UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
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KING OF PRUSSIA, PA 19406-1415

February 10, 2011

Mr. Kevin Bronson
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 05000333/2010005

Dear Mr. Bronson:

On December 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 January 25, 2011, 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 two self-revealing findings of very low safety significance (Green). These two findings were determined to involve violations of NRC requirements. Additionally, two licensee-identified violations which were determined to be of very low safety significance are listed in this report. However, because of the very low safety significance and because the issues were entered into your corrective action program (CAP), the NRC is treating these findings as non-cited violations (NCV) consistent with Section 2.3.2 of the NRC's Enforcement Policy. If you contest any NCV, 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 any cross-cutting aspect assigned to a 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 Senior Resident Inspector at FitzPatrick.

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,

Mel Gray, Chief
Projects Branch 2
Division of Reactor Projects

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

Enclosure: Inspection Report 05000333/2010005
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

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Sincerely,

/RA/

Mel Gray, Chief
Projects Branch 2
Division of Reactor Projects

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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.:	05000333/2010005
Licensee:	Entergy Nuclear Northeast (Entergy)
Facility:	James A. FitzPatrick Nuclear Power Plant
Location:	Scriba, New York
Dates:	October 1, 2010 through December 31, 2010
Inspectors:	S. Rutenkroger, PhD, Acting Senior Resident Inspector D. Dodson, Acting Resident Inspector E. Knutson, Senior Resident Inspector J. Noggle, Senior Health Physicist T. Burns, Reactor Inspector R. Latta, Senior Reactor Inspector, Region IV D. Jones, Senior Reactor Inspector, Region IV P. Prescott, Senior Quality and Vendor Program Engineer, NRR
Approved by:	Mel Gray, Chief Projects Branch 2 Division of Reactor Projects

TABLE OF CONTENTS

SUMMARY OF FINDINGS 3

REPORT DETAILS 5

1. REACTOR SAFETY 5

1R01 Adverse Weather Protection 5
1R04 Equipment Alignment 6
1R05 Fire Protection 7
1R06 Flood Protection Measures 7
1R07 Heat Sink Performance 8
1R11 Licensed Operator Requalification Program 8
1R12 Maintenance Effectiveness 9
1R13 Maintenance Risk Assessments and Emergent Work Control 9
1R15 Operability Evaluations 10
1R18 Plant Modifications 11
1R19 Post-Maintenance Testing 11
1R20 Refueling and Other Outage Activities 12
1R22 Surveillance Testing 17

2.RADIATION SAFETY 17

2RS1 Radiological Hazard Assessment and Exposure Controls 17
2RS2 Occupational ALARA Planning and Controls 19
2RS3 In-Plant Airborne Radioactivity Control and Mitigation 20
2RS4 Occupational Dose Assessment 21

4.OTHER ACTIVITIES 22

4OA1 Performance Indicator Verification 22
4OA2 Problem Identification and Resolution 24
4OA5 Other Activities 27
4OA6 Meetings, Including Exit 31
4OA7 Licensee-Identified Violations 31

ATTACHMENT: SUPPLEMENTAL INFORMATION 32

SUPPLEMENTAL INFORMATION A-1

KEY POINTS OF CONTACT A-1

LIST OF ITEMS OPEN, CLOSED, AND DISCUSSED A-1

LIST OF DOCUMENTS REVIEWED A-2

LIST OF ACRONYMS A-15

SUMMARY OF FINDINGS

IR 05000333/2010005; 10/01/2010 - 12/31/2010; James A. FitzPatrick Nuclear Power Plant; Refueling and Other Outage Activities.

This report covered a three-month period of inspection by resident, region-based, and Nuclear Reactor Regulation (NRR) inspectors. Two Green findings, which were non-cited violations (NCV), were 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 aspects for the findings were determined using IMC 0310, "Components Within the Cross-Cutting Areas." Findings for which the SDP does not apply may be "Green" or be assigned a severity level after Nuclear Regulatory Commission (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

- Green: A self-revealing NCV of very low safety significance of technical specification (TS) 5.4, "Procedures," was identified because Entergy procedure OP-30A, "Refueling Water Level Control," did not provide adequate guidance to operators for filling the reactor cavity which resulted in the reactor building (RB) floor drains overflowing and water intrusion from higher to lower levels in the RB. Entergy personnel entered this issue into their corrective action program (CAP), (CR-JAF-2010-05406 and CR-JAF-2010-05407) and performed several actions to ensure proper water level control prior to the next drain down of the reactor cavity. These actions included revising OP-30A to provide sufficient detail, ensuring additional detail would be included in pre-job briefings to include potential drain paths from the reactor cavity and spent fuel pool, and installing a dedicated camera to monitor reactor cavity water level.

  This finding is more than minor because it is associated with the procedure quality attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown. Specifically, water spray throughout areas of the RB created a potential for water entering motors, valve operators, motor control centers, circuit breakers, and electrical junction boxes, such that electrical components could have been compromised, which increased the likelihood of an event that would upset plant stability and challenge a critical safety function. The inspectors determined the significance of the finding using IMC 0609, Appendix G, "Shutdown Operations Significance Determination Process," Phase 1. The finding was determined to be of very low safety significance because Entergy personnel maintained an adequate mitigation capability and there was there neither an inadvertent loss of two feet of RCS inventory nor an inadvertent reactor coolant system pressurization.

  The inspectors determined this finding had a cross-cutting aspect in the area of human performance within the resources component because the procedure used for filling the reactor cavity was not sufficiently complete to assure nuclear safety. (H.2(c) per IMC 0310) (Section 1R20)

- Green: A self-revealing NCV of very low safety significance of TS 5.4, "Procedures," was identified because Entergy personnel did not implement AP-12.06, "Equipment Status Control," as required. Specifically, Entergy personnel did not maintain status control and properly document the position of the residual heat removal (RHR) to reactor water recirculation loop 'B' isolation valve (10RHR-81B) as closed nor did operators restore the valve to its normal locked open position upon completion of a leak surveillance test. Entergy personnel entered this issue into their corrective action program (CAP), (CR-JAF-2010-06656) and promptly restored the valve to its required locked open position.

  This finding is more than minor because it is associated with the configuration control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, the operators did not maintain configuration control of the RHR isolation valve and restore the valve to a locked open position when the 'B' RHR subsystem was credited for maintaining acceptable shutdown risk. The inspectors determined the significance of the finding using IMC 0609, Appendix G, "Shutdown Operations Significance Determination Process." The issue was determined to screen as very low safety significance (Green) because the 'B' RHR train could be considered available with respect to Appendix G, Section 4.0, and Attachment 3, Section 2.2.3. Specifically, the inspectors determined that operators had more than twice the time available (with a shortest time to boil of 5.8 hours) than would have been required to identify and take action to restore/open the RHR isolation valve in the event of a loss of shutdown cooling or RCS inventory.

  This finding had a cross-cutting aspect in the Human Performance cross-cutting area, Work Practices component, because Entergy personnel did not define and effectively communicate expectations regarding procedural compliance, and personnel did not follow procedures (H.4(b) per IMC 0310). (Section 1R20)

Other Findings

- Violations of very low safety significance were identified by Entergy staff and have been reviewed by the inspectors. Corrective actions taken or planned by Entergy staff have been entered into Entergy's CAP. These violations and the CAP tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

The James A. FitzPatrick (JAF) Nuclear Power Plant (FitzPatrick) began the inspection period shutdown for a refueling outage. On October 20, 2010, upon completion of the refueling outage, operators restored reactor power to 100 percent. On November 15, 2010, operators reduced reactor power to 12 percent in a planned evolution in order to identify and repair a nitrogen leak within the drywell and an oil leak associated with the 'A' reactor water recirculation (RWR) pump motor. Following repairs, operators restored power to 100 percent on November 19, 2010. On November 20, 2010, operators reduced reactor power to 47 percent in order to repair an emergent water leak on the 'A' reactor feedwater pump (RFP). Following repairs, operators restored power to 100 percent on November 22, 2010. On December 9, 2010, operators reduced reactor power to 83 percent in order to clean the 'B' condenser waterboxes. Following cleaning operations, operators restored power to 100 percent on December 10, 2010. In addition to the above power reductions, the plant also conducted scheduled power reductions for control rod pattern adjustments. Otherwise, the plant remained at 100 percent 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 – 1 sample)

a. Inspection Scope

The inspectors reviewed and verified completion of the cold weather preparation checklist contained in procedure AP-12.04, "Seasonal Weather Preparations." The inspectors reviewed the operating status of the reactor and turbine building (TB) cooling systems, reviewed the procedural limits and actions associated with cold weather, and walked down accessible areas of the reactor and TBs to assess the effectiveness of the heating and ventilation systems. Walkdowns were also conducted in the emergency diesel generator (EDG), emergency service water (ESW), and screenhouse rooms. The documents reviewed are listed in the Attachment.

These activities constituted one seasonal weather conditions inspection sample.

b. Findings

No findings were identified.

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 Title 10, Code of Federal Regulations (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:

- 'A,' 'B,' 'C,' and 'D' EDGs when the offsite power 115 kilovolt (kV) Line #4 was out of service;
- 'A' RFP when the 'B' RFP was out of service for work associated with a modification; and
- 76P-2 and 76P-4, the electric fire pump and east diesel fire pump, respectively, when 76P-1, the west diesel fire pump, was out of service for planned maintenance.

These activities constituted three partial system walkdown inspection samples.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors performed a complete system alignment inspection of the core spray 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 were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Review (71111.05Q – 7 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 FitzPatrick's fire protection program. The inspectors evaluated the fire protection program for conformance with the requirements of license condition 2.C(3), "Fire Protection." The documents reviewed are listed in the Attachment.

