



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I**  
2100 RENAISSANCE BOULEVARD, SUITE 100  
KING OF PRUSSIA, PENNSYLVANIA 19406-2713

February 7, 2013

Mr. Michael J. Colomb  
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 05000333/2012005**

Dear Mr. Colomb:

On December 31, 2012, 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 18, 2013, with you and 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.

The report documents two findings of very low safety significance (Green). These findings were also determined to involve violations of NRC requirements. However, because of the very low safety significance and because they are entered into your corrective action program, the NRC is treating these findings as non-cited violations (NCVs) consistent with Section 2.3.2 of the NRC Enforcement Policy. If you contest any NCVs in this report, you should provide a response within 30 days of the date of the inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement; United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Senior Resident Inspector at FitzPatrick. In addition, if you disagree with the cross-cutting aspect assigned any finding in this report; you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region I, and the NRC 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, its enclosure, and your response (if any) will be available electronically for public inspection in the

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Sincerely,

***/RA/***

Arthur L. Burritt, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000333/2012005  
w/Attachment: Supplementary Information

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**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION I**

Docket No.: 50-333

License No.: DPR-59

Report No.: 05000333/2012005

Licensee: Entergy Nuclear Northeast (Entergy)

Facility: James A. FitzPatrick Nuclear Power Plant

Location: Scriba, New York

Dates: October 1 through December 31, 2012

Inspectors: E. Knutson, Senior Resident Inspector  
B. Sienel, Resident Inspector  
R. Barkley, Senior Project Engineer  
B. Bickett, Senior Project Engineer  
G. Meyer, Senior Reactor Inspector  
S. McCarver, Project Engineer  
R. Rolph, Health Physicist

Approved by: Arthur L. Burritt, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

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## SUMMARY OF FINDINGS

IR 05000333/2012005; 10/01/2012 - 12/31/2012; James A. FitzPatrick Nuclear Power Plant (FitzPatrick); Follow-Up of Events.

The report covered a three-month period of inspection by resident inspectors and announced inspections performed by regional inspectors. Inspectors identified two findings of very low safety significance (Green), which were also non-cited violations (NCVs). 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 Cross-Cutting Areas." Findings for which the SDP does not apply may be Green, or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

### Cornerstone: Initiating Events

- Green. The inspectors identified a self-revealing, Green non-cited violation (NCV) of Technical Specification (TS) 5.4, "Procedures," because FitzPatrick personnel did not perform installation of replacement reserve station service transformers (RSSTs) 71T-2 and 71T-3 in accordance with written procedures. Specifically, station personnel did not remove the shorting bars from the current transformer (CT) circuits, as specified by the work instructions, which impacted trip set points for the transformer differential current protection relays. As a result, the 71T-3 differential protection circuitry actuated after the start of a major electrical load when it was not required, which caused a transformer lockout and loss of offsite power. As immediate corrective action, operators reestablished station power from the normal station service transformer via the 345 kilovolt (KV) back feed and secured the emergency diesel generators (EDGs). The issue was entered into the corrective action program (CAP) as condition report (CR)-JAF-2012-06866.

The finding was more than minor because it affected the equipment performance attribute of the Initiating Events cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors evaluated the finding in accordance with IMC 0609, Appendix G, "Shutdown Operations Significance Determination Process." Per Attachment 1, "Shutdown Operations Significance Determination Process Phase 1 Operational Checklists for both PWRs and BWRs," Checklist 7, "BWR Refueling Operation with RCS Level > 23'," the issue constituted a finding because, after the event, FitzPatrick did not have one operable qualified circuit between the offsite transmission network and the onsite 1E AC electrical power distribution subsystems. Also, per Checklist 7, this was not a finding requiring phase 2 or phase 3 analysis, nor did it constitute a loss of control event per Appendix G, Table 1. Therefore, the finding screened as very low safety significance (Green).

This finding had a cross-cutting aspect in the area of Human Performance, Resources, because Entergy staff did not provide an accurate and up-to-date work package for installation of the RSSTs, in that the package did not include a drawing of the CT shorting terminal configured with the shorting bar removed, nor did they ensure that the work package was appropriately updated with clarifying information after workers questioned the existing instructions [H.2(c)]. (Section 40A3)

### Cornerstone: Mitigating Systems

- Green. The inspectors identified a self-revealing, Green non-cited violation (NCV) of Technical Specification (TS) 5.4, "Procedures," because Entergy did not establish and implement an adequate procedure for installation of a 4160 volt alternating current (VAC) circuit breaker. Specifically, FitzPatrick's procedure for 4160 VAC circuit breaker installation did not provide sufficient guidance to station personnel to preclude physical misalignment of the 'A' emergency diesel generator (EDG) output breaker which occurred during installation on September 15, 2011, and resulted in failure of the breaker to close when required following a loss of offsite power on October 5, 2012. As immediate corrective action, the 'A' EDG output breaker was racked out, re-aligned in the cubicle, and racked back in such that it was no longer misaligned and was flush with the front of the cubicle. An instrumented test of the 'A' and 'C' EDGs was performed and all breakers operated correctly. The issue was entered into the corrective action program (CAP) as condition report (CR)-JAF-2012-06868.

The finding was more than minor because it affected the equipment performance attribute of the Mitigating Systems cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the reliability of Division 1 EDG automatic operation was degraded for approximately one year due to the 'A' EDG breaker misalignment issue. Although the issue was identified while the plant was shut down, the inspectors determined that it was appropriate to evaluate the condition in accordance with the at-power SDP because the condition existed for the previous year. In accordance with Inspection Manual Chapter (IMC) 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," the inspectors determined that the finding was of very low safety significance because the finding was not a design qualification deficiency resulting in a loss of functionality or operability, did not represent an actual loss of safety function of a system or train of equipment, and was not potentially risk significant due to external initiating events. Specifically, the 'A' EDG breaker continued to perform its safety function as evidenced by monthly surveillance tests until the misalignment condition ultimately impacted its ability to close subsequent to October 3, 2012 testing.

The finding had a cross-cutting aspect in the area of Human Performance, Resources, because FitzPatrick personnel did not ensure that a complete, accurate and up-to-date procedure was available for 4160 VAC circuit breaker installation. Specifically, procedure did not include steps to ensure correct alignment during breaker racking and to verify flush alignment [H.2(c)]. (Section 4OA3)

## REPORT DETAILS

### Summary of Plant Status

The James A. FitzPatrick Nuclear Power Plant (FitzPatrick) began the inspection period shut down for refueling outage 20 (R20). On October 17, 2012, operators performed a reactor startup and reached 100 percent power on October 22. On October 23, operators reduced power to 65 percent to conduct a planned control rod pattern adjustment, and restored power to 100 percent later that day. On November 4, an uncomplicated reactor scram occurred due to an equipment problem associated with the main turbine control system. Entergy staff corrected the problem and operators performed a reactor startup on November 7. On November 9, during power ascension with reactor power at approximately 90 percent, operators reduced power to 50 percent to address main condenser tube leakage conditions. Following identification and repair, operators restored reactor power to 100 percent the following day. On November 11, an uncomplicated scram occurred due to a fire in one of the two main transformers. Following transformer replacement, operators performed a reactor startup on November 24 and reached 100 percent power on November 27. On December 2 and December 17, operators reduced power to 75 percent to flush the main condenser water boxes due to condenser fouling. On both occasions, operators restored reactor power to 100 percent the following day. On December 21, operators reduced power to 50 percent to address main condenser tube leakage. Following identification and repair, operators restored reactor power to 100 percent the following day and remained at or near 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 (711111.01 - 3 samples)

.1 Readiness for Seasonal Extreme Weather Conditions

a. Inspection Scope

The inspectors performed a review of FitzPatrick's readiness for the onset of seasonal low temperatures. The review focused on the reactor building ventilation system, the emergency diesel generators (EDGs), and the EDG room ventilation systems. The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR), Technical Specifications (TSs), control room logs, and the corrective action program (CAP) to determine what temperatures or other seasonal weather could challenge these systems, and to ensure FitzPatrick personnel had adequately prepared for these challenges. The inspectors reviewed station procedures, including FitzPatrick's seasonal weather preparation procedure and applicable operating procedures. The inspectors performed walkdowns of the selected systems to ensure station personnel identified issues that could challenge the operability of the systems during cold weather conditions. Documents reviewed for each section of this inspection report are listed in the Attachment.

b. Findings

No findings were identified.

.2 Readiness for Impending Extreme Weather Conditions

a. Inspection Scope

On October 29, 2012, the inspectors reviewed FitzPatrick's preparations for arrival of the remnant of Hurricane Sandy. FitzPatrick operators entered AOP-13, "High Winds, Hurricanes and Tornadoes." The inspectors verified that the actions required by this procedure were taken and walked down the plant exterior to identify loose or inadequately protected equipment and materials. The plant did not experience any significant operational issues as a result of the storm's passage.

On November 24, 2012, the inspectors reviewed FitzPatrick's preparations for high winds during the reactor startup from the November 11 forced outage. The inspectors walked down exterior portions of the plant to verify that materials and equipment associated with the main transformer replacement project were adequately secured. The inspectors verified that the circulating water system was operated in accordance with procedural requirements for high wind conditions. The plant did not experience any significant operational issues as a result of high winds during the plant startup.

b. Findings

No findings were identified.

1R04 Equipment Alignment

.1 Partial System Walkdowns (71111.04Q - 4 samples)

a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

- 'A' standby gas treatment (SGT) during 'B' SGT maintenance on October 25, 2012
- 'B' main station battery following battery replacement during the refueling outage on November 1, 2012
- 'B' EDG due to increased risk significance during the forced outage that followed the main transformer fire on November 15, 2012
- 'B' emergency service water (ESW) during 'A' ESW maintenance on December 13, 2012

The inspectors selected these systems based on their risk-significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors reviewed applicable operating procedures, system diagrams, the UFSAR, TSs, condition reports (CRs), and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have impacted system performance of their intended safety functions. The inspectors performed field walkdowns of accessible portions of the systems to verify system components and support equipment were aligned correctly and were operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no deficiencies. The inspectors also reviewed whether Entergy staff had properly

identified equipment issues and entered them into the CAP for resolution with the appropriate significance characterization.

b. Findings

No findings were identified.

1R05 Fire Protection

.1 Resident Inspector Quarterly Walkdowns (71111.05Q - 5 samples)

a. Inspection Scope

The inspectors conducted tours of the areas listed below to assess the material condition and operational status of fire protection features. The inspectors verified that FitzPatrick personnel controlled combustible materials and ignition sources in accordance with administrative procedures. The inspectors verified that fire protection and suppression equipment was available for use as specified in the area pre-fire plan, and passive fire barriers were maintained in good material condition. The inspectors also verified that station personnel implemented compensatory measures for out of service, degraded, or inoperable fire protection equipment, as applicable, in accordance with procedures.

