electrical Bays during Normal Operation," Revision 1  
JAF-Calc-SWS-00569, "Cooler Performance Methodology for Crescent, Electric, and Cable Tunnel Coolers," Revision 4

JAF-Calc-SWS-02174, "Increase in Crescent Area Heat Load due to Elevated Lake Temperatures above 82° F," Revision 1  
JAF-Calc-TBC-02464, "Heat Removal Capability of Electric Bay Coolers with Two Fans Operating," Revision 1

Procedures

ST-8Q, "Testing of the Emergency Service Water System (IST)," Revision 35

Drawings

FM-46A, "Service Water Flow Diagram," Revision 81  
FM-46B, "Emergency Service Water Flow Diagram," Revision 49

Work Orders and Completed Surveillance Tests

2005-22322  
2005-22324  
2006-23755

Miscellaneous

Technical Requirements Manual, Section 3.7.C & Bases, "Crescent Area Ventilation System," Revision 15

Condition Reports

2001-00009	2005-00088	2006-03554
2001-04203	2005-00442	2006-03232
2005-01679	2005-00632	2006-02776
2005-02772	2005-00634	2006-03163
2005-02801	2006-03301	2006-02221
2005-00076	2006-03270	2005-00677
2005-03355	2006-03243	2005-00678
2005-03861	2006-03251	2005-00699
2005-04106	2006-03252	2005-00750
2005-02467	2006-03317	2006-00021
2006-01459	2006-03455	2006-00432
2006-01592	2006-03261	2006-01225
2006-02780	2006-03340	2006-01493
2006-00038	2006-03416	2006-01826
2006-01606	2006-03283	2006-01829
2006-03307	2006-03285	2006-02368
2006-02427	2006-03399	2006-02851
2006-02880	2006-03435	2006-03325
2006-02858	2006-03451	2006- 00033
2006-03180	2006-03454	2006-00458
2006-01828	2006-03286	2006-01303

2006-01643  
2006-01827  
2006-02108  
2006-02369  
2006-02867  
2006-00072  
2006-00768  
2006-01306  
2006-01825  
2005-00755  
2005-03896  
2005-03893  
2005-04417  
2005-00179

**LIST OF ACRONYMS**

ADAMS	agency-wide document and management system
ALARA	as low as is reasonable achievable
ANS	alert and notification system
CAP	corrective action program
CFR	Code of Federal Regulations
CR	condition report
DBD	design basis document
ECCS	emergency core cooling system
EDG	emergency diesel generator
EP	emergency preparedness
ESW	emergency service water
HPCI	high pressure coolant injection
IPE	individual plant examination
IPEEE	individual plant examination of external events
IST	inservice testing
MR	maintenance rule
MREM	millirem
NMP	Nine Mile Point
NRC	Nuclear Regulatory Commission
PI	performance indicator
RCIC	reactor core isolation cooling
RHR	residual heat removal
RP	radiation protection
RPS	reactor protector system
SSC	structure, system, and component
SW	service water
TM	temporary modification
UFSAR	Updated Final Safety Evaluation Report
WR	work request