- Fire area/zone XVII/RB-1E;
- Fire area/zones IX/RB-1A, X/RB-1B, and VIII/RB-1C;
- Fire area/zone IE/TB-1;
- Fire area/zone II/CT-2;
- Fire area/zone IC/CT-1;
- Fire area/zone VII/CS-1; and
- Fire area/zone XVIII/RB-1W.

These activities constituted seven quarterly fire protection inspection samples.

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06 – 1 sample)

a. Inspection Scope

The inspectors examined the conditions within the following underground bunkers/manholes in order to assess the adequacy of the conditions in which underground cabling was maintained. The inspectors verified by direct observation that cables which were not qualified for continuous submergence were not submerged in water; that cables and/or splices appeared intact; that the condition of cable support structures were adequate to maintain the integrity of cables; and as required, that the proper drainage and/or dewatering device (sump pump) operation and level alarm circuits were set appropriately.

- HH01;
- MH09; and
- MH10.

These activities constituted one annual review of cables located in underground bunkers/manholes inspection sample.

b. Findings

No findings 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 the heat exchanger selected was the 'B' EDG jacket water cooler, 93WE-1B. This heat exchanger is cooled by the emergency service water system. The system was designed to use cooling water supplied from the ultimate heat sink (Lake Ontario) to maintain proper jacket water temperature with the 'B' EDG operating. The inspectors reviewed system health reports, performance tests, inspection test results, and chemical control methods to ensure that the selected component 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 exchanger operated in accordance with design. The documents reviewed are listed in the Attachment.

These activities constituted one heat sink performance inspection sample.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11Q – 1 sample)

a. Inspection Scope

On November 8, 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 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 Part 55, "Operators' Licenses." The documents reviewed are listed in the Attachment.

These activities constituted one quarterly operator simulator training inspection sample.

b. Findings

No findings 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. The documents reviewed are listed in the Attachment. 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 50.65 (a)(1) and (a)(2) classifications;
- Identifying and addressing common cause failures;
- 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:

- Process radiation monitoring system; and
- A review of Entergy's 10 CFR 50.65 (a)(3) periodic evaluation.

These activities constituted two quarterly maintenance effectiveness inspection samples.

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 4 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 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 October 24, which included a 'B' and 'D' EDG monthly ST, functional testing of the 'B' average power range monitor, planned maintenance on the reactor core isolation cooling (RCIC) system, and an elevated risk of a plant trip due to high winds;
- The week of October 31, which included a planned outage of offsite power 115 kV Line #4, calibrations of the speed indication for 'A' and 'B' reactor water recirculation (RWR) motor generator (MG) sets, instrument testing and calibrations on the high pressure coolant injection (HPCI) system, and instrument testing and calibrations on the RCIC system;
- The week of November 14, which included a downpower to address nitrogen leakage within the drywell and an oil leak on the 'A' RWR pump motor, various maintenance activities on the 'A' and 'B' feedwater pumps, including resolving through-wall leakage at a non-isolable weld location associated with an abandoned one inch diameter seal cooling pipe, a monthly ST on the 'A' and 'C' EDGs, and adverse weather conditions; and
- The week of December 12, which included functional testing of the 'A' primary containment isolation system, preventive maintenance on the 'A' control rod drive pump, functional testing of the 'A' average power range monitor, a heavy load lift within the RB, and an elevated risk of a plant trip due to potential for frazil ice formation.

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

b. Findings

No findings 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 technical specifications. The inspectors' review included 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 (DBDs).

- CR-JAF-2010-05413, potential transportable debris identified during inspections within the drywell;
- CR-JAF-2010-06104, 10MOV-17, the residual heat removal (RHR) shutdown cooling isolation valve has potential indications of grease degradation and hardening;
- CR-JAF-2010-07044, annunciator 09-3-3-25, HPCI turbine isolation and trip, was not in alarm during reactor startup;

- CR-JAF-2010-07273, indication of leakage from the nitrogen instrument header within the drywell; and
- CR-JAF-2010-07401, two temperature detectors in drywell area five are indicating an increasing temperature trend.

These activities constituted five operability evaluation inspection samples.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18 – 3 samples)

a. Inspection Scope

The inspectors assessed the adequacy of the 10 CFR 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 two temporary modification inspection samples and one permanent modification inspection sample.

- EC 20099, "Provide Temporary Power During the L13 Bus Outage for 88CR-5;"
- EC 17147, "Install a Temporary Test Valve on 23HOV-1 Balance Chamber Pressure Port;" and
- EC 25564, "HPCI INST PWR Inverter 23INV-79 Replacement with NLI 250 Watts Inverter."

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 – 10 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 50, Appendix B, Criterion XI, "Test Control." The documents reviewed are listed in the Attachment.

- WO 00161192, replacement of 71INV-3A, low pressure coolant injection motor operated valve independent power supply 'A' inverter, due to a permanent plant modification;
- WO 00208665, replacement of 71UPS-1, uninterruptible power supply (UPS) MG set, with 71UPP, UPS static inverter, due to a permanent plant modification;
- WO 00252358, adjustments made to 27AOV-114, drywell exhaust outer isolation valve, to reduce air leakage past the valve in accordance with local leak rate testing (LLRT) requirements;
- WO 51656573, replacement of filter capacitors in 71BC-1B, 'B' station battery charger, as preventive maintenance;
- WO 00251482, work on valve 14AOV-13A, core spray 'A' testable check valve;
- WO 51694425, repacking valve 14AOV-13B, core spray 'B' testable check valve;
- WO 51105487, installation of external grease relief bypass on limitorque actuator of valve 10MOV-38B, 'B' RHR to torus spray isolation valve;
- WO 00165374, repair of 29AOV-86C, outboard line 'C' main steam isolation valve (MSIV), following failure of local leak rate test (LLRT);
- WO 00250875, repair of 29AOV-80C, inboard line 'C' MSIV, following failure of LLRT; and
- WO 00254987, repair of valve operator on 29AOV-80D, inboard line 'D' MSIV, due to a nitrogen leak.

These activities constituted ten PMT inspection samples.

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20 – 1 sample)

a. Inspection Scope

The inspectors observed and reviewed selected refueling outage activities to verify that operability requirements were met and that risk, industry experience, and previous site specific problems were considered. The outage was in progress at the end of the previous inspection period, therefore this sample is a continuation of the inspection of refueling outage activities from the previous inspection period.

- During the refueling outage, the inspectors discussed with workers and supervisors how fatigue was being managed, to ensure that they were aware of their limits and responsibilities; and to discuss waiver requests, deviations, self declarations and fatigue assessments.

- The inspectors reviewed the outage schedule and procedures, and verified that TS required safety system availability was maintained and shutdown risk was minimized. The inspectors verified that contingency plans existed for restoring key safety functions during periods of reduced system redundancy. The inspectors also verified that containment requirements for refueling activities were met.

- The inspectors verified that requirements for fuel movement were met through refuel bridge observations, control room panel walkdowns, and discussions with operations department personnel.

- The inspectors periodically verified proper alignment and operation of the shutdown cooling and alternate decay heat removal systems. The verification also included reactor cavity and fuel pool makeup paths and water sources, and administrative control of drain down paths. The inspectors observed portions of the reactor cavity drain down to the level of the reactor pressure vessel flange.

- The inspectors conducted a thorough walkdown of containment prior to closure and verified there was no evidence of leakage, tags were cleared, and there was no debris that might contribute to emergency core cooling system sump blockage.

- The inspectors observed portions of the plant startup and verified through plant walkdowns, control room observations, CR reviews, and ST reviews that the safety-related equipment required for mode change was operable, that containment integrity was set, and that reactor coolant boundary leakage was within TS limits.

b. Findings

.1 Inadequate Procedure for Refueling Water Level Control Resulted in Overflow of Reactor Cavity Water in the Reactor Building

Introduction: A self-revealing NCV of very low safety significance (Green) of TS 5.4, "Procedures," was identified because Entergy procedure OP-30A, "Refueling Water Level Control," did not provide adequate guidance to operators for filling the reactor cavity which resulted in the reactor building (RB) floor drains overflowing reactor cavity water in the RB.

Description: On September 14, 2010, Entergy personnel commenced the final reactor cavity flood up to allow removal of the spent fuel pool gates by equalizing the water level in the reactor cavity and spent fuel pool. OP-30A, "Refueling Water Level Control," Revision 13, directs actions which accomplish the following general steps: fill the reactor cavity to the reactor cavity weirs, continue to fill the cavity causing flow from the reactor cavity weirs to the skimmer surge tanks, fill the skimmer surge tanks until full causing a flow of water through the spent fuel pool weirs into the spent fuel pool, and continue raising the level in the spent fuel pool until the reactor cavity and spent fuel pool levels are equal.

However, Entergy's operators filled the reactor cavity at a rate greater than the flow capacity through the reactor cavity weirs which resulted in overfilling the reactor cavity to the level of the service trench weir. The service trench drains to the RB floor drain system which leads to the RB floor drain sump. In addition, the flow rate into the floor drain system exceeded the flow capacity of the RB floor drain sump pump. This flow rate beyond capacity caused the piping of the floor drain system to rapidly backfill which caused reactor cavity water (approximately several thousand gallons) to overflow onto the floors throughout elevations. This also resulted in an overflow of reactor cavity water from higher elevations down to lower elevations in the building.

The inspectors determined that this overflow of water throughout areas of the RB created a potential for water entering motors, valve operators, motor control centers, circuit breakers, and electrical junction boxes, such that electrical components could have been compromised. In particular, the condition had the potential to cause a loss of shutdown cooling due to wetting of components associated with the RHR system.