- North EDG spaces 272 foot elevation, fire area/zones VI/EG-3, EG-4, EG-6, on November 9, 2012
- Reactor building 369 foot elevation, fire area/zone IX/RB-1A , on December 12, 2012
- 'A' battery room, charger room, and corridor, fire areas/zones III/BR-1 and -2, and XVI/BR-5, on December 19, 2012
- 'B' battery and charger rooms, fire areas/zones IV/BR-3 and -4, on December 19, 2012
- Cable spreading room, fire area/zone VII/CS-1, on December 19, 2012

b. Findings

No findings were identified.

.2 Fire Protection - Drill Observation (71111.05A - 1 sample)

a. Inspection Scope

The inspectors observed an unannounced fire brigade drill conducted on December 12, 2012, that involved a fire in the reactor water recirculation motor generator set room in the reactor building. The inspectors evaluated the readiness of the plant fire brigade to fight fires. The inspectors verified that FitzPatrick personnel identified deficiencies, openly discussed them in a self-critical manner at the debrief, and took appropriate corrective actions as required. The inspectors evaluated specific attributes as follows:

- Proper wearing of turnout gear and self-contained breathing apparatus
- Proper use and layout of fire hoses
- Employment of appropriate fire-fighting techniques

- Sufficient fire-fighting equipment brought to the scene
- Effectiveness of command and control
- Search for victims and propagation of the fire into other plant areas
- Smoke removal operations
- Utilization of pre-planned strategies
- Adherence to the pre-planned drill scenario
- Drill objectives met

The inspectors also evaluated the fire brigade's actions to determine whether these actions were in accordance with FitzPatrick's fire-fighting strategies.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program

.1 Quarterly Review of Licensed Operator Requalification Testing and Training  
(71111.11Q - 1 sample)

a. Inspection Scope

The inspectors observed licensed operator simulator training on November 13, 2012, which included a recirculating water pump trip and seal failure and a reactor feedwater pump trip with recirculating water pump runback, and high pressure coolant injection (HPCI) and reactor core isolation cooling (RCIC) system failures. The inspectors evaluated operator performance during the simulated event and verified completion of risk significant operator actions, including the use of abnormal and emergency operating procedures. The inspectors assessed the clarity and effectiveness of communications, implementation of actions in response to alarms and degrading plant conditions, and the oversight and direction provided by the control room supervisor. Additionally, the inspectors assessed the ability of the crew and training staff to identify and document crew performance problems.

b. Findings

No findings were identified.

.2 Quarterly Review of Licensed Operator Performance in the Main Control Room  
(71111.11Q - 1 sample)

a. Inspection Scope

On October 17, 2012, the inspectors observed control room operators during the reactor startup following R20. Portions of the reactor startup, including the approach to and achievement of criticality, and heatup, were observed. The inspectors observed crew performance to verify that procedure use, crew communications, and coordination of activities between work groups met established expectations and standards.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q - 2 samples)a. Inspection Scope

The inspectors reviewed the samples listed below to assess the effectiveness of maintenance activities on structure, system, or component (SSC) performance and reliability. The inspectors reviewed system health reports, CAP documents, and maintenance rule basis documents to ensure that FitzPatrick staff was identifying and properly evaluating performance problems within the scope of the maintenance rule. For each sample selected, the inspectors verified that the SSC was properly scoped into the maintenance rule in accordance with Title 10, Code of Federal Regulations (10 CFR) Part 50.65 and verified that the (a)(2) performance criteria established by FitzPatrick staff was reasonable. For SSCs classified as (a)(1), the inspectors assessed the adequacy of goals and corrective actions to return these SSCs to (a)(2). Additionally, the inspectors ensured that FitzPatrick staff was identifying and addressing common cause failures that occurred within and across maintenance rule system boundaries.

- Analog Transmitter Trip System
- Neutron Monitoring

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 reviewed whether 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 reviewed whether plant risk was promptly reassessed and managed. The inspectors also walked down selected areas of the plant which became more risk significant because of the maintenance activities to ensure they were appropriately controlled to maintain the expected risk condition. The reviews focused on the following activities:

- Emergent charcoal replacement on 'B' SGT on October 25, 2012
- Spent fuel pool cooling system protection measures due to lower time to boil following R20, with walkdowns performed during the week of October 29, 2012
- Power ascension to 100 percent following the November 11 forced outage, a power reduction to 65 percent for a control rod pattern adjustment, high pressure coolant injection system quarterly surveillance test, and emergent maintenance to troubleshoot a power supply problem with the 'B' rod block monitor during the week of November 26, 2012
- Power reduction to 75 percent to flush the main condenser water boxes due to

fouling, 'B' residual heat removal (RHR) and RHR service water system quarterly surveillance tests, and a power reduction to 50 percent to support emergent maintenance to identify and plug leaking main condenser tubes during the week of December 17, 2012

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 - 3 samples)

a. Inspection Scope

The inspectors reviewed operability determinations for the following degraded or non-conforming conditions:

- CR-JAF-2012-05060 and CR-JAF-2012-05063 concerning the effect of two thermal relief valves, 10RV-41D and 14SV-20A, that had exceeded their required lift test frequency on operability of the associated systems, 'D' RHR and 'A' core spray, on September 4, 2012
- CR-JAF-2011-04144 concerning control rod operability during startup due to channel bow considerations, on October 5, 2012
- CR-JAF-2012-07728, concerning 'F' safety relief valve (SRV) downward first stage temperature spikes that could be indicative of pilot valve leakage, making the SRV possibly susceptible to spurious operation, on October 25, 2012

The inspectors selected these issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the operability determinations to assess whether TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TS and UFSAR to FitzPatrick personnel's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled by FitzPatrick personnel. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18 - 2 samples).1 Temporary Modificationsa. Inspection Scope

The inspectors reviewed temporary modification EC 40529, "02PT-134D Alternate Input due to 29MST-1002D Leak." Pressure transmitter 02PT-134D senses main steam line pressure at the main turbine inlet, which is used as an input to the primary containment isolation system for automatic closure of the main steam isolation valves on low main steam line pressure with the reactor in the 'Run' mode. 29MST-1002D is a valve in the 02PT-134D sensing line that developed a steam leak. The purpose of the temporary modification was to allow 29MST-1002D to be closed for repair while maintaining 02PT-134D operable by using an alternate input source.

The inspectors verified that the design bases, licensing bases, and performance capability of the affected system was not degraded by the modification. In addition, the inspectors reviewed modification documents associated with the design change.

b. Findings

No findings were identified.

.2 Permanent Modificationsa. Inspection Scope

The inspectors evaluated replacement of main transformer 71T-1A implemented by engineering change package EC 41007, "Main Transformer 71T-1A Replacement." The inspectors verified that the design bases, licensing bases, and performance capability of the affected systems were not degraded by the modification. In addition, the inspectors reviewed modification documents associated with the design change and the post modification test plan.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 - 8 samples)a. Inspection Scope

The inspectors reviewed the post-maintenance tests (PMTs) for the maintenance activities listed below to verify that procedures and test activities ensured system operability and functional capability. The inspectors reviewed the test procedure to verify that the procedure adequately tested the safety functions that may have been affected by the maintenance activity, that the acceptance criteria in the procedure was consistent with the information in the applicable licensing basis and/or design basis documents, and that the procedure had been properly reviewed and approved. The inspectors also witnessed the test or reviewed test data to verify that the test results adequately demonstrated restoration of the affected safety functions.

- Work Orders (WOs) 52287092, 00252161, 52288090, 00139399, 00271390, 51693751, 51693591 for work on various 'B' RHR system components during R20, on October 1, 2012
- WO 52290498 to perform preventive maintenance on the 'A' outboard main steam isolation valve (MSIV), 29AOV-86A, on October 2, 2012
- WO 00212935 to replace reserve station service transformer, 71T-2, deluge system, on October 3, 2012
- WO 52292007 to perform 'A' SRV maintenance and inservice inspection during R20, on October 10, 2012
- WO 52288695 to perform the reactor pressure vessel system leakage test following work performed in containment during R20, including control rod drive mechanism replacements, on October 11, 2012
- WO 52290673 to perform control rod scram time testing following refueling during R20, on October 11, 2012
- WOs 00152226, 00167063, 00328937 for work to correct excessive leakage from the torus purge and inert supply and isolation valves, 27AOV-115 and -116, on October 14, 2012
- WO 332252 to replace the main turbine trip solenoid valve, on November 7, 2012

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20 - 2 samples)

.1 Refueling Outage 20 (R20)

a. Inspection Scope

The inspectors reviewed FitzPatrick's work schedule and outage risk plan for R20, which commenced on September 16, 2012. The inspectors reviewed FitzPatrick's implementation of outage plans and schedules to verify that risk, industry experience, previous site-specific problems, and defense-in-depth were considered. The inspectors observed portions of the startup process and monitored controls associated with the following outage activities:

- Configuration management, including maintenance of defense-in-depth, commensurate with the outage plan for the key safety functions and compliance with the applicable TS when taking equipment out of service
- Installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication and instrument error accounting
- Status and configuration of electrical systems and switchyard activities to ensure that TSs were met
- Monitoring of decay heat removal operations
- Impact of outage work on the ability of the operators to operate the spent fuel pool cooling system
- Reactor water inventory controls, including flow paths, configurations, alternative means for inventory additions, and controls to prevent inventory loss
- Activities that could affect reactivity

- Maintenance of secondary containment as required by TSs
- Refueling activities, including fuel handling and full core verification
- Fatigue management
- Containment closeout inspection
- Identification and resolution of problems related to refueling outage activities

These activities completed one sample, which was begun last quarter when R20 commenced.

b. Findings

No findings were identified.

