



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

May 7, 2010

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

SUBJECT: JAMES A. FITZPATRICK NUCLEAR POWER PLANT - NRC INTEGRATED  
INSPECTION REPORT 05000333/2010002

Dear Mr. Dietrich:

On March 31, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your James A. FitzPatrick Nuclear Power Plant (FitzPatrick). The enclosed inspection report documents the inspection results which were discussed on April 7, 2010, 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, this report documents one NRC-identified finding of very low safety significance (Green). This finding was determined to be a violation of NRC requirements that was evaluated under traditional enforcement and categorized at Severity Level IV. However, because of the very low safety significance and because the issue was entered into your corrective action program, the NRC is treating this finding as a non-cited violation (NCV) in accordance with Section VI.A.1 of the NRC Enforcement Policy. If you contest any NCV in this report, you should provide a response within 30 days of the date of the inspection report, with the basis for your denial, to the U. S. Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, D.C. 20555-0001; with a copy to the Regional Administrator, Region I; Office of Enforcement; U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Senior Resident Inspector at FitzPatrick. In addition, if you disagree with the characterization of any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region I, and the NRC Resident Inspectors at FitzPatrick. The information you provide will be considered in accordance with Inspection Manual Chapter 0305.

P. Dietrich.

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In accordance with 10 CFR Part 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 Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

A handwritten signature in cursive script, appearing to read "Mel Gray", with a long horizontal flourish extending to the right.

Mel Gray, Chief  
Projects Branch 2  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000333/2010002  
w/Attachment: Supplemental Information

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P. Dietrich

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Sincerely,

/RA/

Mel Gray, Chief  
Projects Branch 2  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000333/2010002  
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.: 05000333/2010002

Licensee: Entergy Nuclear Northeast (Entergy)

Facility: James A. FitzPatrick Nuclear Power Plant

Location: Scriba, New York

Dates: January 1 through March 31, 2010

Inspectors: G. Hunegs, Senior Resident Inspector  
S. Ibarrola, Resident Inspector  
S. Rutenkroger, PhD, Resident Inspector  
B. Bickett, Senior Project Engineer  
C. Bickett, Senior Project Engineer

Approved by: Mel Gray, Chief  
Projects Branch 2  
Division of Reactor Projects

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## SUMMARY OF FINDINGS

IR 05000333/2010002; 01/01/2010 - 03/31/2010; James A. FitzPatrick Nuclear Power Plant; Event Follow-up.

The report covered a three-month period of inspection by resident inspectors and announced inspections by region-based inspectors. One Severity Level IV finding, which was a non-cited violation (NCV), was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). The cross-cutting aspect for the finding was determined using IMC 0305, "Operating Reactor Assessment Program." Findings for which the SDP does not apply may be "Green" or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

**Cornerstone: Mitigating Systems**

- **Severity Level IV:** The inspectors identified a Severity Level IV, non-cited violation (NCV) because Entergy did not provide a written report to the NRC within 60 days after discovery of the event as required by 10 CFR 50.73, "Licensee Event Report (LER) System," for a condition which was prohibited by Technical Specification (TS) 3.5.1, "Emergency Core Cooling Systems - Operating."

In January, 2009, the high pressure coolant injection (HPCI) system did not pass post-maintenance testing, as a result of the failure of the HPCI system turbine stop valve 23HOV-1, to stroke open within the required time. Entergy personnel documented the condition in CR-JAF-2009-0350. The inservice test (IST) opening time for 23HOV-1 had previously exceeded the correct acceptance criteria which should have resulted in declaring the HPCI system inoperable. The inspectors determined that this condition met the criteria for reporting under 10 CFR 50.73 (a)(2)(i)(B) in that the condition was not allowed by the plant's TSs. Entergy's corrective actions included initiating CR-JAF-2009-03964, submitting LER 05000333/2009008-00 on January 11, 2010, and providing additional guidance for their staff on licensee event reporting requirements.

This violation involved a failure to make a required report to the NRC and is considered to impact the regulatory process. Such violations are dispositioned using the traditional enforcement process instead of the Significance Determination Process. Using the Enforcement Policy Supplement I, "Reactor Operations," example D4 which states, "A failure to make a required LER," the NRC determined that this violation could potentially impact the regulatory process and is more than minor and categorized as a Severity Level IV violation.

The inspectors determined that this finding had a cross-cutting aspect in the area of problem identification and resolution within the corrective action program component because Entergy personnel did not properly evaluate the condition reporting criteria. (P.1(c)) (Section 40A3)

Enclosure

## REPORT DETAILS

Summary of Plant Status

The James A. FitzPatrick Nuclear Power Plant (FitzPatrick) began the inspection period operating at 100 percent reactor power. On February 7, 2010, operators reduced reactor power to 65 percent to allow removal of a circulating water pump to reduce the impact of frazil ice formation in the intake. Following intake water level returning to normal, operators restored reactor power to 100 percent later the same day. On February 18, 2010, operators reduced reactor power to 63 percent to conduct power suppression testing to locate a possible fuel clad defect. On February 19, 2010, control rod 14 -11 was inserted to suppress neutron flux due to indications of a fuel clad defect in that location. On February 23, 2010, operators restored reactor power to 100 percent. On March 10, 2010, operators reduced reactor power to 83 percent to perform scheduled offsite power relay testing. Operators restored power to 100 percent later the same day. The plant continued to operate at or near full power for the remainder of the inspection period.