Entergy staff performed an apparent cause evaluation which determined that the overfilling of the reactor cavity to the level of the service trench weir was caused due to several conditions: inadequate operator monitoring of the reactor cavity water level, continuing to use the condensate system to fill the reactor cavity once the water level reached the reactor cavity weirs, and failing to place the 'A' condensate pump in pull-to-lock which resulted in an auto-start of the 'A' condensate pump and a more rapid overfilling of the reactor cavity. Further, Entergy staff determined that these inadequate operator actions were caused by inadequate procedures, i.e. the procedures were not balanced with task complexity or workers' skill. Specifically, OP-30A did not provide specific guidance for flood up to include direction related to fill rate, weir level, cavity/SFP level, monitoring criteria and locations, and expected effects or consequences. As a result, the operator stationed on the refuel floor did not receive clear and appropriate monitoring criteria, the hotwell level where a condensate pump auto start would be expected had not been recognized for its potential impact on the evolution, and the relative difference in flow capacity between the condensate system and the reactor cavity weirs was not recognized.

Entergy personnel entered this issue into their corrective action program (CAP), (CR-JAF-2010-05406 and CR-JAF-2010-05407) and performed several actions to ensure proper water level control prior to the next drain down of the reactor cavity. These actions included revising OP-30A to provide sufficient detail, ensuring additional detail would be included in pre-job briefings to include potential drain paths from the reactor cavity and spent fuel pool, and installing a dedicated camera to monitor reactor cavity water level.

Analysis: There was a self-revealing performance deficiency in that Entergy personnel used an inadequate procedure for filling the reactor cavity which resulted in the RB floor drains overflowing throughout the RB. This finding is more than minor because it is associated with the procedure quality attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown. Specifically, causing an overflow of water throughout areas of the RB created a potential for water entering motors, valve operators, motor control centers, circuit breakers, and electrical junction boxes, such that electrical components could have been compromised, which increased the likelihood of an event that would upset plant stability and challenge a critical safety function.

The inspectors determined the significance of the finding using IMC 0609, Appendix G, "Shutdown Operations Significance Determination Process," Phase 1. The finding was determined to be of very low safety significance because Entergy personnel maintained an adequate mitigation capability as described in checklist 7 of Attachment 1 to Appendix G and an event had not occurred that could be described as a loss of control as presented in Table 1 of Appendix G, i.e. there was not an inadvertent loss of two feet of RCS inventory nor an inadvertent reactor coolant system pressurization.

The inspectors determined this finding had a cross-cutting aspect in the area of human performance within the resources component because the procedure used for filling the reactor cavity was not sufficiently complete to assure nuclear safety (H.2(c) per IMC 0310).

Enforcement: Technical specification 5.4 requires, in part, that the applicable procedures recommended in Regulatory Guide 1.33, Appendix A, November 1972, be established, implemented, and maintained. Regulatory Guide 1.33, section D, "Procedure for Startup, Operation, and Shutdown of Safety-Related BWR Systems," specifies, in part, that instructions for filling should be prepared, as appropriate, for the shutdown cooling, fuel storage pool cooling, and condensate systems. Contrary to the above, on September 14, 2010, the instructions for filling the reactor cavity and spent fuel pool using the condensate system were not appropriately prepared. Because this violation was of very low safety significance and was entered into the CAP as CR-JAF-2010-05406 and CR-JAF-2010-05407, this violation is being treated as an NCV, consistent with the NRC Enforcement Policy. **(NCV 05000333/2010005-01: Inadequate Procedure for Refueling Water Level Control Resulted in Overflow of Reactor Cavity Water in the Reactor Building)**

.2 Failure to Maintain Equipment Status Control for a Manually Operated Normally Locked Open Residual Heat Removal Injection Valve

Introduction: A self-revealing NCV of very low safety significance of TS 5.4, "Procedures," was identified because Entergy personnel did not implement procedure AP-12.06, "Equipment Status Control," as required. Specifically, Entergy personnel did not maintain status control and properly document the position of the RHR to reactor water recirculation loop 'B' isolation valve (10RHR-81B) as closed nor did operators restore the valve to its normal locked open position upon completion of a leak surveillance test.

Description: On September 28, 2010, Entergy staff began performing leak testing of 10AOV-68B and 14AOV-13B, RHR and CS testable check valves, respectively, per ST-39J, "Leak Testing of RHR and Core Spray Testable Check Valves (IST)." During restoration from 10AOV-68B testing, the field operator contacted the LLRT supervisor to request the desired position of 10RHR-81B, because ST-39J specifies that the position of 10RHR-81B is to be directed by the shift manager (SM). The normal position for 10RHR-81B, a manually operated valve, is locked open and back-seated. The LLRT supervisor believed that he had the authority to act for the SM, contrary to EN-OP-115, "Conduct of Operations," Revision 9. Therefore, the LLRT supervisor did not contact the SM, directed the field operator to leave 10RHR-81B closed, did not log the position of the valve in the Equipment Status Log, and did not obtain review and approval for the valve's position from the Control Room Supervisor by the end of the shift. As such, the LLRT supervisor did not comply with AP-12.06 which states that any component not restored to its original position shall be entered into the Equipment Status Log and shall be reviewed and approved by the Control Room Supervisor before the end of the shift.

Therefore, from September 29, 2010, the actual status of 10RHR-81B was closed when the logged and understood position of the valve was locked open. In addition, at the time of spent fuel pool gate installation on October 3, 2010, the shutdown risk assessment specifically required both loops of RHR to be available for both the low pressure coolant injection and shutdown cooling modes. The control room personnel did

not adequately verify control panel alignment per OP-65A, "Normal Operation," and did not detect that 10RHR-81B indicated closed.

On October 4, while performing steps within ST-39H, "RPV System Leakage Test and CRD Class 2 Piping Inservice Test (ISI)," a work control senior reactor operator recognized that the control room panel indication for 10RHR-81B indicated closed. Entergy personnel entered this issue into their CAP (CR-JAF-2010-06656) and promptly restored the valve to its required locked open position.

The inspectors reviewed the circumstances surrounding the valve misposition and concluded the issue was a self revealing finding due to several factors. The determined and required shutdown risk understood by Entergy staff included the 'B' RHR subsystem being available. The logged position of 10RHR-81B was locked open. The valve's position indication was readily apparent on the control room panels and indicated closed, in contradiction to its logged position and 'B' RHR's available status. This condition was not identified during a change in mode applicability, i.e. during installation of the spent fuel pool gates and subsequent draining down of the reactor cavity, which required a verification of control room panel alignments in order to ensure compliance with TS. There were multiple opportunities for operators to identify this condition over the course of eleven shifts, with each shift containing a required control room panel walkdown, a process specifically intended to identify such issues.

Analysis: The inspectors determined there was a performance deficiency in that Entergy personnel did not maintain equipment status control of 10RHR-81B in accordance with Entergy procedure AP-12.06, "Equipment Status Control." This finding is more than minor because it is associated with the configuration control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, operators did not maintain configuration control of the RHR isolation valve and restore the valve to a locked open position when the 'B' RHR subsystem was credited for maintaining acceptable shutdown risk.

The inspectors determined the significance of this finding using IMC 0609, Appendix G, "Shutdown Operations Significance Determination Process." The issue was determined to screen as very low safety significance (Green) because the 'B' RHR train could be considered available with respect to Appendix G, Section 4.0, and Attachment 3, Section 2.2.3. Specifically, the inspectors determined that operators had more than twice the time available (with a shortest time to boil of 5.8 hours) than would have been required to identify and take action to restore/open 10RHR-81B in the event of a loss of shutdown cooling or RCS inventory.

This finding had a cross-cutting aspect in the Human Performance cross-cutting area, Work Practices component, because Entergy personnel did not define and effectively communicate expectations regarding procedural compliance, and personnel failed to follow procedures (H.4(b) per IMC 0310).

Enforcement: Technical specification 5.4.1 requires, in part, that the applicable procedures recommended in Regulatory Guide 1.33, Appendix A, November 1972, be established, implemented, and maintained. Regulatory Guide 1.33, section A, "Administrative Procedures," specifies, in part, that there be administrative procedures for equipment control (e.g., locking and tagging). Contrary to the above, from

September 9, 2010, through October 4, 2010, Entergy personnel did not adequately implement equipment control procedures such that valve 10RHR-81B was logged as locked open when it was actually closed. Because this violation was of very low safety significance and was entered into the CAP as CR-JAF-2010-06656, this violation is being treated as an NCV, consistent with the NRC Enforcement Policy. **(NCV 05000333/2010005-01: Failure to Maintain Equipment Status Control for a Manually Operated Normally Locked Open Residual Heat Removal Injection Valve)**

1R22 Surveillance Testing (71111.22 – 3 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 FitzPatrick 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-24J, "RCIC Flow Rate and Inservice Test (IST)," Revision 39;
- ST-39B-X202B/G, "Type C Leak Test of Rx Bldg to Torus Vacuum Breakers (IST)," Revision 8; and
- ST-39H, "RPV System Leakage Test and CRD Class 2 Piping Inservice Test (IST)," Revision 29.

These activities represented three surveillance testing inspection samples.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstones: Occupational Radiation Safety and Public Radiation Safety

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01 – 1 sample)

a. Inspection Scope

Inspection Planning

Entergy's performance indicators (PI) for both the Public and Occupational exposure cornerstones were reviewed for the past four quarters as well as the results of quality assurance (QA) findings and any relative operational occurrences recorded in Entergy's CAP for inspection review in applicable areas.

Contamination and Radioactive Material Control

Fourteen sealed sources were selected from Entergy's inventory records that present the greatest radiological risk. These sources were accounted for and semi-annual leak test records were reviewed indicating their integrity was maintained.

At Fitzpatrick, the sources that require tracking or reporting to the National Source Tracking System (NSTS) were verified with respect to the current inventory listed in NSTS and in accordance with 10 CFR 20.2207.