.2 November 11, 2012, Forced Outage

a. Inspection Scope

On November 11, 2012, the reactor automatically scrammed from approximately 100 percent power due to a failure of main transformer 71T-1A which resulted in a main generator load rejection and turbine trip. Following repair and replacement activities, the reactor was taken critical on November 24, 2012, and placed online on November 25, 2012. The inspectors reviewed FitzPatrick staff's implementation of forced outage plans and schedules to verify that risk, industry experience, previous site-specific problems, and defense-in-depth were considered. The inspectors observed portions of the cooldown, heatup, and startup processes, and monitored controls associated with the following outage activities:

- Configuration management, including maintenance of defense-in-depth, commensurate with the outage plan for the key safety functions and compliance with the applicable TS when taking equipment out of service
- Installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication and instrument error accounting
- Status and configuration of electrical systems and switchyard activities to ensure that technical specifications were met
- Monitoring of decay heat removal operations
- Identification and resolution of problems related to outage activities

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 - 5 samples)

a. Inspection Scope

The inspectors observed the performance of surveillance tests (STs) and/or reviewed test data of selected risk-significant SSCs to assess whether test results satisfied technical specifications, the UFSAR, and station procedure requirements. The inspectors verified that test acceptance criteria were clear, tests demonstrated operational readiness and were consistent with design documentation, test

instrumentation had current calibrations and the appropriate range and accuracy for the application, tests were performed as written, and applicable test prerequisites were satisfied. Upon test completion, the inspectors considered whether the test results supported that equipment was capable of performing the required safety functions. The inspectors reviewed the following STs:

- ST-9CB, “EDG B and D Load Sequencing Test and 4KV Emergency Power System Voltage Relays Instrument Functional Test,” on October 2, 2012
- ST-9NB, “EDG Subsystem B Logic System Functional Test,” on October 2, 2012
- ST-9CA, “EDG A and C Load Sequencing Test and 4KV Emergency Power System Voltage Relays Instrument Functional Test,” on October 3, 2012
- MST-071.26, “Station Battery A Modified Performance Test,” on October 4, 2012
- ST-3PA, “‘A’ Core Spray Quarterly Operability (IST),” November 9, 2012

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)

During the week of September 24 through 28, 2012, the inspectors reviewed and assessed FitzPatrick staff’s performance in assessing the radiological hazards and exposure control in the workplace. The inspectors used the requirements in 10 CFR Part 20 and guidance in Regulatory Guide (RG) 8.38, “Control of Access to High and Very High Radiation Areas for Nuclear Plants,” the TSs, and the Entergy’s procedures required by TSs as criteria for determining compliance.

a. Inspection Scope

Inspection Planning

The inspectors reviewed FitzPatrick’s 2012 performance indicators for the occupational exposure cornerstone for FitzPatrick. The inspectors reviewed the results of radiation protection (RP) program audits. The inspectors reviewed any reports of operational occurrences related to occupational radiation safety since the last inspection.

Radiological Hazard Assessment

The inspectors reviewed whether there had been changes to plant operations since the last inspection that may result in a significant new radiological hazard for onsite workers or members of the public. The inspectors evaluated whether FitzPatrick staff assessed the potential impact of these changes and had implemented periodic monitoring, as appropriate, to detect and quantify the radiological hazard.

The inspectors reviewed the last two radiological surveys from the drywell, reactor building, and ‘A’ reactor water cleanup pump. The inspectors evaluated whether the

thoroughness and frequency of the surveys were appropriate for the given new radiological hazard.

The inspectors conducted walkdowns and independent radiation measurements in the facility, including radioactive waste processing, storage, and handling areas to evaluate material and radiological conditions.

The inspectors selected the following risk-significant work activities that involved exposure to radiation.

- In-service inspection (ISI) inside the drywell
- Reactor disassembly/reassembly
- Safety relief valve work

For these work activities, the inspectors assessed whether the pre-work surveys performed were appropriate to identify and quantify the radiological hazard and to establish adequate protective measures. The inspectors evaluated the radiological survey program to determine if radiological hazards were properly identified (e.g., discrete radioactive hot particles, transuranics and hard to detect nuclides in air samples, transient dose rates and large gradients in radiation dose rates).

The inspectors did not observe work in potential airborne areas as there were no posted airborne radioactivity areas during the inspection period. The inspectors evaluated whether continuous air monitors (CAMs) were located in areas with low background radiation to minimize false alarms and were representative of actual work areas. The inspectors evaluated FitzPatrick's program for monitoring levels of loose surface contamination in areas of the plant with the potential for the contamination to become airborne.

#### Instructions to Workers

The inspectors selected three containers holding non-exempt licensed radioactive materials that may cause unplanned or inadvertent exposure of workers. The inspectors assessed whether the containers were labeled and controlled in accordance with 10 CFR Part 20 requirements.

The inspectors reviewed the following radiation work permits (RWPs) used to access high radiation areas (HRAs) and evaluated if the specified work control instructions and control barriers were consistent with TS requirements for HRAs.

- 20120512, ISI inside the drywell
- 20120701, reactor disassembly/reassembly
- 20120515, safety relief valve work

For these RWPs, the inspectors assessed whether allowable stay times or permissible dose for radiologically significant work under each RWP were clearly identified. The inspectors evaluated whether Electronic Personal Dosimeter (EPD) alarm set-points were in conformance with survey indications and plant procedural requirements.

For work activities that could suddenly and severely increase radiological conditions, the inspectors assessed FitzPatrick's means to inform workers of these changes that could significantly impact their occupational dose.

#### Contamination and Radioactive Material Control

The inspectors observed the control point access/egress where FitzPatrick staff monitored potentially contaminated material leaving the radiological control area and inspected the methods used for control, survey, and release of these materials from these areas. The inspectors observed the performance of personnel surveying and releasing material for unrestricted use and evaluated whether the work was performed in accordance with plant procedures. The inspectors assessed whether the radiation monitoring instrumentation used for equipment release and personnel contamination surveys had appropriate sensitivity for the type(s) of radiation present.

The inspectors reviewed FitzPatrick staff's criteria for the survey and release of potentially contaminated material. The inspectors evaluated whether there was guidance on how to respond to alarms that indicate the presence of licensed radioactive material.

The inspectors reviewed FitzPatrick's procedures and records to verify that the radiation detection instrumentation was used at its typical sensitivity level based on appropriate counting parameters. The inspectors selected two sealed sources from FitzPatrick's inventory records and assessed whether the sources were accounted for and were tested for loose surface contamination.

The inspectors evaluated whether any recent transactions involving nationally tracked sources were reported in accordance with 10 CFR Part 20 requirements.

#### Radiological Hazards Control and Work Coverage

The inspectors evaluated ambient radiological conditions and performed independent radiation measurements during walkdowns of the facility. The inspectors assessed whether the conditions were consistent with applicable posted surveys, RWPs, and associated worker briefings.

The inspectors evaluated the adequacy of radiological controls, such as required surveys, radiation protection job coverage and contamination controls. The inspectors evaluated FitzPatrick staff's use of EPDs in high noise areas that were also HRAs or Locked High Radiation Areas (LHRAs).

The inspectors assessed whether radiation monitoring devices were placed on the individual's body consistent with FitzPatrick's procedures. The inspectors assessed whether the dosimeter was placed in the location of highest expected dose or that FitzPatrick staff properly implemented an NRC-approved method of determining effective dose equivalent.

The inspectors reviewed the application of dosimetry to effectively monitor exposure to personnel in high-radiation work areas with significant dose rate gradients.

The inspectors did not review any RWPs for work within airborne radioactivity areas with the potential for individual worker internal exposures as no airborne radioactivity areas were present during the inspection period.

The inspectors examined FitzPatrick's physical and programmatic controls for highly activated or contaminated materials stored within spent fuel and other storage pools at FitzPatrick. The inspectors assessed whether appropriate controls were in place to preclude inadvertent removal of these materials from the pool.

The inspectors examined the posting and physical controls for selected HRAs, LHRAs and very high radiation areas (VHRAs) to verify conformance with the occupational performance indicator.

#### Risk-Significant HRA and VHRA Controls

The inspectors discussed with first-line health physics supervisors the controls in place for special areas that have the potential to become VHRAs during certain plant operations. The inspectors assessed whether these plant operations require communication beforehand with the health physics group, so as to allow corresponding timely actions to properly post, control, and monitor the radiation hazards including re-access authorization.

#### Radiation Worker

The inspectors observed the performance of radiation workers with respect to stated RP work requirements. The inspectors assessed whether workers were aware of the radiological conditions in their workplace and the RWP controls/limits in place, and whether their behavior reflected the level of radiological hazards present.

#### RP Technician Proficiency

The inspectors observed the performance of the RP technicians with respect to controlling radiation work. The inspectors evaluated whether technicians were aware of the radiological conditions in their workplace and the RWP controls/limits, and whether their behavior was consistent with their training and qualifications with respect to the radiological hazards and work activities.

#### Problem Identification and Resolution

The inspectors evaluated whether problems associated with radiation monitoring and exposure control were being identified by FitzPatrick staff at an appropriate threshold and were properly addressed for resolution in the licensee's CAP. The inspectors assessed the appropriateness of the corrective actions for a selected sample of problems documented by FitzPatrick staff that involve radiation monitoring and exposure controls. The inspectors assessed FitzPatrick staff's process for applying operating experience to their plant.

#### b. Findings

No findings were identified.

## 2RS2 Occupational ALARA Planning and Controls (71124.02)

The inspectors assessed performance with respect to maintaining occupational individual and collective radiation exposures as low as is reasonably achievable (ALARA). The inspectors used the requirements in 10 CFR Part 20, RG 8.8, "Information Relevant to Ensuring that Occupational Radiation Exposures at Nuclear Power Plants will be As Low As Reasonably Achievable," RG 8.10, "Operating Philosophy for Maintaining Occupational Radiation Exposure As Low as Reasonably Achievable," the TSs, and FitzPatrick's procedures required by TSs as criteria for determining compliance.

### a. Inspection Scope

#### Inspection Planning

The inspectors reviewed pertinent information regarding FitzPatrick's collective dose history, current exposure trends, and ongoing or planned activities in order to assess current performance and exposure challenges. The inspectors reviewed the plant's three year rolling average collective exposure.

The inspectors compared the site-specific trends in collective exposures against the industry average values and those values from similar vintage reactors. In addition, the inspectors reviewed any changes in the radioactive source term by reviewing the trend in average contact dose rate with recirculation piping. The inspectors reviewed site-specific procedures associated with maintaining occupational exposures ALARA, which included a review of processes used to estimate and track exposures from specific work activities.

#### Radiological Work Planning

The inspectors selected the following work activities that had the highest exposure significance.

- 20120512, ISI inside the drywell
- 20120701, reactor disassembly/reassembly
- 20120515, safety relief valve work

The inspectors reviewed the ALARA work activity evaluations, exposure estimates, and exposure reduction requirements. The inspectors determined whether FitzPatrick staff reasonably grouped the radiological work into work activities, based on historical precedence, industry norms, and/or special circumstances.

The inspectors assessed whether FitzPatrick staff's planning identified appropriate dose reduction techniques, considered alternate dose reduction features, and estimated reasonable dose goals. The inspectors evaluated whether FitzPatrick staff's ALARA assessment had taken into account decreased worker efficiency from use of respiratory protective devices and/or heat stress mitigation equipment. The inspectors determined whether FitzPatrick staff's work planning considered the use of remote technologies as a means to reduce dose and the use of dose reduction insights from industry operating experience and plant-specific lessons learned. The inspectors assessed the integration of ALARA requirements into work procedure and RWP documents.