**1. REACTOR SAFETY****Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity****1R01 Adverse Weather Protection (71111.01 – 2 samples)****a. Inspection Scope**

During the week beginning January 12, 2010, the site experienced severe cold weather conditions. The inspectors reviewed Entergy's actions regarding the potential for frazil ice intrusion into the intake structure. The inspectors reviewed the procedural limits and actions associated with cold weather; and walked down accessible areas of the screenwell and cable tunnels to assess the effectiveness of the heating and ventilation systems. The inspectors verified that operators implemented actions and monitoring specified by the circulating water system operating procedures (OPs). The inspectors conducted discussions with operations and engineering personnel to ensure awareness of temperature restrictions and required actions.

On February 7, 2010, the site experienced frazil ice conditions in the intake. The frazil ice conditions resulted in intake water level declining approximately two feet and necessitated entry into abnormal operating procedure (AOP) 64, "Loss of Intake Water Level," Revision 7, and AOP- 31, "Loss of Condenser Vacuum," Revision 17. Operators lowered reactor power to 65 percent to facilitate the removal from service of one circulating water pump. The inspectors reviewed operator actions related to monitoring intake level and executing AOPs and evaluated recovery actions. Additionally, the inspectors walked down the traveling water screens and the service water (SW) system. The documents reviewed are listed in the Attachment.

These activities constituted two imminent weather condition inspection samples.

**b. Findings**

No findings of significance were identified.

Enclosure

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdown (71111.04Q – 3 samples)

a. Inspection Scope

The inspectors performed three 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 system procedures, the updated final safety analysis report (UFSAR), and system drawings in order to verify the alignment of the available train was proper to support its required safety functions. The inspectors also reviewed applicable condition reports (CRs) and work orders (WOs) to ensure that Entergy personnel identified and properly addressed equipment discrepancies that could impair the capability of the available equipment train, as required by 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action." The documents reviewed are listed in the Attachment. The inspectors performed a partial walkdown of the following systems:

- Reactor core isolation cooling (RCIC) system when the HPCI was out of service to repair the HPCI turbine steam inlet isolation valve, 23MOV-14;
- 'A' and 'C' emergency diesel generators (EDGs) when emergent work was conducted on the 'D' EDG; and
- 'A' residual heat removal service water (RHRSW) system when the 'B' RHRSW system was out of service to replace the 'D' RHRSW pump.

These activities constituted three partial system walkdown inspection samples.

b. Findings

No findings of significance were identified.

.2 Complete System Walkdown (71111.04S – 1 sample)

a. Inspection Scope

The inspectors performed a complete system alignment inspection of the emergency service water (ESW) system to identify discrepancies between the existing equipment lineup and the required lineup. During the inspection, system drawings and operating procedures were used to verify proper equipment alignment and operational status. The inspectors reviewed the open maintenance WOs associated with the system for deficiencies that could affect the ability of the system to perform its function. Documentation associated with unresolved design issues such as temporary modifications, operator workarounds and items tracked by plant engineering were also reviewed by the inspectors to assess their collective impact on system operation. In addition, the inspectors reviewed the CR database to verify that equipment problems were being identified and appropriately resolved. The documents reviewed are listed in the Attachment.

These activities constituted one complete system walkdown inspection sample.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Review (71111.05Q – 5 samples)

a. Inspection Scope

The inspectors conducted inspections of fire areas to assess the material condition and operational status of fire protection features. The inspectors verified, consistent with applicable administrative procedures, that combustibles and ignition sources were adequately controlled; passive fire barriers, manual fire-fighting equipment, and suppression and detection equipment were appropriately maintained; and compensatory measures for out-of-service, degraded, or inoperable fire protection equipment were implemented in accordance with Entergy's fire protection program. The inspectors evaluated the fire protection program for conformance with the requirements of License Condition 2.C.3. The documents reviewed are listed in the Attachment.

- Fire Area/Zone VII/RR-1;
- Fire Area/Zone ID/CT-4;
- Fire Area/Zone XI/CT-3;
- Fire Area/Zone II/CT-2; and
- Fire Area/Zone IC/CT-1.

These activities constituted five quarterly fire protection inspection samples.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06 – 1 sample)

a. Inspection Scope

The inspectors conducted tours of the north and south ESW pump rooms to assess internal flooding protection measures in those areas. The inspectors reviewed selected risk significant plant design features intended to protect the associated safety-related equipment from internal flooding events. The inspectors reviewed flood analysis and design documents, including the Individual Plant Examination, UFSAR, and engineering evaluations. The documents reviewed are listed in the Attachment.

These activities constituted one internal flood protection measures inspection sample.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07 – 1 sample)a. Inspection Scope

The inspectors reviewed Entergy's programs for maintenance, testing, and monitoring of risk significant heat exchangers to verify whether potential deficiencies could mask degraded performance, and to assess the capability of the heat exchangers to perform their design functions. The inspectors assessed whether the FitzPatrick program conformed to Entergy's commitments to NRC Generic Letter 89 -13, "Service Water System Problems Affecting Safety-Related Equipment." In addition, the inspectors evaluated whether any potential common cause heat sink performance problems could affect multiple heat exchangers in mitigating systems or result in an initiating event.