Radiological Hazards Control and Work Coverage

Two radiation work permits (RWPs) for work within potential airborne radioactivity areas with the potential for individual worker internal exposures were reviewed. These included the review of three work activities that included: line 'C' MSIV seat surface lapping, refueling cavity decontamination, and decontamination of the In-Vessel Visual Inspection (IVVI) platform tub. With respect to these work activities, the inspectors evaluated airborne radioactive controls and monitoring, including potential for significant airborne levels (e.g., grinding, system breaches, and reactor cavity hazards). For these selected airborne radioactive material areas, the airborne radioactivity barrier's (e.g., tent or glove box) integrity and temporary high-efficiency particulate air (HEPA) ventilation system operation were verified by inspectors.

Risk-Significant High Radiation Area (HRA) and Very High Radiation Area (VHRA) Controls

Controls and procedures for high-risk HRAs and VHRAs were discussed with the radiation protection manager and one first-line health physics supervisor as specified in 10 CFR 20.1602, "Control of Access to Very High Radiation Areas," and Regulatory Guide 8.38, "Control of Access to High and Very High Radiation Areas of Nuclear Plants." During refueling outage conditions, the inspectors reviewed any changes to Entergy's procedures to evaluate any substantial reduction in the effectiveness and level of worker protection. During the refueling outage the inspectors verified HRA and VHRA access controls with respect to TS requirements.

Radiation Worker Performance

During refueling outage job performance observations, the inspectors observed radiation worker performance with respect to radiation protection (RP) work requirements. The inspectors determined that workers were aware of the significant radiological conditions in their workplace and that RWP controls/limits in place and their work performance reflected the level of radiological hazards present.

Fourteen CR's involving RP were reviewed since the last inspection and these included human performance errors. The inspectors determined if there were any observable patterns traceable to a similar cause and discussed any significant unresolved corrective actions planned or taken with the RP manager and staff.

Radiation Protection Technician Proficiency

During refueling outage job performance observations, the inspectors observed the performance of the RP technicians with respect to RP work requirements. The inspectors determined that technicians were aware of the radiological conditions in their workplace and that RWP controls/limits and their job performance was consistent with their training and qualifications with respect to the radiological hazards and work activities they covered.

Fourteen CR's involving RP were reviewed since the last inspection and these included causes attributable to RP technician error. The inspectors determined if there was any observable pattern traceable to similar causes and if the associated corrective actions taken by Entergy were effective to resolve the reported problems.

b. Findings

No findings were identified.

2RS2 Occupational ALARA Planning and Controls (71124.02 – 1 sample)

a. Inspection Scope

Radiological Work Planning

The inspectors reviewed five refueling outage work activities based on highest exposure significance and projected to result in a dose of 5 person-rem or greater. These work activities included: 'A' RWR pump and motor replacement, safety relief valve maintenance, reactor reassembly, drywell in-service inspection, and IVVI.

The inspectors reviewed as low as is reasonably achievable (ALARA) work activity evaluations, exposure estimates, and exposure mitigation requirements of the selected refueling outage work activities and determined if Entergy personnel had reasonably grouped the radiological work into work activities, based on historical precedence, industry norms, and/or special circumstances. The inspectors evaluated Entergy staff's use of appropriate dose mitigation features, commensurate with the risk of the work activity, alternate mitigation features; and defined reasonable dose goals for these work activities. As applicable, the inspectors also verified that Entergy's ALARA assessment has taken into account decreased worker efficiency from use of respiratory protective devices and/or heat stress mitigation equipment (e.g., ice vests). The inspectors observed Entergy staff's use of remote technologies (such as teledosimetry and remote visual monitoring) as a means to reduce dose and reviewed the integration of ALARA requirements into work procedure and RWP documents.

Source Term Reduction and Control

Using Entergy's records, the inspectors determined there has not been a significant source term change at Fitzpatrick from the past refueling outage and that containment dose rates are close to median boiling water reactor industry values. One significant tracked plant source term system that continues to increase is the alternate decay heat removal system, which is known to contribute to elevated facility aggregate exposure.

Radiation Worker Performance

During refueling outage conditions, the inspectors observed radiation worker and RP technician performance during work activities being performed in radiation areas, airborne radioactivity areas, and HRAs. Work activities selected were based on highest exposure estimates and the potential radiological hazard risk to workers. The inspectors determined if workers demonstrated the ALARA philosophy in practice (e.g., workers are familiar with the work activity scope and tools to be used, workers use ALARA low-dose waiting areas) and whether there were any procedure compliance issues (e.g., workers are not complying with work activity controls). The inspectors also observed radiation worker performance to determine whether the training and skill level was sufficient with respect to the radiological hazards and the work involved.

Problem Identification and Resolution

The inspectors verified that problems associated with ALARA planning and controls were being identified by Entergy personnel at an appropriate threshold and were properly addressed for resolution in Entergy's CAP.

b. Findings

No findings were identified.

2RS3 In-Plant Airborne Radioactivity Control and Mitigation (71124.03 – 1 sample)

a. Inspection Scope

Inspection Planning

The inspectors reviewed the plant UFSAR to identify areas of the plant designed as potential airborne radiation areas and any associated ventilation systems or airborne monitoring instrumentation. Instrumentation includes continuous air monitors (continuous air monitors and particulate-iodine-noble-gas-type instruments) used to identify changing airborne radiological conditions such that actions to prevent an overexposure may be taken.

The inspectors reviewed Entergy's procedures for maintenance, inspection, and use of respiratory protection equipment including self-contained breathing apparatus, and procedures for air quality maintenance.

During this inspection the Occupational and Public Radiation Safety PIs for the past four quarters (through the 2nd quarter 2010) were reviewed, which included any unintended dose resulting from intakes of radioactive materials.

Engineering Controls

During refueling outage conditions, the inspectors verified that Entergy personnel used ventilation systems as part of its engineering controls (in lieu of respiratory protection devices) to control airborne radioactivity. This verification utilized procedural guidance

for use of installed plant systems, such as containment purge and spent fuel pool ventilation, and verified that the systems are used, to the extent practicable, during high-risk activities (e.g., using containment purge during cavity flood-up).

The inspectors selected, as available, two installed ventilation systems used to mitigate the potential for airborne radioactivity, and verified that ventilation airflow capacity, flow path (including the alignment of the suction and discharges), and filter/charcoal unit efficiencies are consistent with maintaining concentrations of airborne radioactivity in work areas below the concentrations of an airborne area to the extent practicable.

The inspectors evaluated three temporary ventilation system HEPA/charcoal negative pressure units used to support work in contaminated areas. The inspectors verified that the use of these systems was consistent with Entergy's procedural guidance and ALARA.

The inspectors reviewed two operational continuous air monitoring systems used during the refueling outage. The inspectors verified that alarms and setpoints were effectively set to alarm and prompt actions to ensure that doses would be maintained within the limits of 10 CFR Part 20 and ALARA.

The inspectors verified that Entergy staff effectively evaluated levels of airborne beta-emitting (e.g., plutonium-241) and alpha-emitting radionuclides to provide adequate protection of the workers.

Use of Respiratory Protection Devices

The inspectors verified that Entergy personnel provided appropriate and qualified respiratory protective devices to provide adequate protection of the worker due to internal exposure hazards. The inspectors reviewed one work activity, IVVI platform decontamination, in which respiratory protection devices were used to limit the intake of radioactive materials, and verified the adequacy of their use.

The inspectors selected three individuals assigned to wear a respiratory protection device and observed them donning, doffing, and functionally checking the device, as appropriate. The inspectors verified through direct work observation, that the workers demonstrated effective use of the device.

b. Findings

No findings were identified.

2RS4 Occupational Dose Assessment (71124.04 – 1 sample)

a. Inspection Scope

Internal Dosimetry

Routine Bioassay (in vivo)

The inspectors reviewed procedures used to assess dose from internally deposited nuclides using passive portal monitors and whole body counting equipment. The

inspectors verified that the procedures addressed methods for determining if an individual is internally or externally contaminated, the release of contaminated individuals, the determination of entry route (ingestion, inhalation), and assignment of dose.

There were no positive whole body counts during the Fall 2010 refueling outage at the time of this inspection.

The inspectors reviewed the technical basis for the use of passive portal monitoring to screen for internal exposure of workers and evaluated the minimum detectable activity of these instruments. The inspectors determined that the minimum detectable activity was adequate to determine the potential for internally deposited radionuclides sufficient to prompt additional investigation.

The inspectors reviewed the adequacy of Entergy's program for dose assessments based on airborne/derived air concentration monitoring. The inspectors verified the effective use of fixed head air samplers were adequate to ensure that appropriate lower limits of detection were obtained. The inspectors verified that Entergy's derived air concentration calculation method was representative of the actual airborne radionuclide mixture, including hard-to-detect nuclides, as appropriate.

Special Dosimetric Situations

Dosimeter Placement and Assessment of Effective Dose Equivalent for External Exposures

The inspectors reviewed Entergy's methodology for monitoring external dose in situations in which non-uniform fields or large dose gradients (e.g., torus diving activities) are expected. The inspectors verified that Entergy personnel had established and effectively implemented criteria for determining when to utilize alternate monitoring techniques (i.e., use of multi-badging and multi-teledosimetry badging). The inspectors reviewed several torus divers' dose records to assess the proper and effective use of multi-badging during the fall 2010 refueling outage, as specified in Entergy's procedures.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151 – Thirteen samples)

a. Inspection Scope

The inspectors reviewed PI data for the cornerstones listed below and used Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, to verify individual PI accuracy and completeness.

Cornerstone: Initiating Events

- Unplanned scrams;
- Unplanned power changes; and
- Unplanned scrams with complications.

The inspectors reviewed Entergy's event reports, operator logs, and PI data sheets to determine whether Entergy personnel adequately identified and reported the number of scrams and unplanned power changes greater than 20 percent that occurred from the third quarter of 2009 through the third quarter of 2010. The inspectors also verified the accuracy of the number of critical hours reported.

Cornerstone: Mitigating Systems

- Safety system functional failures;
- Mitigating systems performance index (MSPI), emergency alternating current power system;
- MSPI, high pressure injection system;
- MSPI, heat removal system;
- MSPI, RHR system; and
- MSPI, cooling water systems.