### Verification of Dose Estimates and Exposure Tracking Systems

The inspectors reviewed the assumptions and basis for the current annual collective dose estimate for accuracy. The inspectors reviewed applicable procedures to determine the methodology for estimating exposures from specific work activities and for department and station collective dose goals.

The inspectors evaluated whether FitzPatrick staff had established measures to track, trend, and if necessary, to reduce occupational doses for ongoing work activities. The inspectors assessed whether dose threshold criteria were established to prompt additional reviews and/or additional ALARA planning and controls.

The inspectors evaluated FitzPatrick staff's method of adjusting exposure estimates, or re-planning work, when unexpected changes in scope or emergent work were encountered. The inspectors assessed whether adjustments to exposure estimates were based on sound RP and ALARA principles or if they were just adjusted to account for failures to plan/control the work.

### Source Term Reduction and Control

The inspectors used FitzPatrick's records to determine the historical trends and current status of plant source term known to contribute to elevated facility collective dose. The inspectors assessed whether FitzPatrick staff had made allowances or developed contingency plans for expected changes in the source term as the result of changes in plant fuel performance issues or changes in plant primary chemistry.

### Radiation Worker Performance

The inspectors observed radiation worker and RP technician performance during work activities being performed in radiation areas and HRAs. The inspectors evaluated whether workers demonstrated the ALARA philosophy in practice and whether there were any procedure or RWP compliance issues.

### Problem Identification and Resolution

The inspectors evaluated whether problems associated with ALARA planning and controls are being identified by FitzPatrick staff at an appropriate threshold and were properly addressed for resolution in FitzPatrick's CAP. The inspectors assessed FitzPatrick's process for applying operating experience to their plant.

#### b. Findings

No findings were identified.

#### 2RS3 In-Plant Airborne Radioactivity Control and Mitigation (71124.03)

The inspectors verified in-plant airborne concentrations were being controlled consistent with ALARA principles and the use of respiratory protection devices on-site did not pose an undue risk to the wearer. The inspectors used the requirements in 10 CFR Part 20, the guidance in RG 8.15, "Acceptable Programs for Respiratory Protection," RG 8.25,

“Air Sampling in the Workplace,” NUREG-0041, “Manual of Respiratory Protection Against Airborne Radioactive Material,” the TSs, and FitzPatrick’s procedures required by TSs as criteria for determining compliance.

a. Inspection Scope

The inspectors reviewed FitzPatrick’s UFSAR to identify areas of the plant designed as potential airborne radiation areas and any associated ventilation systems or airborne monitoring instrumentation. This review included instruments used to identify changing airborne radiological conditions such that actions to prevent an internal uptake may be taken. The inspectors reviewed reported performance indicators to identify any related to unintended dose resulting from intakes of radioactive material.

Engineering Controls

The inspectors reviewed FitzPatrick staff’s use of permanent and temporary ventilation to determine whether the licensee used ventilation systems as part of its engineering controls to control airborne radioactivity. The inspectors reviewed procedural guidance for use of installed plant systems to reduce dose and assessed whether the systems were used, to the extent practicable, during high-risk activities.

The inspectors selected the reactor building and the SGT system as installed ventilation systems used to mitigate the potential for airborne radioactivity. The inspectors evaluated whether the ventilation system operating parameters, were consistent with maintaining concentrations of airborne radioactivity in work areas below the concentrations of an airborne radioactive material area.

The inspectors selected the drywell temporary ventilation system setup used to support work in contaminated areas. The inspectors assessed whether the use of the system was consistent with FitzPatrick’s procedural guidance and ALARA concept.

The inspectors assessed whether FitzPatrick staff had established threshold criteria for evaluating levels of airborne beta-emitting and alpha-emitting radionuclides.

b. Findings

No findings were identified.

**4. OTHER ACTIVITIES**

4OA1 Performance Indicator Verification (71151)

.1 Mitigating Systems Performance Index (5 samples)

a. Inspection Scope

The inspectors reviewed FitzPatrick staff’s submittal of the Mitigating Systems Performance Index (MSPI) for the following systems for the period of October 1, 2011 through September 30, 2012.

- MSPI, emergency alternating current power system
- MSPI, high pressure injection system
- MSPI, heat removal system
- MSPI, residual heat removal system
- MSPI, cooling water systems

To determine the accuracy of the performance indicator (PI) data reported during this period, the inspectors used definitions and guidance contained in Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, and discussed specific questions with the HPCI system engineer. The inspectors also reviewed station operator narrative logs, MSPI/World Association of Nuclear Operators (WANO) PI data sheets, EDG demand logs, a learning organization report (LO-HQNLO-2007-00076), and NRC integrated inspection reports to validate the accuracy of the submittals.

b. Findings

No findings were identified.

.2 Occupational Exposure Control Effectiveness (1 sample)

a. Inspection Scope

During the week of September 24 through 28, 2012, the inspectors sampled FitzPatrick submittals for the occupational radiological occurrences PI for the period from the fourth quarter 2011 through third quarter 2012. The inspectors used PI definitions and guidance contained in the NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, to determine the accuracy of the PI data reported during this period. The inspectors reviewed FitzPatrick staff's assessment of the PI for occupational radiation safety to determine if the related data was adequately assessed and reported.

To assess the adequacy of FitzPatrick's PI data collection and analyses, the inspectors discussed with RP staff the scope and breadth of its data review and the results of those reviews. The inspectors independently reviewed electronic personal dosimetry accumulated dose alarms, dose reports, and dose assignments for any intakes that occurred during the time period reviewed to determine if there were potentially unrecognized PI occurrences. The inspectors also conducted walkdowns of numerous locked high and very high radiation area entrances to determine the adequacy of the controls in place for these areas.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152 - 2 samples)

.1 Routine Review of Problem Identification and Resolution Activities

a. Inspection Scope

As required by Inspection Procedure 71152, "Problem Identification and Resolution," the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that FitzPatrick staff entered issues into the CAP at an appropriate threshold, gave adequate attention to timely corrective actions, and identified and addressed adverse trends. In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the CAP and periodically attended CR screening meetings.

b. Findings

No findings were identified.

.2 Semi-Annual Trend Review (1 sample)

a. Inspection Scope

The inspectors performed a semi-annual review of site issues, as required by Inspection Procedure 71152, "Problem Identification and Resolution," to identify trends that might indicate the existence of more significant safety issues. In this review, the inspectors included repetitive or closely-related issues that may have been documented by FitzPatrick personnel outside of the CAP, such as trend reports, PIs, major equipment problem lists, system health reports, maintenance rule assessments, and the CAP backlog. The inspectors also reviewed FitzPatrick's CAP database for the third and fourth quarters of 2012 to assess CRs written in various subject areas (equipment problems, human performance issues, etc.), as well as individual issues identified during the NRC's daily CR review (Section 4OA2.1). The inspectors reviewed the FitzPatrick quarterly trend report for the second quarter of 2012, conducted under EN-LI-121, "Entergy Trending Process," to verify that FitzPatrick personnel were appropriately evaluating and trending adverse conditions in accordance with applicable procedures.

b. Findings and Observations

No findings were identified.

The inspectors evaluated a sample of CRs generated over the course of the past two quarters by departments that provide input to the quarterly trend reports. The inspectors determined that, in most cases, the issues were appropriately evaluated by Entergy staff for potential trends and resolved within the scope of the corrective action program. However, the inspectors noted instances where issue trending had not been utilized and may have proven useful. For example, there were multiple instances of emergency warning siren malfunctions during the past six months, most associated with siren #4. Although the individual issues were addressed through the CAP, the inspectors did not initially see an indication that they had collectively been evaluated to determine if an adverse trend existed. Following discussions regarding the number of siren failures,

FitzPatrick staff initiated CR-JAF-2012-8040 to evaluate the potential adverse trend. Although the individual issues were being addressed, the inspectors considered that this particular issue satisfied the EN-LI-121 definition of an adverse trend. While this was not a violation of regulatory requirements, the inspectors determined it was a missed opportunity to effectively use all of the tools available in the CAP.

.3 Annual Sample: Review of the Operator Workaround Program (1 sample)

a. Inspection Scope

The inspectors reviewed the cumulative effects of the existing operator workarounds, operator burdens, operator aids and disabled alarms, and open main control room deficiencies to identify any effect on emergency operating procedure operator actions, and any impact on possible initiating events and mitigating systems. The inspectors evaluated whether station personnel had identified, assessed, and reviewed operator workarounds as specified in Entergy Fleet procedure EN-FAP-OP-006, "Operator Aggregate Impact Index Performance Indicator."

The inspectors reviewed FitzPatrick's process to identify, prioritize and resolve main control room distractions to minimize operator burdens. The inspectors reviewed the system used to track these operator workarounds and recent FitzPatrick staff evaluations of the aggregate impact index. The inspectors also routinely tour the control room and discuss operator workarounds with the operators to ensure the items are addressed on a schedule consistent with their relative safety significance.

b. Findings and Observations

No findings were identified.

The inspectors determined that the issues reviewed did not adversely affect the capability of the operators to implement abnormal or emergency operating procedures. The inspectors also verified that FitzPatrick staff entered operator workarounds and burdens into the corrective action program at an appropriate threshold and planned or implemented corrective actions commensurate with their safety significance.

4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153 - 3 samples)

.1 October 5, 2012, Loss of Offsite Power

a. Inspection Scope

On October 5, 2012, FitzPatrick was operating in Refueling mode with the reactor cavity flooded, the fuel pool gates removed, with decay heat removal being provided by the decay heat removal system and RHR shutdown cooling secured. The new reserve station service transformers (RSSTs) had just been placed in service and were providing site power. Preparations were in progress for installation of the fuel pool gates to support cavity drain down and reactor reassembly.

At 1:01 pm, operators started the 'A' core spray pump to support testing. Immediately thereafter, a loss of offsite power occurred due to a lockout of the RSSTs. Operators also received a reactor scram (all rods were already fully inserted), and the 'A' core

spray pump shut down. All four EDGs automatically started and all closed in to reenergize their respective safety busses, with the exception of the 'A' EDG, which started but did not close in.

The inspectors responded to the control room to monitor plant response and observe operator activities. The inspectors verified that operators responded in accordance with the applicable emergency and abnormal operating procedures. The inspectors confirmed that the station's response was consistent with the requirements of the site emergency plan, and that the event was reported to the NRC as required by 10 CFR Part 50.72.

b. Findings

(1) Failure to Install Reserve Station Service Transformers in Accordance with Procedure

Introduction. The inspectors identified a self-revealing, Green non-cited violation (NCV) of TS 5.4, "Procedures," because station personnel did not perform installation of the replacement RSSTs, 71T-2 and 71T-3, in accordance with written procedures. Specifically, station personnel did not remove the shorting bars from the current transformer (CT) circuits, as specified by the work instructions, which impacted trip set points for the transformer differential current protection relays.