Based on risk significance and prior inspection history, the following heat exchangers were selected:

- Electric bay unit coolers (67UC-16A and 67UC-16B)

The heat exchangers are typically cooled by the normal SW system and are cooled by the safety-related ESW system in accident conditions. The systems were designed to use cooling water supplied from the ultimate heat sink (Lake Ontario) to maintain Electric Bay room air temperature at a maximum value of 104°F. The inspectors reviewed system health reports, performance tests, inspection test results, and chemical control methods to ensure that the selected components conformed to Entergy's commitments to Generic Letter 89 -13, "SW System Problems Affecting Safety-Related Equipment." The inspectors compared the surveillance test (ST) and inspection results to the established acceptance criteria to verify that the results were acceptable and that the heat exchangers operated in accordance with design. The documents reviewed are listed in the Attachment. This activity constituted one heat sink performance inspection sample.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11).1 Quarterly Review (71111.11Q – 1 sample)a. Inspection Scope

On January 19, 2010, the inspectors observed licensed operator simulator training to assess operator performance during scenarios to verify that crew 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 (EOPs). 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. Licensed operator

training was evaluated for conformance with the requirements of 10 CFR 55, "Operators' Licenses." The documents reviewed are listed in the Attachment.

This activity constituted one operator simulator training inspection sample.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q – 3 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. The reviews focused on the following aspects when applicable:

- Proper maintenance rule scoping in accordance with 10 CFR Part 50.65;
- Characterization of reliability issues;
- Changing system and component unavailability;
- 10 CFR Part 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 follow systems were selected for review:

- Core spray; and
- Reactor protection system (RPS).

The inspectors reviewed the following aspects of Entergy's (a)(3) periodic evaluation report for November 2007 to October 2009 to ensure its performance in accordance with 10 CFR 50.65(a)(3):

- Completion within the time restraints of once per refueling cycle, not to exceed two years;
- Review of (a)(1) goals, (a)(2) performance criteria monitoring, preventive maintenance activities, and effectiveness of corrective actions;
- Evaluation of industry operating experience;
- Incorporation of appropriate adjustments as result of the periodic evaluation report; and
- Balance of availability and reliability in accordance with NUMARC 93-01.

These activities constituted three quarterly maintenance effectiveness inspection samples.

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 maintenance activities to verify that the appropriate risk assessments were performed prior to removing equipment for work. The inspectors verified that risk assessments were performed as required by 10 CFR Part 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 documents reviewed are listed in the Attachment.

- The week of January 4, 2010, which included increased risk due to emergent work on the 'D' EDG during an 'A' work week, increased trip risk due to high potential for frazil ice and work schedule changes due to off-site power considerations;
- The week of January 11, 2010, which included increased risk due to work on the HPCI system which incorporated extensive work on the HPCI turbine steam inlet isolation valve (23MOV-14);
- The week of January 18, 2010, which included emergent HPCI system maintenance and increased trip risk due to the 'B' reactor protection system on the alternate power supply;
- The week of February 15, 2010, which included schedule changes due to power suppression testing; and
- The week of March 15, 2010, which included increased risk due to work on the 'B' residual heat removal (RHR) and 'B' RHRSW systems which included the replacement of the 'D' RHRSW pump.

These activities constituted five maintenance risk assessments and emergent work control samples.

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; the use and control of applicable compensatory measures; and compliance with TSs. The inspectors' review included a verification that the operability determinations were conducted as specified by EN-OP-104, "Operability Determinations." The technical adequacy of the determinations was reviewed and compared to the TSs, UFSAR, and associated design basis documents (DBD). The documents reviewed are listed in the Attachment.

- CR-JAF-2009-04591, evaluation of impact of possible condensate storage tank suction pipe breach on the HPCI and reactor core isolation cooling systems;
- CR-JAF-2010-00014, 'D' EDG circulating lube oil pump failure;
- CR-JAF-2010-00894, west electric bay unit cooler (67UC-16A) SW check valve (46SWS-67A) failure to check;
- CR-JAF-2010-00739, 'D' EDG exhibited reactive power oscillations; and
- CR-JAF-2010-01270, 'B' EDG crankcase vacuum declining trend.

These activities constituted five operability evaluation samples.

b. Findings

No findings of significance were identified.

1R18 Plant Modifications (71111.18 – 2 samples)

a. Inspection Scope

The inspectors assessed the adequacy of the 10 CFR Part 50.59 evaluations for the following temporary and permanent modifications respectively. 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. This review represented one temporary modification inspection sample and one permanent modification inspection sample.

- EC 19362, Reactor Building Perimeter Sump Effluent Collection; and
- EC 17972, Replacement of the 'B' and 'D' EDG Speed Switch.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19 – 6 samples)

a. Inspection Scope

The inspectors reviewed 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 DBDs; test instrumentation had current calibrations, adequate range, and accuracy for the application; and 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 for conformance with the requirements of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control." The documents reviewed are listed in the Attachment.