The inspectors reviewed data and plant records from the third quarter of 2009 through the third quarter of 2010. The records reviewed included PI data summary reports, licensee event reports (LER), operator narrative logs, and maintenance rule records. The inspectors also verified the accuracy of the number of critical hours reported.

Cornerstone: Barrier Integrity

- Reactor coolant system (RCS) leak rate; and
- RCS 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 RCS identified leakage and specific activity from the third quarter of 2009 through the third quarter of 2010.

Cornerstone: Occupational Radiation Safety

- Occupational Exposure Control Effectiveness

The inspectors reviewed implementation of Entergy's Occupational Exposure Control Effectiveness Performance Indicator Program. Specifically, the inspectors reviewed CRs, and radiological controlled area dosimeter exit logs for the past four calendar quarters (through 2nd quarter 2010). These records were reviewed for occurrences involving locked HRAs, VHRAs, and unplanned exposures.

Cornerstone: Public Radiation Safety

- RETS/ODCM Radiological Effluent

The inspectors reviewed a listing of relevant effluent release reports for the past four calendar quarters (through 2nd quarter 2010), for issues related to the public radiation safety PI, which measures radiological effluent release occurrences per site that exceed 1.5 mrem/qtr whole body or 5.0 mrem/qtr organ dose for liquid effluents; 5 mrads/qtr gamma air dose, 10 mrad/qtr beta air dose, and 7.5 mrads/qtr for organ dose for gaseous effluents.

The inspectors reviewed the following documents to ensure Entergy met all requirements of the PI:

- Monthly projected dose assessment results due to radioactive liquid and gaseous effluent releases;
- Quarterly projected dose assessment results due to radioactive liquid and gaseous effluent releases; and
- Dose assessment procedures.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution

.1 Review of Items Entered into the Corrective Action Program (71152)

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 FitzPatrick's CAP. The review was accomplished by accessing FitzPatrick'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, Barrier Integrity, and Public Radiation Safety cornerstones for additional follow-up and review. The inspectors assessed FitzPatrick 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.

b. Findings and Observations

No findings 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 Semiannual Review to Identify Trends (71152 – 1 sample)

The inspectors performed a semi-annual review of site issues, to identify trends that might indicate the existence of more significant safety issues, as required by Inspection Procedure 71152, "Identification and Resolution of Problems." The inspectors included

in this review, repetitive or closely-related issues that may have been documented by Entergy personnel outside of the corrective action program, such as trend reports, PIs, major equipment problem lists, system health reports, maintenance rule assessments, and maintenance or corrective action program backlogs. The inspectors also reviewed the Entergy corrective action program database for the third and fourth quarters of 2010, to assess CRs written in various subject areas (equipment problems, human performance issues, etc.), as well as individual issues identified during the NRCs daily CR review (Section 4OA2.1). The inspectors reviewed the Entergy quarterly trend report for the second quarter of 2010, conducted under EN-LI-121, "Entergy Trending Process," Revision 8, to verify that Entergy personnel were appropriately evaluating and trending adverse conditions in accordance with applicable procedures.

b. Findings and Observations

No findings 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.

The inspectors observed a potential emerging or adverse trend due to an apparent increase in the number of entries into abnormal operating procedures (AOPs) and emergency operating procedures (EOPs) during the past two quarters which had not otherwise been recognized by Entergy staff as an emerging or adverse trend. Specifically, from June 1, 2010, through December 31, 2010, the operating crews made 13 EOP entries and 33 AOP entries. As an example, in some cases a sticking level switch in a RB sump pump prevented a normal start of the pump given routine minor in-flow into the sump, resulting in a high sump level annunciator alarm and an entry into the appropriate EOP, which was then exited once the cause was determined to be a sticking level switch rather than an actual emergency condition. Although these individual circumstances all represented minor significance, this potential emerging or adverse trend could indicate increasing equipment and/or human performance issues which may have not otherwise been addressed for cumulative impacts, including unnecessary operator distractions with respect to frequent AOP and EOP entries. Entergy personnel entered this observation into the CAP as CR-JAF-2011-00086.

.3 Annual Sample: Review of Common Cause Analysis of Human Errors and Events during the Fall 2008 FitzPatrick Refueling Outage (71152 – 1 sample)

a. Inspection Scope

The inspectors reviewed Entergy's personnel's evaluation and corrective actions associated with a common cause analysis performed following refueling outage 18 (RFO 18) in Fall 2008. Entergy personnel identified 13 human performance issues (3 station events and 10 outage errors) with negative effects during RFO 18. Some of those errors resulted in NRC findings of very low safety significance as documented in NRC inspection reports 05000333/2008004 and 05000333/2008005. Subsequently, Entergy's staff conducted a common cause analysis in order to assess the associated failure modes, in aggregate, for their underlying root causes and documented corrective actions to address these root causes through 2010.

The inspectors assessed the adequacy of the information and analysis performed and the completeness of identified causes and associated corrective actions. The inspectors

also verified the completion of the associated corrective actions. Finally, the inspectors assessed the adequacy of the completed corrective actions after reviewing human performance issues identified during RFO 19 in Fall 2010. The documents reviewed are listed in the attachment to this report.

b. Findings and Observations

No findings were identified.

The inspectors identified several instances in which corrective actions had been closed documenting actions to be taken at a future time or corrective actions which did not establish a clear connection between the assigned action and the action documented in the response. However, the inspectors determined that appropriate actions had been subsequently performed in all instances. The inspectors noted additional issues associated with human performance prior to and during RFO 19. Entergy's staff also identified potential adverse trends during RFO 19 in the areas of rework and tagging errors. As such, the inspectors determined that while Entergy's corrective actions to address human performance issues from RFO 18 were appropriate, Entergy's staff continued focus on actions in the area of human performance is warranted.

.4 Annual Sample: Time Delay Relay Found Outside Technical Specifications (71152 – 1 sample)

a. Inspection Scope

The inspectors reviewed Entergy personnel's evaluation and corrective actions associated with finding the as-found time delay of relay 71-27T3-1HOEB03 (27T3) outside of allowable limits, as required by technical specifications. 27T3 functions as a time delay such that given a degraded voltage on the 4 kV AC emergency bus 10600, with or without a loss of coolant accident initiation signal, a start signal for the 'B' and 'D' EDGs will be initiated after a nominal 45 seconds. Technical specifications require this time delay to be 41.0 to 46.6 seconds. During testing and calibration on September 28, 2010, Entergy personnel determined the as-found time delay to be 40.9 seconds.

Entergy personnel performed an apparent cause and determined that a combination of two apparent causes led to exceeding TS limits: an apparent initial downward setpoint change within the first six months of service in Allen Bradley model 700-RTC timers and a likely ambient temperature difference between the initial calibration in July 2009 and the as-found testing in September 2010. Entergy personnel have scheduled an increased frequency test and calibration of 27T3 during the week of May 16, 2011, in order to confirm the identified apparent causes and proper continued operation of the timer. In particular, 27T3 and all other Allen Bradley model 700-RTC timers have now been tested and calibrated after having been in service longer than six months, addressing the apparent initial downward setpoint change.

b. Findings and Observations

No findings 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.

The inspectors noted the calibration test which revealed this relay being outside the allowed technical specification range was the first calibration of this particular relay since its installation. In addition, the inspectors noted all other relays of the same model which had been recently installed at FitzPatrick have been found within technical specification limits during calibration testing. Since there was not a prior failure of this relay, or of any similar model relay, the inspectors determined that Entergy staff's determination that the deficiency was not reportable under 10 CFR Part 50.73 was consistent with the guidance in NUREG-1022, Event Reporting Guidelines 10 CFR 50.72 and 50.73," since it should be assumed that the discrepancy occurred at the time of its discovery given the available information.

.5 Selected Issue Follow-up Inspection

a. Inspection Scope

An inspection was performed at the Entergy corporate office in Jackson, Mississippi on June 14 through 17, 2010, to review the circumstances surrounding missed quality control (QC) verification inspections documented in CR-HQN-2009-01184 and CR-HQN-2010-00013. The issue involved QC verification inspections performed during construction-related activities which were required as part of the Entergy quality oversight and verification programs. The inspection was performed to determine if the licensee had taken corrective actions commensurate with the significance of the identified issues, and to assess the impact, if any, on the operability of plant equipment caused by the missed inspections. This inspection was conducted by inspectors from Regions I, II, and IV, as well as a Senior Program Engineer from the Quality and Vendor Branch of the Office of Nuclear Reactor Regulation (NRR). The inspection covered all NRC-licensed sites owned by Entergy Operations, Inc., including Arkansas Nuclear One, James A. Fitzpatrick, Grand Gulf Nuclear Station, Indian Point Units 2 and 3, Palisades Plant, Pilgrim Nuclear Power Station, River Bend Station, Vermont Yankee, and Waterford 3.

The inspectors reviewed root cause analyses documented in CRs CR-HQN-2009-01184 and CR-HQN-2010-00013, and the results of the licensee's extent of condition reviews and plant impact assessments. The inspectors also independently assessed the potential impacts of the missed inspections on the operability of plant equipment by reviewing all of the examples identified by the licensee, and by independently reviewing completed modifications and WOs to identify additional examples. The inspectors also reviewed the corrective action database to assess reported equipment failures in order to assess whether the failure might have involved missed QC verification inspections.

The inspectors assessed causal factors that may have contributed to missing QC verification inspections. This assessment included reviewing the Entergy Quality Assurance Program Manual (QAPM) requirements, changes made to the QAPM, and the level of agreement between the QAPM and its implementing procedures.

Specific documents reviewed are listed in the attachment.

b. Findings and Observations

No findings were identified.