Description. FitzPatrick station receives offsite electrical power from two 115 KV supply lines, lines 3 and 4, which are stepped down to 4160 volts through the RSSTs, 71T-2 and 71T-3. These provide station power when the plant is shut down and when the main generator is off line. During plant operation, station electrical loads are supplied by normal station service transformer (NSST) 71T-4, which takes power from the main generator output. In the event that neither of these sources is available, two pair of EDGs automatically start to supply safety class electrical loads; 'A' and 'C' EDGs supply Division 1 loads through Bus 10500, and 'B' and 'D' EDGs supply Division 2 loads through Bus 10600. During the RSST replacement, power was fed back through the main transformers from the normal outgoing 345 KV transmission system to provide station power through the NSST.

The RSSTs were replaced during R20 under Engineering Change (EC) 12703, "Replace Reserve Station Service Transformers," which had been prepared by a contract organization. The installations were performed by contract electricians with management and oversight provided by the transformer vendor and Entergy project managers.

The RSSTs are provided with fault protection, in part, using a phase differential current protection scheme. Phase currents are sensed using current transformers (CTs), which provide reduced values of current to the protection circuit relays and other components. CT connections are made to the protective circuitry on a shorting terminal block in the RSST control panel. A conducting (shorting) bar is mounted above the shorting terminal block, which allows individual termination points on the shorting terminal block to be shorted by installation of screws through the shorting bar. The as-sent configuration of the new transformers had these shorting screws installed, and the EC preparers realized that they needed to be removed during installation of the RSSTs. Rather than specifying the standard practice of removing the shorting screws, the EC preparers instructed removal of the shorting bar itself. However, this action would result in a different terminal configuration than was shown in the applicable EC circuit drawing, which had not been modified to reflect the shorting bar removal and still showed the as-sent configuration.

The vendor project manager considered that the statement to remove the shorting bar was an administrative error, and that the intent of the step was to remove the shorting screws for the CTs that would be placed in service. Based on this interpretation, he consulted the Entergy responsible engineer to verify which screws needed to be removed. Based on the as-sent circuit drawing in the EC, they concluded that two of the three shorting screws should remain installed.

71T-2 and 71T-3 were returned to service on October 5, 2012. At that point in the refueling outage, site electrical requirements were so limited that the transformer differential protection circuitry did not initially actuate, despite the incorrect CT setup. However, when operators started the 'A' core spray pump to support unrelated testing, the 71T-3 phase A differential protection relay tripped and produced a lockout of both 71T-3 and 71T-2. The EDGs automatically started and reenergized the 10500 and 10600 Busses.

The loss of offsite power did not cause a loss of core or fuel pool cooling because the refueling cavity was flooded, the fuel pool gates were removed, and the decay heat removal (DHR) system was in service. The DHR system is an alternate heat removal system that was designed to allow RHR shutdown cooling to be secured during refueling outages. System operation was not interrupted because it is powered from a different offsite circuit. Nonetheless, the loss of offsite power significantly impacted the plant risk profile, which previously had been Green for all shutdown safety functions

As immediate corrective action, operators reestablished station power from the NSST via the 345 KV back feed and secured the EDGs. The issue was entered into the CAP as CR-JAF-2012-06866. Troubleshooting identified the CT shorting bars had not been removed during installation of either RSST.

Analysis. The inspectors determined that the failure of station personnel to remove the CT shorting bars as specified by the EC 12703 work instructions was a performance deficiency that was reasonably within Entergy staff's ability to foresee and correct. The finding was more than minor because it affected the equipment performance attribute of the Initiating Events cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The finding also was similar to example 4.b in Inspection Manual Chapter (IMC) 0612, Appendix E, "Examples of Minor Issues," in that the error caused a

transient. The inspectors evaluated the finding in accordance with IMC 0609, Appendix G, "Shutdown Operations Significance Determination Process." Per Attachment 1, "Shutdown Operations Significance Determination Process Phase 1 Operational Checklists for both PWRs and BWRs," Checklist 7, "BWR Refueling Operation with RCS Level > 23'," the issue constituted a finding because, after the event, FitzPatrick did not have one operable qualified circuit between the offsite transmission network and the onsite 1E AC electrical power distribution subsystems. Also per Checklist 7, this was not a finding requiring phase 2 or phase 3 analysis, nor did it constitute a loss of control event per Appendix G, Table 1. Therefore, the finding screened as very low safety significance (Green).

This finding had a cross-cutting aspect in the area of Human Performance, Resources, because Entergy staff did not provide an accurate and up-to-date work package for installation of the RSSTs, in that the package did not include a drawing of the CT shorting terminal configured with the shorting bar removed, nor did they ensure that the work package was appropriately updated with clarifying information after workers questioned the existing instructions [H.2(c)].

Enforcement. TS 5.4, "Procedures," states, in part, "Written procedures shall be established, implemented, and maintained covering . . . the applicable procedures recommended in RG 1.33, Appendix A, November 1972." RG 1.33, Appendix A, November 1972, Section I, "Procedures for Performing Maintenance," states, in part, "Maintenance which can affect the performance of safety-related equipment should be properly preplanned and performed in accordance with written procedures . . ." RG 1.33, Appendix A, November 1972, Section D, Procedures for Startup, Operation, and Shutdown of Safety Related BWR Systems," includes the offsite electrical system as such a system.

Contrary to the above, during the 2012 FitzPatrick refueling outage, maintenance which could affect the performance of the offsite electrical system, specifically, replacement of RSSTs 71T-2 and 71T-3, was not properly implemented by station personnel in accordance with written procedures, in that the CT shorting bars were not removed as specified by the EC 12703 work instructions. As a result, on October 5, 2012, the 71T-3 phase A differential protection relay tripped in response to the start of the 'A' core spray pump and produced a lockout of both RSSTs and a loss of offsite power. Because this issue was of very low safety significance (Green) and Entergy entered it into their corrective action program as CR-JAF-2012-06866, this finding is being treated as an NCV, consistent with the NRC Enforcement Policy. **(NCV 05000333/2012005-01, Failure to Install Reserve Station Service Transformers in Accordance with Procedure).**

(2) Failure of 'A' EDG Output Breaker to Close Following Loss of Offsite Power

Introduction. The inspectors identified a self-revealing, Green NCV of TS 5.4, "Procedures," because Entergy did not establish and implement an adequate procedure for installation of a 4160 volt alternating current (VAC) circuit breaker such that the breaker was aligned properly upon installation. Specifically, FitzPatrick's procedure for 4160 VAC circuit breaker installation did not provide sufficient guidance to station personnel to preclude misalignment of the 'A' EDG output breaker which occurred during installation on September 15, 2011.

Description. At 1:01 pm on October 5, 2012, a loss of offsite power occurred at FitzPatrick. The four EDGs automatically started; however, the 'A' EDG output breaker did not close as expected. Its companion Division 1 EDG ('C' EDG) operated as expected to reenergize the 10500 Bus. Entergy's troubleshooting revealed that the 'A' EDG output breaker, 71-10502, was not properly aligned in its cubicle and thereby prevented the normal Division I EDG starting sequence from being completed as expected. Subsequent to the event, Entergy staff identified the top edge of the breaker was not flush with the cubicle, but rather, protruded outward; and the breaker was not centered in the cubicle, being flush on one side with a gap on the other, as opposed to having equal gaps on both sides.

FitzPatrick staff identified that the breaker had last been installed on September 15, 2011 when the misalignment occurred. Station personnel determined that the 'A' EDG output breaker operated normally for approximately 12 months despite the misalignment, as supported by proper breaker operation during monthly EDG surveillance testing. However, as evidenced by the loss of offsite power event on October 5, 2012, the 'A' EDG output breaker auxiliary contacts apparently had become disengaged due to operationally induced vibration after the last successful operation on October 3, 2012. The 'A' EDG output breaker auxiliary contacts being disengaged resulted in the 'A-C' EDG tie breaker not closing during the normal Division EDG starting sequence, thereby permitting only one EDG to energize the 10500 Bus.

The inspectors determined that procedure OP-46A, "4160 V and 600 V Normal AC Power Distribution," did not include steps to ensure correct alignment during breaker racking and to verify flush alignment in the breaker cubicle following racking. The inspectors also determined that the Division I EDG remained operable but degraded until the October 3, 2012 surveillance run after which the auxiliary contacts apparently became disengaged. The inspectors also noted that, given the operational condition at that time, (refueling), the Division I EDG function was not required by TS from October 2 until October 5 when the problem revealed itself.

The issue was entered into the corrective action program as CR-JAF-2012-06868. Entergy staff corrected the misalignment of the 'A' EDG output breaker and conducted an instrumented run of the 'A' and 'C' EDGs to verify Division I EDG breakers operated correctly. FitzPatrick staff initiated a change to procedure OP-46A, "4160 V and 600 V Normal AC Power Distribution," to include steps to ensure correct alignment during breaker racking and flush alignment in the breaker cubicle following racking.

Analysis. The inspectors determined that the failure of Entergy staff to provide an adequate procedure for installation of a 4160 VAC circuit breaker was a performance deficiency that was reasonably within Entergy staff's ability to foresee and correct. The finding was more than minor because it affected the equipment performance attribute of the Mitigating Systems cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the reliability of Division 1 EDG automatic operation was degraded for approximately one year due to the 'A' EDG breaker misalignment issue. Although the issue was identified while the plant was shut down, the inspectors determined that it was appropriate to evaluate the condition in accordance with the at-power SDP, because the condition had existed for the previous year. In accordance with IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," the inspectors determined that the finding was of very low safety significance (Green) because the

finding was not a design qualification deficiency resulting in a loss of functionality or operability, did not represent an actual loss of safety function of a system or train of equipment, and was not potentially risk significant due to external initiating events.

The finding had a cross-cutting aspect in the area of Human Performance, Resources, because FitzPatrick personnel did not ensure that a complete, accurate and up-to-date procedure was available for 4160 VAC circuit breaker installation. Specifically, procedure did not include steps to ensure correct alignment during breaker racking and to verify flush alignment [H.2(c)].

Enforcement. TS 5.4, "Procedures," states, in part, "Written procedures shall be established, implemented, and maintained covering . . . the applicable procedures recommended in RG 1.33, Appendix A." Section I of Appendix A, "Procedures for Performing Maintenance," states, in part, "Maintenance which can affect the performance of safety-related equipment should be properly preplanned and performed in accordance with written procedures. . ." Appendix A, Section D, "Procedures for Startup, Operation, and Shutdown of Safety Related BWR Systems," includes emergency power sources (e.g., diesel generator, batteries) as such a system.