- WO 00199298, HPCI turbine steam inlet isolation valve (23MOV-14) leakage repair;
- WO 00212541, RHR heat exchanger 'A' relief valve replacement;

- WO 00220690, 'D' EDG circulating lube oil pump replacement;
- WO 0215011, Replace 76P-4, diesel fire pump;
- WO 51103843, Replace 10P-1D, residual heat removal service water pump; and
- WO 00129656, Replace leaking mechanical seal and rebuild 10P-2A, residual heat removal keep-full pump.

This inspection constituted six post-maintenance test samples.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 – 6 samples)

a. Inspection Scope

The inspectors witnessed performance of STs and/or reviewed test data of selected risk-significant SSCs to assess whether the SSCs satisfied TSs, UFSAR, Technical Requirements Manual, and Entergy procedure requirements. The inspectors verified that test acceptance criteria were clear, demonstrated operational readiness, and were consistent with DBDs; test instrumentation had current calibrations, adequate range, and accuracy for the application; and tests were performed, as written, with applicable prerequisites satisfied. Upon ST completion, the inspectors verified that equipment was returned to the status specified to perform its safety function. The following STs were reviewed:

- ST-6HA, "Standby Liquid Control 'A' Side Quarterly Operability Test (IST)," Revision 4;
- ST-9BB, "EDG 'B' and 'D' Full Load Test and ESW Pump Operability Test," Revision 11;
- RAP-7.3.35, "Flux Tilt Testing," Revision 8;
- ISP-75-1, "RCIC CST Low Water Level Switch Functional Test/Calibration," Revision 19;
- ST-2AL, "RHR Loop 'A' Quarterly Operability Test (IST)," Revision 29; and
- ST-7BB, "Monthly SGT Train 'B' Run," Revision 2.

These activities represented six surveillance testing inspection samples.

b. Findings

No findings of significance were identified.

**Cornerstone: Emergency Preparedness**

1EP6 Drill Evaluation (71114.06 – 1 sample)

a. Inspection Scope

The inspectors observed emergency response organization activities during the emergency preparedness drill that was conducted on February 3, 2010. The inspectors

verified that emergency classification declarations, notifications, and protective action recommendations were properly completed. The inspectors evaluated the drill for conformance with the requirements of 10 CFR 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities." The inspectors observed Entergy's critique and compared Entergy's self-identified issues with observations from the inspectors' review to ensure that performance issues were properly identified.

This activity constitutes one drill evaluation inspection sample.

b. Findings

No findings of significance were identified.

4. **OTHER ACTIVITIES (OA)**

4OA2 Identification and Resolution of Problems (71152 – 2 samples)

.1 Review of Items Entered into the Corrective Action Program

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," to 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 (CAP). The review was accomplished by accessing Entergy's computerized database for CRs and attending CR screening meetings. In accordance with the baseline inspection procedures, the inspectors selected items across the Initiating Events, Mitigating Systems, and Barrier Integrity cornerstones for additional follow-up and review. The inspectors assessed Entergy personnel's threshold for problem identification, the adequacy of the cause analyses, and extent of condition review, operability determinations, and the timeliness of the specified corrective actions. The CRs reviewed are listed in the Attachment.

The inspector reviewed corrective action CRs and assessments associated with the radiation protection program that were initiated since the last inspection. The inspectors verified that problems identified by these CRs were properly characterized in Entergy's event reporting system, and that applicable cause and corrective actions were identified commensurate with the safety significance of the radiological occurrences.

b. Findings and Observations

No findings of significance were identified. The inspectors determined that Entergy staff identified equipment, human performance and program issues at an appropriate threshold and entered them into the CAP.

.2 Annual Sample: Detection of Tritium in an Unmonitored Path (71152 – 1 Sample)

a. Inspection Scope

On October 27, 2009, the monthly sample of the reactor building perimeter sump (RBPS) analysis indicated positive for tritium at 1474 pico-Curies per Liter (pCi/L). The

RBPS is a routine unmonitored path sample location and is sampled in accordance with procedure SP-01.11, "Unmonitored Paths Sampling and Analysis." Historical results show that the sump previously contained no detectable tritium. After additional confirmatory analysis was completed, on November 3, 2009, Entergy was notified of the confirmed positive analysis on the RBPS sample. Water is collected in the RBPS from a perimeter drain pipe located around the reactor building. The controlled water level of the sump is approximately 40 feet below the water table. This creates a localized depression in the water table which causes water to flow towards the RBPS. The RBPS pumps directly to the west storm drain (WSD) which flows by gravity to Lake Ontario. On December 16, 2009, the WSD sample indicated a tritium concentration of 984 pCi/L. Although it is sampled periodically, the WSD is not a monitored discharge path.

From the initial identification in October, 2009, RBPS tritium results increased to reach a maximum of 9596 pCi/L on December 10, 2009. RBPS tritium analysis results have since decreased and stabilized at approximately 4000 pCi/L. Tritium analysis results from the west storm drain reached a maximum of approximately 3099 pCi/L on January 6, 2010, but have since decreased and stabilized at less than the lower limit of detection (LLD). However, positive analysis results for tritium in the WSD continue to occur occasionally. The NRC has determined that the releases were unplanned; however, the levels of tritium remain well below regulatory limits.