The inspectors identified problems with the implementation of elements of the QA Program that affected the fleet of Entergy Operations Inc., (hereafter referred to as "Entergy") nuclear power plants that are licensed by the NRC. While the plant organizations are NRC licensees, Entergy also has corporate groups which are not NRC licensees that are actively involved in some activities affecting sites, including program and procedure changes. Entergy adopted a business strategy of adopting standard programs and procedures at all fleet plants.

On October 30, 2009, the NRC discussed with Entergy the initial concerns about whether QC verification inspections were being performed consistently for the types of work that require that level of inspection. Both the non-licensed and licensed Entergy organizations responded with an appropriate review of the issues. Entergy's review of work documents that were potentially affected was extensive at each site. Entergy's total review examined over 320 engineering change documents and 2676 WOs. Of the 30 WOs identified to have QC verification inspection deficiencies affecting eight safety-related design changes, all 30 were determined by Entergy to have sufficient documentation to provide confidence that the equipment was installed correctly. Specific corrective actions were identified and implemented to ensure that QC verification inspections would be included in current and future work documents, including procedure enhancements.

The information provided to the NRC was used to perform a focused inspection in order to assess the impact of the missed verification inspections at each of the NRC-licensed facilities. The inspection documented below independently assessed the potential impact of missed QC verification inspections on the operability of plant equipment, as well as assessing details of QA Program for the Entergy fleet.

Two findings were identified during this inspection. These findings involved missed QC verification inspections at seven Entergy sites, and the assignment of individuals to the QA Manager position that did not meet the experience and qualification requirements at eight sites. However, the inspectors did not identify that these findings impacted the FitzPatrick plant.

The inspectors concluded that the Entergy fleet organizational structure and Entergy strategy of adopting standardized procedures across the fleet were contributing factors to the findings at the other Entergy sites. Specifically:

- Changes to adopt the standard fleet QA program created a partial conflict with existing requirements for worker qualifications at some sites. The process for creating and revising standardized fleet procedures and programs used to meet NRC requirements must ensure that site-specific regulatory requirements and commitments are properly addressed for all sites.

- Changes that removed details from existing site-specific QA and QC program implementing procedures while shifting to standardized fleet procedures contributed to the finding involving missed QC verification inspections. CRs at individual sites regarding problems related to this issue were not recognized collectively as symptoms of a problem with these procedures because they were addressed at the site level.

4OA5 Other Activities

.1 (Closed) Temporary Instruction 2515/179,"Verification of Licensee Responses to NRC Requirement for Inventories of Materials Tracked in the National Source Tracking System (NSTS) Pursuant to Title 10, Code of Federal Regulations, Part 20.2207 (10 CFR Part 20.2207)"

a. Inspection Scope

The inspectors verified the information listed on Entergy's inventory record by performing a physical inventory at Entergy's facility and visually identifying each item listed on Entergy's inventory. The inspectors verified the presence of the nationally tracked source(s) with an appropriate radiation survey instrument. During the physical inventory, the inspectors examined the physical condition of the shield devices containing nationally tracked source(s), and evaluated the effectiveness of Entergy's procedures for secure storage and handling of nationally tracked source(s). The inspectors also verified that appropriate leak tests had been performed and determined that the posting and labeling of nationally tracked sources were adequate.

There had been no transfers or receipts of NSTS tracked sources from Entergy's NSTS inventory since initial registration.

The inspectors reviewed the administrative information listed in the NSTS inventory for the Fitzpatrick plant to ensure that the information was up to date. This information included, but was not limited to:

- Mailing address;
- Physical or shipping address (for transmitting information via non-postal methods that cannot use a post office box);
- Telephone number, FAX number, and e-mail address for primary technical point of contact;
- Telephone number, fax number, and e-mail address for primary management point of contact; and
- The license numbers of NRC licenses that authorize the possession of nationally tracked source(s).

b. Findings

No findings were identified.

.2 TI 2515/173, Review of the Implementation of the Industry Ground Water Protection Voluntary Initiative [Previously Completed in May 2009]

The following inspection was completed in May 2009. However, it was recently identified that a portion of the inspection results (Findings and Observations section) was inadvertently omitted in the documentation of this inspection in NRC inspection report 05000333/2009003 dated August 12, 2009. Therefore, the inspection scope and results are being included in their entirety in this report.

a. Inspection Scope

On May 4 through 8, 2009, an NRC assessment was performed of Entergy's implementation of the Nuclear Energy Institute – Ground Water Protection Initiative (dated August 2007, ML072610036).

Entergy personnel have identified systems, structures, and components that contain licensed radioactive material to determine potential leak or spill mechanisms. Entergy personnel have completed an initial site characterization of geology and hydrology to determine the predominant ground water gradients and potential pathways for ground water migration from on-site locations to off-site locations. An on-site ground water monitoring program has been implemented by the station to monitor for potential licensed radioactive leakage into groundwater. The ground water monitoring results are being reported in the annual effluent and/or environmental monitoring report.

Entergy personnel have identified the appropriate local and state officials and have conducted initial briefings on Entergy's ground water protection initiative.

b. Findings and Observations

No findings were identified.

To-date Entergy personnel have completed an initial (phase I) site Hydrogeologic Assessment, performed by GZA GeoEnvironmental, Inc., (January 2007). Since completion of the study, Entergy personnel installed a series of five (5) groundwater monitoring wells in November 2007, located downgrade of the site. Well sampling and analysis began immediately after in 2007. Results of the sampling are reported in the annual effluent report.

The inspectors confirmed that FitzPatrick staff, using a phased approach, has implemented some aspects of the GPI to-date. Several gaps remain in the program including the lack of site specific procedures, an assessment of work practices as they relate to impacts on groundwater, and engineering's assessment of systems, structures and components (SSC's) requires supplementing. Entergy has performed self assessments in this area and has identified program shortfalls when compared to the GPI; an action plan has been developed to close the existing gaps by the end of 2009.

A snap-shot self assessment was performed in March 2009, with the most recent evaluation of the program being performed in April 2009 by an independent organization, GZA GeoEnvironmental, Inc. Items identified in these evaluations are captured in the site Groundwater Protection Initiative Action Plan.

In addition, Entergy is planning an NEI independent assessment and will incorporate any recommendations into the existing action plan.

Entergy personnel have captured their improvement plan action items in CR-JAF-2009-01131 and LO-HQNLO-2008-00048.

4OA6 Meetings, Including Exit

Exit Meeting Summary

The inspectors presented the results of the Selected Issue Follow-up Inspection of QA and QC issues to Mr. B. Finn and other members FitzPatrick's management on January 10, 2011. The inspectors asked FitzPatrick management whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified by FitzPatrick personnel.

The inspectors presented the inspection results to Mr. K. Bronson and other members of FitzPatrick's management at the conclusion of the inspection on January 25, 2011. The inspectors asked FitzPatrick management whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified by FitzPatrick personnel.

4OA7 Licensee-Identified Violations

The following violations of very low safety significance (Green) were identified by Entergy and are violations of NRC requirements which meet the criteria of the NRC Enforcement Policy for being dispositioned as a non-cited violation.

- TS 5.4 requires, in part, that the applicable procedures recommended in Regulatory Guide 1.33, Appendix A, November 1972, be established, implemented, and maintained. Regulatory Guide 1.33, Section D, "Procedure for Startup, Operation, and Shutdown of Safety-Related BWR Systems," specifies, in part, that instructions for draining should be prepared, as appropriate, for the shutdown cooling, fuel storage pool cooling, and condensate systems. Entergy staff identified that, contrary to the above, they had not complied with TS 5.4.1 on October 3, 2010, when Entergy personnel did not adequately implement procedure OP-30A, Attachment 2, "Checklist for Draining", step F.4.1. Specifically, upon performing additional reviews as a result of finding the 'B' RHR valve mispositioned, Entergy staff identified that the 'B' RHR auto control bypass and 'A' and 'B' CS auto actuation bypass switches had been in bypass when step F.4.1 was performed, which through verifying compliance with various technical specifications, required the verification that two low pressure emergency core cooling systems be operable prior to installing the spent fuel pool gates. However, with the three switches placed in bypass, only one emergency core cooling system, 'A' RHR, was operable. Entergy personnel documented this condition in CR-JAF-2010-06659.

  The inspectors determined the significance of this finding using IMC 0609, Appendix G, "Shutdown Operations Significance Determination Process." The issue was determined to screen as very low safety significance (Green) because the 'B' RHR and 'A' and 'B' CS subsystems could be considered available with respect to Appendix G, Section 4.0, and Attachment 3, Section 2.2.3. Specifically, the inspectors determined that operators had more than twice the time available than would have been required to identify and take action to restore an additional injection source given an inadvertent RCS inventory loss.

- 10 CFR 50, Appendix B, Criterion II, "Quality Assurance Program," requires, in part, that the licensee establish a quality assurance program which complies with Appendix B.

This program shall be documented by written policies, procedures, or instructions and shall be carried out throughout plant life in accordance with those policies, procedures, or instructions. Procedure EN-QV-111, "Training and Certification of Inspection/Verification and Examination Personnel," Section 4.0 [4](i), requires that the Entergy corporate ANSI Level III inspector shall perform periodic (annual) surveillances of quality control inspection activities to ensure that the program is being adequately implemented and maintained. Contrary to the above, no surveillances of quality control inspection activities were performed for any Entergy site during calendar year 2008.