Contrary to the above, on September 15, 2011, maintenance which could affect the performance of the emergency diesel generators, specifically, installation of 'A' EDG output circuit breaker 71-10502, was not properly performed, in that the written procedure did not include steps to ensure correct alignment during breaker racking and flush alignment in the breaker cubicle following racking. As a result, the circuit breaker was not properly aligned such that subsequent stationary auxiliary contact disengagement resulted in failure of the breaker to automatically close when required on October 5, 2012. Because this issue was of very low safety significance (Green) and Entergy entered it into their corrective action program as CR-JAF-2012-06868, this finding is being treated as an NCV, consistent with the NRC Enforcement Policy. **(NCV 05000333/2012005-02, Failure of 'A' EDG Output Breaker to Close Following Loss of Offsite Power)**

.2 November 4, 2012, Reactor Scram

a. Inspection Scope

On November 5, 2012, FitzPatrick was operating at approximately 100 percent power. At 9:41 pm, operators commenced main turbine testing in accordance with procedure ST-21F, "Main Turbine Overspeed Trip Device and Mechanical Trip Valve Test." At 9:53 pm, an unexpected turbine trip and resultant reactor scram occurred. All control rods inserted, as expected.

The inspectors subsequently responded to the control room to monitor plant response and observe operator activities. The inspectors verified that operator response was consistent with the requirements of the site emergency plan and emergency and operating procedures and operators properly reported the event in accordance with 10 CFR Parts 50.72 and 50.73. The inspectors also observed FitzPatrick staff's follow up actions related to the scram to ensure Entergy personnel implemented corrective actions commensurate with their safety significance before commencing the reactor startup.

On November 7, 2012, the inspectors observed portions of the reactor startup, including the approach to and achievement of criticality at 3:56 am. The inspectors observed operator performance to verify that the startup was performed in accordance with TSs and approved procedures.

b. Findings

No findings were identified.

.3 November 11, 2012, Reactor Scram and Notification of Unusual Event

a. Inspection Scope

At 3:55 a.m. on November 11, 2012, while operating at 100 percent power, a main turbine trip occurred which caused an automatic reactor scram. All systems responded as expected and operators stabilized plant conditions. Operators determined that the turbine trip was in response to a fire in one of two main transformers. On-site fire brigade personnel responded to combat the fire and assistance was requested from a local fire department. At 5:45 a.m., the Shift Manager declared a discretionary Unusual Event (emergency action level HU6.1) due to the continuing fire. Site fire brigade and local fire department personnel succeeded in extinguishing the fire at 6:32 a.m., and the licensee exited the UE at 8:01 a.m.

The inspectors responded to the site, inspected the location of the fire, evaluated station response to the fire and the plant trip, and determined the plant was in a safe, stable condition. The inspectors verified that operators responded in accordance with the applicable emergency and abnormal operating procedures. The inspectors confirmed that the station's response was consistent with the requirements of the site emergency plan, and that the event was reported to the NRC as required by 10 CFR Part 50.72.

b. Findings

No findings were identified.

4OA5 Other Activities

.1 License Renewal Activities (IP 71003)

a. Inspection Scope

This inspection was performed by NRC Region I based inspectors to evaluate the license renewal activities at FitzPatrick in accordance with IP 71003. The inspectors performed in-plant observations of license renewal related activities and sampled Entergy's actions for selected commitments. The bases for the review was the NRC staff's safety evaluation report (NUREG 1905; ML080250372) issued on January 24, 2008, including Appendix A, JAFNPP License Renewal Commitments, and the license renewal application (LRA) submitted on July 31, 2006.

b. Findings and Observations

No findings were identified.

In-Plant Observations

The inspectors observed ongoing activities and inspected the general condition of SSCs within the scope of license renewal. The inspectors performed reviews in the reactor and turbine buildings, and of diesel fuel oil systems, as related to commitments and aging management programs (AMPs). The inspectors determined the general conditions to be satisfactory and Entergy's activities were in accordance with facility programs and procedures.

Commitments - Review Complete

Commitment 7 - Heat Exchanger Monitoring Program

Commitment 7 stipulated that Entergy "Implement the Heat Exchanger Monitoring Program as described in LRA Section B.1.15" by October 17, 2014. The inspectors reviewed the commitment closure verification, implementation plan, and Entergy corporate and FitzPatrick site procedures for eddy current testing and heat exchanger monitoring, and discussed program implementation with the responsible program owner.

The inspectors concluded that Commitment 7 had been completed.

Commitments Needing Additional NRC Review

Commitment 1 - Buried Piping and Tanks Inspection Program

Commitment 1 stipulated that Entergy "Implement the Buried Piping and Tanks Inspection Program as described in LRA Section B.1.1" by October 17, 2014.

The inspectors reviewed the commitment closure verification, implementation plan, and Entergy corporate and FitzPatrick site procedures for buried piping and tank inspections, and discussed program implementation with the responsible program owner. The inspectors also reviewed the records from an excavation which inspected two buried pipes, and noted that plans existed for additional excavations prior to October 17, 2014.

The inspectors concluded that the specified buried pipe inspection before the period of extended operations (PEO) had been completed but that additional NRC review of any additional inspections before PEO should be performed during subsequent NRC license renewal inspections.

Commitment 3 - Diesel Fuel Monitoring Program

Commitment 3 stipulated that Entergy "Enhance the Diesel Fuel Monitoring Program to include periodic draining, cleaning, visual inspections, and ultrasonic measurement of the bottom surfaces of the fire pump diesel fuel oil tanks, EDG day tanks, and EDG fuel oil tanks to ensure the significant degradation is not occurring" and "specify acceptance criteria for ultrasonic testing (UT) measurements of the diesel generator fuel storage tanks within the scope of this program."

The inspectors reviewed the commitment closure verification, implementation plan, calculation JAF-CALC-12-00005 for the acceptance criteria, tank drawing, and procedures and work orders related to the tank cleaning and inspection. The inspectors discussed the program enhancements with the program owner and observed the condition of the tanks in the plant. Also, the inspectors noted that periodic draining, cleaning, and visual inspections have been performed on the EDG fuel oil tanks, but no inspection of the other fuel oil tanks or UT tank measurements had been performed.

The inspectors determined that the calculated acceptance criteria appeared to be non-conservative, in that a corrosion allowance was included for some tank components but not for others. The calculation stated that “since the design margin for the head portion of the fuel oil storage tanks and the heads of the fire pump diesel fuel oil tank are so restrictive, no additional [corrosion] allowance can be provided for these sections of the respective tanks.” The calculation stated that “minimum measured UT values must be sent to Civil Design Engineering to determine Remaining Service Life” but no provision was made to accomplish this expectation. Entergy issued LO-LAR-2012-00004, Corrective Action 181 to address this concern.

The inspectors noted that the acceptance criteria calculations for the fuel oil storage tanks did not address any loads due to the fuel oil delivery truck being on the concrete pad above the underground tanks during fuel delivery. Entergy issued LO-LAR-2012-00004, Corrective Action 185 to address this concern.

The inspectors reviewed the planned frequency for the cleaning and inspection of the fuel oil tanks. Safety evaluation report (SER) Section 3.0.3.2.8 documented that Entergy stated that the underground fuel oil storage tanks have been “cleaned and inspected on an eight-year frequency” and that Entergy “proposed to continue to inspect these tanks on this eight-year frequency based on post inspection results.” Nonetheless, the inspectors found that model work orders specified the cleaning and inspection to be done on a ten year frequency, and this frequency has not always been met. For example, Tank 93TK-6D had a cleaning and inspection on October 15, 2001, which was almost 12 years after the previous inspection and had the next inspection scheduled for October 21, 2013, which will be another 12 year period. Entergy issued LO-LAR-2012-00004, Corrective Actions 182 and 183 to address these concerns.

The inspectors concluded that considerable progress on this commitment had been made but that additional NRC review of the results of the planned inspections before the PEO and the UT acceptance criteria should be performed during future NRC license renewal inspections.

#### Commitment 12 - One-Time Inspection Program

Commitment 12 stipulates that Entergy “Implement the One-Time Inspection Program as described in LRA Section B.1.21” within the 10 years prior to October 17, 2014.

The inspectors reviewed the implementation plan and Entergy corporate procedure for one-time program inspections, and discussed program implementation with the responsible program owner. The inspectors reviewed status reports, sample plans, and records from a sample of completed inspections.

The inspectors noted that both LRA Section B.1.21 and SER Section 3.0.3.1.6 address the proposed one-time inspection of the main steam flow restrictors (cast austenitic stainless steel (CASS)). Subsequent to issuance of the renewed license, Entergy determined that the flow restrictors were fabricated of a grade of CASS material which was not susceptible to cracking and removed the inspection from the sample plan. The inspectors noted that while there was a sound technical basis for not performing the planned inspection, Entergy had not taken any action to revise the commitment regarding the proposed inspection. Entergy issued LO-LAR-2012-00004, Corrective Action 184, to address this concern.

The inspectors concluded that the One-Time Program merited additional review following completion of the program, including the resolution of the rescinded flow restrictor inspection.

#### Commitment 15 - Selective Leaching Program

Commitment 15 stipulates that Entergy "Implement the Selective Leaching Program as described in LRA Section B.1.25" prior to October 17, 2014.

The inspectors reviewed the implementation plan and Entergy corporate procedure for selective leaching inspections, and discussed program implementation with the responsible program owner, including a sample plan status report.

The inspectors determined that numerous selective leaching inspections were planned for components fabricated of carbon steel, a non-susceptible material. Also, the inspectors noted that the sample plan had determined the number of samples based on material, environment and system, which represented a more extensive population of samples than proposed in FitzPatrick's LRA and NRC guidance (i.e., sampling based on material and environment only). Based on these observations, Entergy stated that the sample plan for the selective leaching program would be re-evaluated and only inspections on susceptible materials would be used.

The inspectors concluded that the Selective Leaching Program merited additional NRC review following completion of the program, including the re-evaluated sample plan.

#### Commitment Summary

The inspectors concluded that Entergy actions on Commitment 7 were complete and met regulatory expectations as reflected in the staff's safety evaluation report. The inspectors concluded that additional NRC inspection was merited on Commitments 1, 3, 12, and 15. Further NRC inspection of license renewal commitments, including the above four commitments, is planned prior to the scheduled completion date of October 17, 2014.

## .2 Follow-up on Alternative Dispute Resolution Confirmatory Order (92702)

### Background

NRC Confirmatory Order (CO) EA-10-090 / EA-10-248 / EA-11-106 was issued to Entergy on January 26, 2012, to confirm commitments made to the NRC during a mediation session held on November 9, 2011. The mediation session was conducted

upon Entergy's request, in response to the NRC's offer of Alternative Dispute Resolution (ADR), regarding apparent violations identified by the NRC at FitzPatrick. As part of the settled agreement for the CO, Entergy agreed to take additional actions to ensure that the effectiveness of corrective actions previously taken for the issues identified are extended to the Entergy fleet and to the industry.