The inspectors reviewed CRs and the associated apparent cause analysis, site drawings, and applicable procedures. The inspectors reviewed sample analysis results and held discussions with Entergy personnel regarding completed and planned corrective actions.

b. Findings and Observations

No findings of significance were identified.

On November 25, 2009, CR-JAF-2009-4166 was initiated to document the positive tritium results, (indication above LLD) for the RBPS sample. The inspectors determined that the condition was not promptly documented in the corrective action program. Notwithstanding the delayed CR initiation, corrective actions to mitigate, identify and isolate the source of tritium were appropriately focused. On January 14, 2010, a modification was completed to divert water from the RBPS into holding tanks. After the tanks are analyzed, the water is released into the discharge canal as a monitored release. The inspectors noted that the five existing ground water monitoring wells which are located on the north side of the plant were sampled and were less than the lower limit of detection (LLD). Additional corrective actions include continued sampling on increased frequency, installation of monitoring wells located around the reactor building and installation of soil vapor extraction equipment located in the vicinity of the condensate storage tanks.

.3 Annual Sample: Safety Culture Assessments (71152 – 1 sample)

a. Inspection Scope

The inspectors reviewed the FitzPatrick safety culture surveys completed in the second half of calendar year 2009 to become knowledgeable in and understand the safety culture insights, potential safety culture gaps, and areas for improvement documented in

those surveys. These self-assessments were Entergy-initiated efforts to provide a current snapshot of the safety culture at FitzPatrick. The inspectors' review focused on Entergy's action plans developed to address the surveys' results regarding safety culture insights and challenges commensurate with the potential safety significance of the issues. In completing this review, the inspectors considered the performance attributes described in NRC Inspection Procedure 71152, "Problem Identification and Resolution," to evaluate the planned actions for improvement.

The inspectors reviewed a 2009 Entergy fleet-wide initiated nuclear safety culture assessment and a 2009 station-specific nuclear safety culture assessment, corrective action program documentation, internal and external assessments, employee concerns program documentation, and conducted interviews to provide perspectives and insights from Entergy management on the safety culture assessment results and Entergy corrective actions.

b. Findings and Observations

No findings of significance were identified.

The inspectors concluded that Entergy management appropriately evaluated the results from the 2009 safety culture assessments and identified corrective actions that reasonably address the safety culture challenges and insights as documented in the 2009 self-assessments. Entergy's corrective actions were prioritized consistent with the potential safety significance of the issues and of sufficient scope and breadth to address challenges that may exist. The inspectors observed that Entergy management implemented short-term or interim actions while a significant portion of Entergy's corrective actions are still in the early stages of implementation. The effectiveness of those actions remains to be demonstrated. Additionally, Entergy management made the inspectors aware that the action plans that separately address each safety culture assessment report are planned to be combined to provide for a more integrated station approach to communicating and addressing safety culture challenges.

The inspectors observed that Entergy personnel issued learning organization condition reports that identified and tracked actions regarding each self-assessment to address the report's safety culture results. The inspectors also observed that Entergy staff issued condition reports to address self-assessment results that would be considered to meet the condition thresholds described in EN-LI-102, "Corrective Action Program." However, the inspectors identified that station personnel missed an opportunity to fully engage their station management team through available processes like the Corrective Action Review Board or the Executive Protocol Group prior to its issuance of the corrective action plans that specifically addressed the station-specific safety culture assessment. The inspectors determined that the practice of engaging the station management team would capture a wider range of perspectives on the results and ensure station management alignment and support regarding implementation of actions; however, the inspectors determined that this practice for self-assessments was not a station procedure requirement and Entergy personnel affirmed that senior management was engaged in the review and development of action plans.

The inspectors observed that the station's corrective action plans appropriately indicated an increased station focus with short and long-term actions to address two safety culture challenges identified similarly in both of the 2009 safety culture self-assessments.

Specifically, the inspectors noted Entergy management has implemented and/or planned actions to address current safety culture challenges regarding: (1) a reluctance by station personnel to fully engage the corrective action program and issue condition reports (CRs) for process issues that involve or may be perceived to involve substandard personnel performance of other station employees; and (2) supervisory and management oversight ineffectiveness in reinforcing work practice standards and expectations. The inspectors determined that Entergy management implemented appropriate short-term actions to address these issues. Examples of actions included Entergy senior management engagement via small group meetings and discussions with station staff and supervisory personnel regarding the importance of identifying adverse conditions at a low threshold, reinforcement of safety culture expectations with a focus on personnel accountability, and adherence to station standards and expectations. Entergy staff also initiated refresher training to ensure site personnel were aware of available methods to report adverse conditions in the corrective action program and other methods available to report issues.

The inspectors also identified that, while Entergy management had a number of actions planned or implemented to address the station-specific self-assessment results, Entergy management had not documented actions in the corrective action program to ensure the station had effectiveness measures to monitor and assess whether actions were effective with regard to safety culture improvements. Entergy issued an additional corrective action to CR-JAFLO-2010-014 to address the inspectors' observation. The inspectors also noted Entergy's action plan to address the fleet-wide safety culture assessment identified specific actions to conduct effectiveness reviews on a set periodicity.