The issue was not suitable for quantitative significance determination, so it was assessed using IMC 0609, Appendix M, and evaluated using the qualitative criteria listed in Table 4.1. This finding was determined to be of very low safety significance because other quality assurance program functions remained unaffected by this performance deficiency, so defense-in-depth continued to exist. This issue was entered into Entergy's CAP as CR-HQN-2009-00111.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Entergy Personnel

K. Bronson, Site Vice President
B. Sullivan, General Manager, Plant Operations
M. Woodby, Director, Engineering
B. Finn, Director, Nuclear Safety Assurance
C. Adner, Manager, Operations
J. LaPlante, Manager, Security
J. Barnes, Manager, Training and Development
T. Raymond, Manager, Project Management
M. Reno, Manager, Maintenance
C. Brown, Manager, Quality Assurance, Entergy
P. Cullinan, Manager, Emergency Preparedness
V. Bacanskas, Manager, Design Engineering
D. Poulin, Manager, System Engineering
P. Scanlon, Manager, Programs and Components Engineering
J. Pechacek, Manager, Licensing
D. Perry, Manager, Radiation Protection
E. Wolf, Manager, Radiation Protection
D. Jacobs, Echelon Sr. Vice President of Planning, Development and Oversight
T. Palmisano, Echelon Vice President of Oversight
T. Tankersly, Echelon Director of Oversight
E. Harris, Echelon, QA Manager
B. Ford, Echelon Sr. Manager, Nuclear Safety and Licensing
J. Dent, Echelon General Manager Plant operations, Fleet Operations Support
P. Morris, Echelon Manager of Administrative Services
R. Byrd, Echelon Sr. Staff Engineer
S. Beagles, Echelon Manager of Fleet Operations
J. Abisamra, Echelon Chief Engineer
J. McCann, White Plains Vice President of Nuclear safety, Emergency Preparedness, and Licensing
E. Weinkam, White Plains Sr. Manager of Nuclear Safety and Licensing

LIST OF ITEMS OPEN, CLOSED, AND DISCUSSED

Opened and Closed

05000333/2010005-01	NCV	Inadequate Procedure for Refueling Water Level Control Resulted in Overflowing of Reactor Cavity Water in the Reactor Building (Section 1R20)

05000333/2010005-02	NCV	Failure to Maintain Equipment Status Control for a Manually Operated Normally Locked Open Residual Heat Removal Injection Valve (Section 1R20)

Closed

None

Discussed

None

LIST OF DOCUMENTS REVIEWED

Section 1RO1: Adverse Weather Protection

Procedures:
AP-12.04, "Seasonal Weather Preparations," Revision 18
OP-33, "Fire Protection," Revision 33
OP-52, "Turbine Building Ventilation," Revision 19

Documents:
WO 52217273

Condition Reports:

CR-JAF-2008-04329	CR-JAF-2009-04143	CR-JAF-2010-08157
CR-JAF-2008-04330	CR-JAF-2009-04521	CR-JAF-2010-08161
CR-JAF-2008-04460	CR-JAF-2010-00255	
CR-JAF-2009-04102	CR-JAF-2010-07811	

Section 1RO4: Equipment Alignment

Procedures:
OP-22, "Diesel Generator Emergency Power," Revision 57
OP-2A, "Feedwater System," Revision 65
OP-33, "Fire Protection," Revision 53
OP-14, "Core Spray System," Revision 33
TOP-380, "ECCS Venting Per GL2008-01," Revision 1

Documents:
DWG No. FM23A, Flow Diagram Core Spray System 14," Revision 49
JAF-RPT-CSP, "Maintenance Rule Basis Document System 14 Core Spray System," Revision 6
System Health Report, "14 Core Spray, 2nd Qtr 2010," Revision 0
System Health Report, "14 Core Spray, 3rd Qtr 2010," Revision 0

Condition Reports:

CR-JAF-2008-03577	CR-JAF-2010-01595	CR-JAF-2010-06659
CR-JAF-2009-02219	CR-JAF-2010-02746	CR-JAF-2010-06915
CR-JAF-2010-00265	CR-JAF-2010-04408	CR-JAF-2010-07583
CR-JAF-2010-01188	CR-JAF-2010-05067	

Section 1RO5: Fire Protection

PFP-PWR14, "Crescent Area-east/Elev. 227', 242, Fire Area/Zone XVII/RB-1E," Revision 3
PFP-PWR27, "Reactor Building/Elev. 344', Fire Area/Zone IX/RB-1A," Revision 3
PFP-PWR25, "Reactor Building-west/Elev. 300', Fire Area/Zone X/RB-1B, VII/RB-1C," Revision 3
PFP-PWR21, "Reactor Building-West/Elev. 272', Fire Area/Zone X/RB-1," Revision 4
PFP-PWR24, "Reactor Building-east/Elev. 300', Fire Area/Zone IX/RB-1A, VIII/RB-1C," Revision 4
PFP-PWR20, "Reactor Building-East/Elev. 272', Fire Area/Zone IX/RB-1A," Revision 4
PFP-PWR48, "Turbine Building/Elev. 300', Fire Area/Zone IE/TB-1," Revision 1
PFP-PWR01, "East Cable Tunnel/Elev. 258', Fire Area/Zone II/CT-2," Revision 3
PFP-PWR02, "West Cable Tunnel/Elev. 258', Fire Area/Zone IC/CT-1," Revision 4
PFP-PWR11, "Cable Spreading Room/Elev. 272', Fire Area/Zone VII/CS-1," Revision 2
PFP-PWR15, "Crescent Area-west/Elev. 227', Fire Area/Zone XVIII/RB-1W," Revision 3

Section 1R07: Heat Sink Performance

EN-CS-S-008-MULTI, "Pipe Wall Thinning Structural Evaluation," Revision 0
JAF-CALC-06-00004, "Evaluation of Wall Thinning of Tubes in 93WE-1B," Revision 0
PD041075, "Record of Eddy Current Inspection of 93WE-1B at J.A. FitzPatrick Nuclear Power Plant Entergy Nuclear Northeast Scriba, NY," May 2009
System Health Report, Heat Exchangers (GL89-13 and Critical BOP), 3rd Quarter 2010
WO 51651285

CR-JAF-2008-00781	CR-JAF-2009-01630	CR-JAF-2010-04828

Section 1R11: Licensed Operator Requalification Program

EN-LI-102, "Corrective Action Process," Revision 15
Evaluation 2010D, Revision 1

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

Documents:
JAF-RPT-PRM-02286, "Maintenance Rule Basis Document for System 17 Process Radiation Monitoring System," Revision 8

LO-JAFLO-2008-00028, "10 CFR Part 50.65 (a)(3) Periodic Assessment November 2007 to October 2009," Revision 0
"Maintenance Rule Quarterly Report," 2nd Quarter 2010
System Health Report, 17 Process Rad Monitors, 1st Half 2010
WO 00150238
WO 00238318

Condition Reports:

CR-JAF-2008-00602	CR-JAF-2009-00860	CR-JAF-2009-02521
CR-JAF-2008-01742	CR-JAF-2009-01290	CR-JAF-2009-02644
CR-JAF-2008-01852	CR-JAF-2009-02020	CR-JAF-2009-03075
CR-JAF-2008-03119	CR-JAF-2009-02388	CR-JAF-2009-03344
CR-JAF-2008-04141	CR-JAF-2009-02448	CR-JAF-2010-02704

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

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

Section 1R15: Operability Evaluations

Procedures:
AP-12.06, "Equipment Status Control," Revision 20
ESP-68.001, "Leak Rate Test of ADS Pneumatic Supply Check Valves," Revision 2
MP-059.51, "Limitorque Actuators Inspection and Lubrication," Revision 34
MP-059.87, "Viper MOV Diagnostic Testing," Revision 11
OP-15, "High Pressure Coolant Injection," Revision 2
OP-37, "Containment Atmosphere Dilution System," Revision 77
ST-22D, "Nitrogen Instrument Header Integrity Test," Revision 14

Documents:
DWG 1.61-140, "Elementary Diagram HPCI System," Sheet 1, Revision T
DWG 1.61-142, "Elementary Diagram HPCI System," Sheet 3, Revision N
DWG 1.61-143, "Elementary Diagram HPCI System," Sheet 4, Revision N
DWG 1.61-144, "Elementary Diagram HPCI System," Sheet 5, Revision E
FM-18B, "Flow Diagram Drywell Inerting C.A.D. Purge and Containment Differential Pressurization System 27," Revision 39
WO 52218325

Condition Reports:

CR-JAF-2010-05683	CR-JAF-2010-06730	CR-JAF-2010-06801
CR-JAF-2010-06104	CR-JAF-2010-06800	CR-JAF-2010-07044

Section 1R18: Plant Modifications

Procedures:
EN-DC-136, "Temporary Modifications," Revision 5
EN-DC-161, "Control of Combustibles," Revision 4
EN-LI-101, "10 CFR Part 50.59 Evaluations," Revision 7

Documents:
DBD-071 TAB 1, "Design Basis Document for the Electrical Distribution Systems 4160V and 600V AC Power Systems," Revision 2
DWG FE-1S, "600V One Line Diag-SH. 8; 71MCC-151, 152, 161 & 162," Revision 44
DWG FM-25A, "Flow Diagram High Pressure Coolant Injection System 23," Revision 71

EC-17147, "Install a temporary test valve on 23HOV-1 Balance Chamber Pressure Port," Revision 1
EC-20099, "Provide R19 Temporary Power during the L13 Bus outage for 88CR-5," Revision 0
QR-04811692-1, "Qualification Report for NLI Inverter Assembly P?N NLI-INV250-125-117F," Revision 0
WO 00254621