The objective of this inspection was to verify the actions required of Entergy, to date, as documented in the CO have been implemented. The inspectors used guidance contained in inspection procedure 92702 to conduct the reviews. Actions required of Entergy to be completed at a later date will be inspected and documented in forthcoming inspection reports.

.A (1) Inspection Scope

CO Section V, Paragraph 4.A(2): Entergy will review its existing fleet-wide general employee training (GET) to ensure adequate coverage of the lessons learned from the event that formed the basis for the CO, regarding both procedural compliance and the requirement to maintain complete and accurate records in accordance with 10 CFR 50.9.

(2) Findings and Observations

No findings were identified. As discussed in NRC Inspection Report 05000333/2012003, Section 4OA5.2, Entergy initiated CR-JAF-2012-00966 to address actions to be taken in response to the CO. As addressed in corrective action (CA) 3 to this CR, Entergy conducted a review of their fleet-wide GET training material content with respect to lessons learned from the events that formed the basis for the CO and concluded that FCBT-GET-PATSS, "General Employee Training Program, Entergy Fleet Specific Plant Access Training Lesson Plan," Revision 13, did not adequately address the need for procedural compliance and the requirement to maintain complete and accurate records in accordance with 10 CFR 50.9. Entergy developed recommended improvements to the GET training material under CR-JAF-2012-00966, CA 4, which were projected to be incorporated in the lesson plan during the third quarter of 2012.

The inspectors reviewed the current revision of FCBT-GET-PATSS, Revision 17, and determined that Entergy had incorporated the recommended improvements to address the previous gaps in the GET training material with respect to the CO. This closes item 4.A.

.B (1) Inspection Scope

CO Section V, Paragraph 4.B: Entergy will prepare a case study about the event that formed the basis of the CO, highlighting the role of those who had the opportunity to detect, report, and prevent the misconduct, as well as on the actions of the individuals who engaged in the misconduct. The Site Vice President or General Manager for Plant Operations at each of Entergy's nine commercial nuclear power plants will present the case study during two station-wide meetings to ensure that both day and night shift personnel will have the opportunity to attend. Entergy will complete these presentations within 180 days of the date of the CO. Entergy will make this case study available for NRC review before conducting these station-wide meetings.

(2) Findings and Observations

No findings were identified. As discussed in NRC Inspection Report 05000333/2012003, Section 4OA5.2, the inspectors observed case study presentations at FitzPatrick and Pilgrim Nuclear Power Station. During this inspection period, the inspectors reviewed documentation, presented in CR-JAF-2012-00966 corrective actions 22 through 30, confirming each Entergy nuclear site had conducted the case study presentations. This closes item 4.B.

.C (1) Inspection Scope

CO Section V, Paragraph 4.D(3): Within 30 days after revising its procedure EN-QV-136, Nuclear Safety Culture Monitoring, which implements the safety culture monitoring processes in NEI 09-07 "Fostering a Strong Nuclear Safety Culture," Entergy will provide the results of its review to NEI for its consideration in revising NEI document 09-07 "Fostering a Strong Nuclear Safety Culture." Entergy will make the results of this review available for NRC review.

(2) Findings and Observations

No findings were identified. As addressed in CR-JAF-2012-00966, CA 40, Entergy staff performed a review of EN-QV-136, "Nuclear Safety Culture Monitoring," Revision 0, and concluded that, in all likelihood, the procedure would not have detected the safety culture weaknesses that led to the misconduct that formed the basis for the CO. Entergy staff determined that the procedure should have a greater focus on data analysis, discussion of safety culture issues, and developing actions to address safety culture weaknesses, with less emphasis on data sorting and review. To incorporate recommended changes Entergy staff developed revision 1 of EN-QV-136 which became effective on July 11, 2012. Additionally, by letter dated August 3, 2012 (ML12229A542) Entergy staff informed the NRC of that Entergy had provided the results of its review of NEI 09-07 to NEI for its consideration in revising NEI 09-07. This closes item 4.D.

.3 (Closed) Temporary Instruction 2515/187 - Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdownsa. Inspection Scope

The inspectors verified that the licensee's walkdown packages for manhole 1 and reactor building roof drains 7-9 contained the elements specified in the NEI 12-07 Walkdown Guidance document.

The inspectors accompanied FitzPatrick on their walkdown of headwalls 1 and 2 and verified that the licensee performed the following:

- Visual inspection for indications of degradation that would prevent the functionality of the flood protection feature
- Critical SSC dimensions were measured
- Available physical margin, where applicable, was determined.

The inspectors independently performed a walkdown of the screenwell pump house and verified that the following:

- Safety-related SSCs and those important to safety were appropriately protected from area flooding via curbing or location above expected flood water levels
- The licensee followed their walkdown procedure
- Available physical margin was determined
- CRs were written for any degraded conditions

The inspectors verified that noncompliances with current licensing requirements and issues identified in accordance with the 10 CFR 50.54(f) letter, Item 2.g of Enclosure 4, were entered into the licensee's corrective action program. In addition, issues identified in response to Item 2.g that could challenge risk significant equipment and the licensee's ability to mitigate the consequences will be subject to additional NRC evaluation.

b. Findings

No findings were identified.

.4 (Closed) Temporary Instruction 2515/188 - Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns

a. Inspection Scope

The inspectors accompanied the licensee on their seismic walkdowns of the following equipment and walkbys of the associated areas. Seismic walkdown equipment list (SWEL) numbers are in parentheses.

- 'A' spent fuel pool cooling pump (SWEL 2-8), reactor building 326 foot elevation, on September 20, 2012
- 'D' EDG (SWEL 1-635), EDG building 272 foot elevation, on September 27, 2012
- 4160 V switchgear Bus 10500 (SWEL 1-430, 1-433), EDG building 272 foot elevation, on October 31, 2012

The inspectors independently performed walkdowns of control rod drive hydraulic control unit 02-19 water accumulator (SWEL 1-43) and the 'A' core spray pump (SWEL 1-171) in the reactor building (272 foot and 227 foot elevations, respectively) on November 20, 2012.

The following seismic features were verified during both the accompanied and independent walkdowns, as applicable:

- Anchorage was free of bent, broken, missing or loose hardware
- Anchorage was free of corrosion that is more than mild surface oxidation
- Anchorage was free of visible cracks in the concrete near the anchors
- Anchorage configuration was consistent with plant documentation
- SSCs will not be damaged from impact by nearby equipment or structures
- Overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls are secure and not likely to collapse onto the equipment

- Attached lines have adequate flexibility to avoid damage
- The area appears to be free of potentially adverse seismic interactions that could cause flooding or spray in the area
- The area appears to be free of potentially adverse seismic interactions that could cause a fire in the area
- The area appears to be free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)

Observations made during the walkdowns that could not be determined to be acceptable were entered into the licensee's corrective action program for evaluation. Additionally, inspectors verified that items that could allow the spent fuel pool to drain down rapidly were added to the SWEL and these items were walked down by the licensee.

b. Findings

No findings were identified.

.5 Institute of Nuclear Power Operations (INPO) Report Review

a. Inspection Scope

The inspectors reviewed the final report for the INPO plant assessment of the James A. FitzPatrick Nuclear Power Plant conducted in February 2012. The inspectors reviewed this report to ensure that any issues identified were consistent with NRC perspectives of Entergy's performance and to determine if INPO identified any significant safety issues that required further NRC follow-up.

b. Findings

No findings were identified.

.6 Follow-up Inspection for Three or More Severity Level IV Traditional Enforcement Violations in the Same Area in a 12-Month Period (IP 92723)

a. Inspection Scope

The inspectors performed a follow-up inspection in accordance with inspection procedure (IP) 92723 for three Severity Level (SL) IV Traditional Enforcement violations in the area of potential for impacting the Regulatory Process that occurred in the second half of 2011 and first half of 2012. Consistent with guidance in IP 92723, multiple traditional enforcement violations in the same area should result in the licensee examining the group of violations to identify any commonalities. This follow-up inspection is designed to look at the licensee's evaluation of the group of violations.

The following traditional enforcement violations were the subject of this inspection:

- A SL IV NCV of 10 CFR Part 50.73, "Licensee Event Report [LER] System," because a violation of TS 3.5.1.G for the condition of the high pressure coolant injection and

- reactor core isolation cooling systems being simultaneously inoperable was not reported to the NRC within 60 days of discovery. (IR 2012-002; March 30, 2012)
- A SL IV NCV of 10 CFR 50.74, "Notification of Change in Operator or Senior Operator Status," because Entergy did not notify the NRC within 30 days of discovering a change in medical condition for a licensed operator. (IR 2012-301; April 24, 2012)
  - A SL IV NCV of 10 CFR 50.71(e) because Entergy personnel did not update the UFSAR - Emergency Bus Voltage Consistent with Current Plant Conditions. (IR 2011-003; June 30, 2011)

The objectives of the inspection were to determine whether Entergy personnel:

- Provided assurance that the causes of multiple SL IV Traditional Enforcement violations were understood
- Provided assurance that the extent of condition and extent of cause of multiple SL IV Traditional Enforcement violations were identified
- Provided assurance that corrective actions for the SL IV Traditional Enforcement violations were sufficient to address the causes

The inspectors reviewed condition reports, procedures, and relevant references to the violations. The inspectors also interviewed management and staff personnel who were familiar with the violations and participated in the evaluation or corrective actions.

#### b. Findings and Observations

The inspectors determined that Entergy staff did not conduct a collective evaluation or implement a systematic method to evaluate the group of violations to determine common causes or ascertain whether there were commonalities amongst the group of traditional enforcement violations. Additionally, the inspectors did not identify relevant corrective action documentation that FitzPatrick personnel considered such a review or that the station's pre-inspection assessment identified or conducted this type of review.

Based on a limited independent review expanded to include relevant information from 2010 through 2012, the inspectors identified two commonalities amongst the violations. Specifically, the inspectors noted that all three violations were NRC-identified violations (vice self-revealing and/or licensee-identified) and had aspects that potentially indicate interface weaknesses when multiple departments interact to meet required NRC regulatory processes/reporting items (i.e. UFSAR/LER reporting process). In particular, while the inspectors did not attempt to assess whether the Licensing Department functions were a primary or contributing cause to the NCVs, the inspectors identified that Licensing Department administrative responsibilities appeared to be involved in all three violations that impacted the regulatory process. The inspectors also identified another prior occurrence in 2011 that would be considered to impact the regulatory processes and similarly involved licensing department administrative responsibilities. Specifically, the inspectors noted that a minor violation regarding inaccurate 2011 NRC PI submittals for unplanned down powers was identified and documented by the NRC in inspection report (IR) 05000333/2012002. The NRC identified the issue in 2011 (Unresolved Item (URI) 2011004-01) and the NRC and Industry's frequently asked question (FAQ) process determined that the station's omission of three down powers was not correct or consistent with PI reporting guidance.