40A3 Event Follow-up (71153 – 1 sample)

.1 (Closed) Licensee Event Report (LER) 05000333/2009008-00, High Pressure Coolant Injection System Inoperable Longer Than Allowed By Technical Specifications

a. Inspection Scope

The inspectors reviewed the LER and related documents regarding the accuracy of and appropriateness of corrective actions for the LER. NRC inspection report 05000333/2009003 previously documented a finding that the reference value for the operating time for the HPCI system turbine stop valve, 23HOV-1, was improperly changed which masked a degrading trend for the valve.

b. Findings

Introduction: The inspectors identified a Severity Level IV, NCV because Entergy personnel did not provide a written report to the NRC within 60 days after discovery of the event as required by 10 CFR 50.73, "LER System," for a condition which was prohibited by TS 3.5.1, "Emergency Core Cooling Systems - Operating."

Description: In January, 2009, the HPCI system failed post-maintenance testing as a result of the failure of the HPCI system turbine stop valve, 23HOV-1, to stroke. Entergy personnel documented the condition in CR-JAF-2009-0350.

On April 8, 2009, Entergy staff determined that the event was not reportable based on the conclusion that the HPCI system was capable of performing its safety function prior to entering the TSs to conduct maintenance and that the IST stroke time criteria were not required for determining operability. However, the inspectors determined that ASME OM Code-2003 Addenda to ASME OM Code-2001, "Code for Operation and Maintenance of Nuclear Power Plants," requires that valves with measured stroke times that do not meet the acceptance criteria be immediately retested or declared inoperable. The inspectors also noted that Part 9900: Technical Guidance, "Operability Determinations and Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety," in referring to ASME OM code criteria states that: "If the values are not met at any time, the system must be declared inoperable, the limiting condition for operation must be declared not met, and the applicable conditions must be entered." This condition met the criteria for reporting under 10 CFR 50.73 (a)(2)(i)(B) in that the condition was not allowed by the plant's TSs. The stroke time for 23HOV-1 had previously exceeded the correct acceptance criteria which should have resulted in declaring the HPCI system inoperable.

Analysis: The NRC identified a performance deficiency in that Entergy did not provide a written report within 60 days as required by 10 CFR 50.73(a)(2)(i)(B). This violation involved a failure to make a required report to the NRC and is considered to impact the regulatory process. Such violations are dispositioned using the traditional enforcement process instead of the Significance Determination Process. Using the Enforcement Policy Supplement I, "Reactor Operations," example D4 which states, "A failure to make a required LER;" the NRC determined that this violation could potentially impact the regulatory process and is more than minor and categorized as a Severity Level IV violation.

Entergy's corrective action included initiating CR-JAF-2009-03964, submitting LER 05000333/2009008-00 on January 11, 2010, and providing additional guidance for their staff on licensee event reporting requirements.

The inspectors determined that this finding had a cross-cutting aspect in the area of problem identification and resolution within the corrective action program component because Entergy personnel did not properly evaluate the condition reporting criteria. (P.1(c).

Enforcement: 10 CFR 50.73, "LER System," requires licensees to submit an LER for any operation or condition which was prohibited by the plant's TSs within 60 days of discovering the event. Contrary to the above, Entergy failed to submit a report within 60 days of April 8, 2009, when the condition associated with the HPCI turbine stop valve was discovered. Because this violation was of very low safety significance, was not repetitive or willful, and it was entered into Entergy's corrective action program, this violation is being treated as an NCV, consistent with section VI.A.1 of the NRC Enforcement Policy. (**NCV 05000333/2010002-01: Failure to Submit an LER for a Condition Prohibited by TS Associated with HPCI.**) This LER is closed.

#### 4OA5 Other Activities

##### .1 World Association of Nuclear Operators Plant Assessment Report Review

###### a. Inspection Scope

The inspectors reviewed the World Association of Nuclear Operators Plant Assessment Report of FitzPatrick conducted in November, 2009. The inspectors reviewed the report to ensure that the issues identified were consistent with the NRC perspectives of FitzPatrick performance and to determine if any significant safety issues were identified that required further NRC follow-up.

###### b. Findings

No findings of significance were identified.

##### .2 Temporary Instruction (TI) 2515/180 – Inspection of Procedures and Processes for Managing Fatigue

###### a. Inspection Scope

The objective of this TI was to determine if Entergy's implementation procedures and processes required by 10 CFR 26, Subpart I, "Managing Fatigue" are in place to reasonably ensure that the requirements specified in Subpart I are being addressed. This TI applies to all operating nuclear power reactor licensees, but is intended to be performed for one site per utility. On March 23-24, 2010, the inspectors interfaced with the appropriate station staff to obtain and review station policies, procedures, and processes necessary to complete all portions of this TI.

###### b. Findings and Observations

No findings of significance were identified.

The inspectors confirmed that the Entergy procedures listed in Section 4OA5 of the Attachment contained the necessary processes to ensure compliance with requirements in 10 CFR Part 26, Subpart I, "Managing Fatigue."