Condition Reports:
CR-JAF-2010-06927
CR-JAF-2010-08114

Section 1R19: Post Maintenance Testing

Procedures:
AP-05.07, "Post-Maintenance Testing (ISI)," Revision 41
EN-WM-107, "Post Maintenance Testing," Revision 2
IS-S-02, "Installation and Inspection of Concrete Expansion Anchors," Revision 21
MP-059.39, "Limitorque Motor Operator Model SB/SMB-000 Corrective and Overhaul Maintenance Requirements," Revision 27
MP-059.40, "Limitorque Motor Operator Model SB/SMB-00 Corrective and Overhaul Maintenance Requirements," Revision 25
OP-14, "Core Spray System," Revision 33
OSP-1.003, "Flushing 29AOV-90C Inboard MSIV for LLRT," Revision 0
ST-1B, "MSIV Fast Closure Test (IST)," Revision 25
ST-3MA, "Core Spray Testable Check Valve 14AOV-13B Testing (IST)," Revision 2
ST-3MB, "Core Spray Testable Check Valve 14AOV-13B Testing (IST)," Revision 2
ST-16GA, "A LPCI MOV Independent Power Supply Monthly Test," Revision 1
ST-22D, "Nitrogen Instrument Header Integrity Test," Revision 14
ST-39B, "Type B and C LLRT of Containment Penetrations (IST)," Revision 33
ST-39B-X7C, "Type C Leak Test Main Steam Line C MSIVs (IST)," Revision 13
ST-39B-X26A/B, "Type C Leak Test of Drywell Purge Exhaust and Atmospheric Sampling Lines Valves (IST)," Revision 10
ST-39J, "Leak Testing of RHR and Core Spray Testable Check Valves (IST)," Revision 16

Documents:
DWG FM-23A, "Flow Diagram Core Spray System 14," Revision 49
DWG FM-29A, "Flow Diagram Main Steam System 29," Sheet 1 of 1, Revision 56
EC 4325, "Install External Grease Relief Bypass on Selected JAF Limitorque Actuators," Revision 0
ST-39B-X26A/B-101004-51687875
ST-39B-X26A/B-101004-51100823
System Health Report, 14 Core Spray, 2nd Qtr 2010, Revision 0
System Health Report, 29 Main Steam, 2nd Qtr 2010, Revision 0

Work Orders:

WO 00165374	WO 00251482	WO 51686748
WO 00216575	WO 51100823	WO 51687875
WO 00250875	WO 51105487	WO 51694425

Condition Reports:

CR-JAF-2010-05544	CR-JAF-2010-06279	CR-JAF-2010-06384
CR-JAF-2010-05895	CR-JAF-2010-06287	CR-JAF-2010-06448
CR-JAF-2010-05953	CR-JAF-2010-06311	CR-JAF-2010-06458
CR-JAF-2010-05976	CR-JAF-2010-06383	CR-JAF-2010-07470

Section 1R20: Refueling and Other Outage Activities

Procedures:
AP-10.09, "Outage Risk Assessment," Revision 28
EN-OM-123, "Fatigue Management Program," Revision 2
EN-OP-115, "Conduct of Operations," Revision 9
ODSO-17, "Operator Plant Tour and Operating Logs," Revision 79
OSP-66.001, "Management of Refueling Activities," Revision 1
OP-2A, "Feedwater System," Revision 65
OP-10, "Moisture Separator Reheater Drain System," Revision 25
OP-30A, "Refueling Water Level Control," Revision 13
OP-65, "Startup and Shutdown Procedure," Revision 111
OP-65A, "Normal Operation," Revision 10
OP-65B, "Shutdown Operation," Revision 3
ST-1C, "Primary Containment Isolation Valve Exercise Test (IST)," Revision 53
ST-41D, "Remote Valve Position Indication Verification Online (IST)," Revision 17

Documents:
R19 Risk Assessment, Revision 1, September 1, 2010

Work Orders

WO 00252180	WO 00252933	WO 00254621
WO 00252358	WO 00253525	

Condition Reports:

CR-JAF-2010-06391	CR-JAF-2010-06656	CR-JAF-2010-06659

Section 1R22: Surveillance Testing

ST-24J-101013-51691074
ST-39B-X202B/G-101006-51691250
ST-39B-X202B/G-101011-00252325
ST-39H-101010-51691725
WO 00252325

Section 2RS1, 2RS2, 2RS3, 2RS4: Radiation Safety

EN-RP-101, "Access Control for Radiological Controlled Areas," Revision 5
EN-RP-105, "Radiation Work Permits," Revision 8
EN-RP-106, "Radiological Survey Documentation," Revision 2
EN-RP-110, "ALARA Program," Revision 7
EN-RP-141, "Job Coverage," Revision 5
EN-RP-141-01, "Job Coverage Using Remote Monitoring Technology," Revision 2
EN-RP-151, "Radiological Diving," Revision 2

EN-RP-402, "DOP Challenge Testing of HEPA Vacuums and Portable Ventilation Units," Revision 4
EN-RP-404, "Operation and Maintenance of HEPA Vacuum Cleaners and HEPA Ventilation Units," Revision 3
EN-RP-501, "Respiratory Protection Program," Revision 4
EN-RP-502, "Inspection and Maintenance of Respiratory Protection Equipment," Revision 5
EN-RP-503, "Selection, Issue and Use of Respiratory Protection Equipment," Revision 5
Quality Assurance Audit Report No. QA-14/15-2009-JAF-1
RP-OPS-03.07, "Radiological Coverage for Diving," Revision 3

Section 4OA1: Performance Indicator (PI) Verification

EN-EP-201, "Performance Indicators," Revision 10
Performance Indicator Data, 4th Quarter 2009 – 3rd quarter 2010
CR-JAF-2010-00798 CR-JAF-2010-02615 CR-JAF-2010-04073

Section 4OA2: Identification and Resolution of Problems

Procedures:
ARP 09-8-4-17, "4160V Bus 10600 Degraded Voltage Timer Initiated," Revision 7
EN-HU-101, "Human Performance Program," Revision 7
EN-HU-103, "Human Performance Error Reviews," Revision 2
EN-LI-102, "Corrective Action Process," Revision 16

Documents:
JAF-CALC-09-00002, "4KV Emergency Bus Degraded Voltage Time Delay Relay Uncertainty and Set-point Calculation," Revision 1
QS-2010-JAF-006, "Roll-up Review of Oversight Observations of Shift Radiation Protection Technician Activities"

Condition Reports:

CR-JAF-2008-00214	CR-JAF-2010-04408	CR-JAF-2010-06362
CR-JAF-2008-00762	CR-JAF-2010-04411	CR-JAF-2010-06384
CR-JAF-2008-01126	CR-JAF-2010-04434	CR-JAF-2010-06402
CR-JAF-2008-01141	CR-JAF-2010-04435	CR-JAF-2010-06408
CR-JAF-2008-01859	CR-JAF-2010-04495	CR-JAF-2010-06436
CR-JAF-2008-02065	CR-JAF-2010-04495	CR-JAF-2010-06481
CR-JAF-2008-02491	CR-JAF-2010-04601	CR-JAF-2010-06568
CR-JAF-2008-02589	CR-JAF-2010-04618	CR-JAF-2010-06754
CR-JAF-2008-02649	CR-JAF-2010-04797	CR-JAF-2010-06770
CR-JAF-2008-02929	CR-JAF-2010-04907	CR-JAF-2010-06800
CR-JAF-2008-03427	CR-JAF-2010-04922	CR-JAF-2010-06801
CR-JAF-2008-03668	CR-JAF-2010-05057	CR-JAF-2010-06817
CR-JAF-2008-03892	CR-JAF-2010-05082	CR-JAF-2010-06880
CR-JAF-2008-03946	CR-JAF-2010-05186	CR-JAF-2010-06910
CR-JAF-2008-03998	CR-JAF-2010-05245	CR-JAF-2010-07131
CR-JAF-2008-04440	CR-JAF-2010-05306	CR-JAF-2010-07181
CR-JAF-2009-01544	CR-JAF-2010-05336	CR-JAF-2010-07209
CR-JAF-2009-03192	CR-JAF-2010-05413	CR-JAF-2010-07213
CR-JAF-2010-00275	CR-JAF-2010-05496	CR-JAF-2010-07474
CR-JAF-2010-00588	CR-JAF-2010-05527	CR-JAF-2010-07573
CR-JAF-2010-00693	CR-JAF-2010-05601	CR-JAF-2010-07641
CR-JAF-2010-01592	CR-JAF-2010-05671	CR-JAF-2010-07732
CR-JAF-2010-01944	CR-JAF-2010-05671	CR-JAF-2010-07782
CR-JAF-2010-02028	CR-JAF-2010-05683	CR-JAF-2010-07863
CR-JAF-2010-02353	CR-JAF-2010-05705	CR-JAF-2010-07904
CR-JAF-2010-02442	CR-JAF-2010-05911	CR-JAF-2010-07931
CR-JAF-2010-02727	CR-JAF-2010-05936	CR-JAF-2010-08011
CR-JAF-2010-03437	CR-JAF-2010-05978	CR-JAF-2010-08028
CR-JAF-2010-03804	CR-JAF-2010-05997	CR-JAF-2010-08051
CR-JAF-2010-03847	CR-JAF-2010-06010	CR-JAF-2010-08058
CR-JAF-2010-03895	CR-JAF-2010-06134	CR-JAF-2010-08098
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LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
ALARA	as low as is reasonably achievable
ANSI	American National Standards Institute
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
HEPA	high efficiency particulate air
HPCI	high pressure coolant injection
HRA	high radiation area
IMC	inspection manual chapter
IST	inservice test
IVVI	in-vessel visual inspection
JAF	James A. FitzPatrick
kV	kilovolt
LER	licensee event report
LLRT	local leak rate testing
MG	motor generator
MSIV	main steam isolation valve
MSPI	mitigating systems performance index
NCV	non-cited violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
NSTS	national source tracking system
PARS	Publicly Available Record
PI	performance indicator
PMT	post-maintenance testing
QA	quality assurance
QC	quality control
QAPM	quality assurance program manual
R18	refueling outage 18
R19	refueling outage 19
RB	reactor building
RCIC	reactor core isolation cooling
RCS	reactor coolant system
RHR	residual heat removal
RP	radiation protection
RWP	radiation work permit
RWR	reactor water recirculation
SDP	significance determination process

SM	shift manager
SSC	structures, systems, or components
ST	surveillance test
TB	turbine building
TS	technical specification
UFSAR	updated final safety analysis report
UPS	uninterruptible power supply
VHRA	very high radiation area
WO	work order