#### 4OA6 Meetings, Including Exit

##### Exit Meeting Summary

The inspectors presented the inspection results to Mr. P. Dietrich and other members of Entergy's management at the conclusion of the inspection on April 7, 2010. The inspectors asked Entergy whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified by Entergy personnel.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

Entergy Personnel

P. Dietrich, Site Vice President  
C. Adner, Manager Operations  
J. Barnes, Manager, Training and Development  
C. Brown, Quality Assurance Manager, Entergy  
P. Cullinan, Manager, Emergency Preparedness  
B. Finn, Director Nuclear Safety Assurance  
D. Johnson, Manager, System Engineering  
J. LaPlante, Manager, Security  
B. Sullivan, General Manager, Plant Operations  
J. Pechacek, Licensing Manager  
J. Solowski, Radiation Protection  
M. Woodby, Director, Engineering

**LIST OF ITEMS OPEN, CLOSED, AND DISCUSSED**

Opened and Closed

05000333/2010002-01	NCV	Failure to Submit an LER for a Condition Prohibited by TS Associated with HPCI
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Closed

05000333/2009008-00	LER	High Pressure Coolant Injection System Inoperable Longer Than Allowed By Technical Specifications
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Discussed

None

## LIST OF DOCUMENTS REVIEWED

### Section 1R01: Adverse Weather Protection

#### Procedures:

AP-12.04, "Seasonal Weather Preparations," Revision 17  
OP-4, "Circulating Water System," Revision 66  
RT-04.05, "Ice Potential Determination," Revision 1

### Section 1R04: Equipment Alignment

#### Procedures:

AP-12.12, "Protected Equipment Program," Revision 7  
OP-13, "Residual heat removal System," Revision 94  
OP-19, "Reactor Core Isolation Cooling System," Revision 47  
OP-21, "Emergency Service Water (ESW)," Revision 36

#### Documents:

JAF-RPT-MULTI-01267, "Generic Letter 89-13 Program Plan," Revision 4  
System Health Report, 46 Emergency Service Water, 3rd quarter 2009  
System Health Report, 46 Emergency Service Water, 4th quarter 2009

#### Drawings:

FM-22A, "Flow Diagram Reactor Core Isolation Cooling System 13," Revision 54  
FM-46B, "Flow Diagram Emergency Service Water System 46 & 15," Revision 53

### Section 1R05: Fire Protection

PFP-PWR06, Fire Area Zone ID/CT-4, elevation 286 foot  
PFP-PWR07, Fire Area/Zone XI/CT-3, elevation 286 foot  
PFP-PWR12, Fire Area/Zone VII/RR-1, elevation 286 foot  
PFP-PWR01, Fire Area/Zone II/CT-2, elevation 258 foot  
PFP-PWR02, Fire Area/Zone IC/CT-1, elevation 258 foot

### Section 1R06: Flood Protection Measures

#### Documents:

JAF-NE-09-00001, "James A. Fitzpatrick Probabilistic Safety Assessment," Revision 0

#### Procedures:

ESP-50.001, "Floor Drain Flow Test, Revision 0

### Section 1R07: Heat Sink Performance

#### Procedures:

ST-8Q, "Testing of the Emergency Service Water System (IST)," Revision 38, completed 3/11/09  
ST-8Q, "Testing of the Emergency Service Water System (IST)," Revision 38, completed 6/19/09  
ST-8Q, "Testing of the Emergency Service Water System (IST)," Revision 38, completed 9/26/09  
ST-8Q, "Testing of the Emergency Service Water System (IST)," Revision 39, completed 12/5/09  
ST-8Q, "Testing of the Emergency Service Water System (IST)," Revision 39, completed 2/26/10

Documents:

JAF-CALC-SWS-00569, "Cooler Performance Methodology for Crescent, Electric Bay, and Cable Tunnel Coolers," Revision 6

JAF-RPT-MULTI-02294, "Maintenance Rule Basis Document for Service Water Systems Including System 10 (RHRSW), 40 (Normal SW), and 46-ESW (Emergency SW)," Revision 8

Condition Reports:

CR-2009-02211

CR-2009-03286

CR-2010-00882

Section 1R11: Licensed Operator Regualification

70690-4-LOR, "High Vibration on 'B' FW Pump [AOP-42]/Loss of EHC Header Manual Scram/Failure to Scram EOP-3 High Power ATWS/Loss of EHC Pressure Control SRV Operation/BIIT Approached Level Lowered to Control Power

72075-1, "Tech Spec Instrument Failure/Loss of 10700 Bus AOP-20/Small Leak in the DW EOP-2&4/ Residual Transfer with level and pressure control via HPCI and RCIC

Section 1R12: Maintenance Effectiveness

Procedures:

EN-DC-203, "Maintenance Rule Program," Revision 1

EN-DC-204, "Maintenance Scope and Basis," Revision 2

EN-DC-205, "Maintenance Rule Monitoring," Revision 2

EN-DC-206, "Maintenance Rule (a)(1) Process," Revision 1

EN-DC-207, "Maintenance Rule Periodic Assessment," Revision 2

EN-DC-324, "Preventive Maintenance Process," Revision 6

ST-29A, "Manual Scram Functional Test," Revision 13

ST-29C, "RPS Channel Test Switch Functional Test," Revision 13

ST-3AA, "Core Spray Loop A Monthly Operability Test," Revision 8

ST-3AB, "Core Spray Loop B Monthly Operability Test," Revision 8

ST-3F, "Core Spray Full Flow Test (IST)," Revision 4

Documents:

QA-4-2008-JAF-1, Quality Assurance Audit Report

JAF-NE-09-00001, "James A. FitzPatrick Probabilistic Safety Assessment," Revision 0

JAF-RPT-CSP-02285, "Maintenance Rule Basis Document for System 14 Core Spray System," Revision 6

JAF-RPT-RPS-0227, "Maintenance Rule Basis Document for System 05 Reactor Protection System," Revision 7

LO-JAFLO-2008-00028, "10 CFR 50.65 (a)(3) Periodic Assessment November 2007 to October 2009"

System Health Report, 05 Reactor Protection System, 1st quarter 2009

System Health Report, 05 Reactor Protection System, 2nd quarter 2009

System Health Report, 05 Reactor Protection System, 3rd quarter 2009

System Health Report, 05 Reactor Protection System, 4th quarter 2009

System Health Report, 14 Core Spray System, 1st quarter 2009

System Health Report, 14 Core Spray System, 2nd quarter 2009

System Health Report, 14 Core Spray System, 3rd quarter 2009

System Health Report, 14 Core Spray System, 4th quarter 2009

Drawings:

FM-23A, Flow Diagram Core Spray System 14, Revision 49

Condition Reports:

CR-2008-00421	CR-2008-02888	CR-2008-03946
CR-2008-00792	CR-2008-02906	CR-2008-04011
CR-2008-01332	CR-2008-03130	CR-2008-04016
CR-2008-01911	CR-2008-03142	CR-2008-04453
CR-2008-01968	CR-2008-03373	CR-2008-04592
CR-2008-02626	CR-2008-03386	CR-2009-00608
CR-2008-02767	CR-2008-03534	CR-2009-01307
CR-2008-02818	CR-2008-03577	CR-2009-02719
CR-2008-02881	CR-2008-03673	CR-2010-00265

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures:

AP-05.13, "Maintenance During LCOs," Revision 9  
AP-10.10, "On-Line Risk Assessment," Revision 6  
AP-12.12, "Protected Equipment Program," Revision 7  
EN-WM-104, "On Line Risk Assessment," Revision 1  
MP-059.84, "GE Sentinel Gate (Pressure Seal) Valve (ISI)," Revision 04

Drawings:

FM-25A, "Flow Diagram High Pressure Coolant Injection System 23," Revision 71

Condition Reports:

CR-2010-00145                      CR-2010-00150

Section 1R15: Operability Evaluations

Documents:

ESI-EMD EDG owners group technical paper, "Operating guidance on loss of circulating and/or turbocharger soak back oil pumps"  
JAF-RPT-MULTI-02294, "Maintenance Rule Basis Document for Service Water Systems Including System 10 (RHRSW), 40 (Normal SW), and 46-ESW (Emergency SW)," Revision 8

Drawings:

FM-46A, Flow Diagram Service Water System 46, Revision 89

Condition Reports:

CR-2010-00894                      CR-2010-00940                      CR-2010-00965

Section 1R18: Plant Modifications

Procedures:

TOP-385, "Temporary reactor Perimeter Sump Holding Tanks," Revision 2

Condition Reports

CR-2009-04166  
CR-2009-04590



Section 40A5: Other

Procedures

JAF-NS-102, Fitness for Duty Procedure, Revision 1

EN-NS-102, Fitness for Duty Program, Revision 8

EN-OM-123, Fatigue Management Program, Revision 2

EN-WM-104, On-Line Risk Assessment, Revision 1

EN-OP-116, Infrequently Performed Tests or Evolutions, Revision 5

EN-OU-108, Shutdown Safety Management Program, Revision 1

Other Documents

Generic Plant Access Training – Fitness-for-Duty and Behavioral Observation Lesson

## LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
AOP	abnormal operating procedure
CAP	corrective action program
CFR	Code of Federal Regulations
CR	condition report
DBD	design basis document
EDG	emergency diesel generator
Entergy	Entergy Nuclear Northeast
EOP	emergency operating procedure
ESW	emergency service water
FitzPatrick	James A. FitzPatrick Nuclear Power Plant
HPCI	high pressure coolant injection
IMC	inspection manual chapter
IST	inservice test
LER	licensee event report
NCV	non-cited violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OA	other activities
OP	operating procedure
PARS	Publicly Available Record
pCi/L	pico-Curies per liter
RBPS	reactor building perimeter sump
RCIC	reactor core isolation cooling
RHR	residual heat removal
RHRSW	residual heat removal service water
RPS	reactor protection system
SDP	significance determination process
SSC	structures, systems, or components
ST	surveillance test
SW	service water
TS	technical specification
UFSAR	updated final safety analysis report
WO	work order
WSD	west storm drain