Overall, the inspectors concluded that Entergy did not meet the inspection objectives of NRC IP 92723. However, the inspectors did not identify a regulatory violation or standard that was not met. The results of this inspection may be considered by the NRC in evaluating and dispositioning future traditional enforcement violations that impact the regulatory process or have similar performance aspects. Entergy staff issued CR-JAF-2012-08880 to address these observations.

4OA6 Meetings, Including Exit

On January 18, 2013, the inspectors presented the inspection results to Mr. Michael Colomb, Site Vice President, and other members of the FitzPatrick staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

ATTACHMENT: SUPPLEMENTARY INFORMATION

**SUPPLEMENTARY INFORMATION****KEY POINTS OF CONTACT**Entergy Personnel

M. Colomb, Site Vice President  
 C. Adner, Manager, Licensing  
 C. Brown, Manager, Quality Assurance, Entergy  
 B. Finn, Director, Nuclear Safety Assurance  
 T. Hunt, Manager, Corrective Action and Assessment  
 K. Irving, Manager, Programs and Components Engineering  
 D. Poulin, Manager, Operations  
 T. Redfearn, Manager, Security  
 M. Reno, Manager, Maintenance  
 E. Riley, License Renewal Project Manager  
 B. Sullivan, General Manager, Plant Operations  
 D. Wallace, Director, Engineering  
 E. Wolfe, Manager, Radiation Protection

**LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED**Opened/Closed

05000333/2012005-01	NCV	Failure to Install Reserve Station Service Transformers in Accordance with Procedure (Section 4OA3)
05000333/2012005-02	NCV	Failure of 'A' EDG Output Breaker to Close Following Loss of Offsite Power (Section 4OA3)
05000333/2515/187	TI	Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns (Section 4OA5)
05000333/2515/188	TI	Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns (Section 4OA5)

## LIST OF DOCUMENTS REVIEWED

### **Section 1R01: Adverse Weather Protection**

#### Procedures

AOP-13, "High Winds, Hurricanes and Tornadoes," Revision 19  
AP-12.04, "Seasonal Weather Preparations," Revision 19  
ENS-EP-302, "Severe Weather Response," Revision 11  
OP-4, "Circulating Water System," Revision 71  
OP-22, "Diesel Generator Emergency Power," Revision 58  
OP-51A, "Reactor Building Ventilation and Cooling System," Revision 49  
OP-60, "Diesel Generator Room Ventilation," Revision 8  
SAP-19, "Severe Weather," Revision 6

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

ODSO-4, "Shift Turnover and Log Keeping," Revision 108  
OP-20, "Standby Gas Treatment System," Revision 37  
OP-21, "Emergency Service Water," Revision 38  
OP-22, "Diesel Generator Emergency Power," Revision 58  
OP-43A, "125 VDC Power System," Revision 27

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

#### Procedures

EN-TQ-125, "Fire Brigade Drills," Revision 1  
PFP-PWR04, "Battery Room Complex/ Elev. 272', 282' Fire Area/Zone III/BR-1, BR-2, IV/BR-3, BR-4, XVI/BR-5, Revision 2  
PFP-PWR11, "Cable Spreading Room/Elev. 272' Fire Area/Zone VII/CS-1, Revision 2  
PFP-PWR23, "Motor Generator Set Room/Elev. 300' Fire Area/Zone IA/MG-1, Revision 4  
PFP-PWR32, "Emergency Diesel Generator Spaces-south Elev. 272' Fire Area/Zone VI/EG-3, EG-4, EG-6," Revision 5  
PFP-PWR28, "Reactor Building/Elev. 369' Fire Area/Zone IX/RB-1A," Revision 7

#### Documents

CR-JAF-2012-08848  
JAF-RPT-04-00478, "JAF Fire Hazards Analysis," Revision 2

### **Section 1R11: Licensed Operator Requalification Program**

OP-65, "Startup and Shutdown Procedure," Revision 114

### **Section 1R12: Maintenance Effectiveness**

#### Procedures

EN-DC-203, "Maintenance Rule Program," Revision 1  
EN-DC-204, "Maintenance Rule Scope and Basis," Revision 2  
EN-DC-205, "Maintenance Rule Monitoring," Revision 4  
EN-DC-206, "Maintenance Rule (a)(1) Process," Revision 2

Documents

JENG-APL-12-002, Maintenance Rule (a)(1) Action Plan for the Analog Transmitter Trip System, Revision 0

System Health Report for 02-3 - Nuclear Boiler Instrumentation, third quarter 2012

JAF-RPT-NMS-02278, "Maintenance Rule Basis Document System 07 Neutron Monitoring" System Health Report for Neutron Monitoring System for fourth quarter 2011 through third quarter 2012

Work Orders

WO 302288

WO 319704

WO 319708

WO 319702

WO 319707

WO 319717

Condition Reports

CR-JAF-2010-05256

CR-JAF-2012-05661

CR-JAF-2012-07210

CR-JAF-2010-06720

CR-JAF-2012-05669

CR-JAF-2012-07419

CR-JAF-2010-07103

CR-JAF-2012-05725

CR-JAF-2012-07441

CR-JAF-2011-00605

CR-JAF-2012-05763

CR-JAF-2012-07453

CR-JAF-2011-06437

CR-JAF-2012-05869

CR-JAF-2012-07552

CR-JAF-2011-06509

CR-JAF-2012-05959

CR-JAF-2012-07575

CR-JAF-2012-00484

CR-JAF-2012-06285

CR-JAF-2012-07579

CR-JAF-2012-02212

CR-JAF-2012-06346

CR-JAF-2012-07583

CR-JAF-2012-02495

CR-JAF-2012-06366

CR-JAF-2012-07688

CR-JAF-2012-02567

CR-JAF-2012-06560

CR-JAF-2012-07936

CR-JAF-2012-02732

CR-JAF-2012-06578

CR-JAF-2012-08110

CR-JAF-2012-03740

CR-JAF-2012-06626

CR-JAF-2012-08131

CR-JAF-2012-04288

CR-JAF-2012-06680

CR-JAF-2012-08344

CR-JAF-2012-05443

CR-JAF-2012-06824

CR-JAF-2012-08347

CR-JAF-2012-05444

CR-JAF-2012-06981

**Section 1R13: Maintenance Risk Assessments and Emergent Work Control**

AP-10.10, "On-Line Risk Assessment," Revision 8

EN-OP-119, "Protected Equipment Postings," Revision 5

EN-WM-104, "On Line Risk Assessment," Revision 7

**Section 1R15: Operability Determinations and Functionality Assessments**Procedures

EN-OP-104, "Operability Determination Process," Revision 6

EN-RE-216, "Channel-Control Blade Interference Monitoring," Revision 2

RAP-7.3.39, "Channel - Control Blade Interference Monitoring," Revision 2

Documents

ECH-NE-12-00011, "SC 11-05 Sampling Plan," Revision 0

ECH-NE-11-00080, "FitzPatrick C20 Channel-Control Blade Interference Monitoring Plan," Revision 2

Operability Evaluation for CR-JAF-2011-04144

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

FPP-3.53, "Transformer 71T-2 Deluge Operability Test," Revision 2  
 MP-002.04, "Reactor Vessel Safety/Relief Valve (SRV) Maintenance (IST), Revision 36  
 RAP-7.4.01, "Control Rod Scram Time Evaluation," Revision 26  
 ST-1B, "MSIV Fast Closure Test (IST)," Revision 25  
 ST-21F, "Main Turbine Overspeed Trip Device and Mechanical Trip Valve Test," Revision 8  
 ST-22K, "Manual Safety Relief Valve Operation System Test (IST), Revision 2  
 ST-39H, "RPV System Leakage Test and CRD Class 2 Piping Inservice Test (ISI)," Revision 30

Documents

CR-JAF-2012-06714  
 CR-JAF-2012-07218  
 CR-JAF-2012-07674  
 WO 27786

**Section 1R20 Refueling and Other Outage Activities**Procedures

AP-10.09, "Outage Risk Assessment," Revision 32  
 OP-13D, "RHR-Shutdown Cooling," Revision 24  
 OP-30A, "Refueling Water Level Control," Revision 16  
 OP-65, "Startup and Shutdown Procedure," Revisions 113 and 114  
 OSP-66.001, "Management of Refueling Activities," Revision 2

Documents

R20, "Schedule Risk Assessment Based on Schedule Issued 8/6/12, dated 9/15/12," Revision 1

**Section 1R22: Surveillance Testing**Condition Reports

CR-JAF-2012-05469	CR-JAF-2012-06718
CR-JAF-2012-06607	CR-JAF-2012-07282

**Section 2RS1: Radiological Hazard Assessment and Exposure Controls**Procedures

EN-RP-101, "Access Control for Radiologically Controlled Areas," Revision 6  
 EN-RP-108, "Radiation Protection Posting," Revision 11  
 EN-RP-121, "Radioactive Material Control," Revision 6

Surveys Reviewed

JAF-1209-0599, 9/27/12	JAF-1209-0347, 9/20/12	JAF-1209-0309, 9/19/12
JAF-1209-0563, 9/26/12	JAF-1209-0339, 9/20/12	JAF-1209-0291, 9/19/12
JAF-1209-0579, 9/26/12	JAF-1209-0335, 9/20/12	JAF-1209-0292, 9/19/12
JAF-1209-0539, 9/25/12	JAF-1209-0334, 9/20/12	JAF-1209-0278, 9/19/12
JAF-1209-0470, 9/24/12	JAF-1209-0326, 9/20/12	JAF-1209-0284, 9/19/12
JAF-1209-0522, 9/24/12	JAF-1209-0322, 9/20/12	JAF-1209-0273, 9/18/12
JAF-1209-0120, 9/13/12	JAF-1209-0301, 9/19/12	JAF-1209-0264, 9/18/12
JAF-1209-0353, 9/20/12	JAF-1209-0298, 9/19/12	JAF-1209-0279, 9/18/12

JAF-1209-0235, 9/17/12	JAF-1209-0191, 9/17/12	JAF-1209-0165, 9/16/12
JAF-1209-0223, 9/17/12	JAF-1209-0185, 9/17/12	JAF-1209-0162, 9/16/12
JAF-1209-0216, 9/17/12	JAF-1209-0183, 9/17/12	JAF-1209-0161, 9/16/12
JAF-1209-0210, 9/17/12	JAF-1209-0167, 9/16/12	

Condition Reports

CR-JAF-2012-05505	CR-JAF-2012-05589	CR-JAF-2012-05622
CR-JAF-2012-05523	CR-JAF-2012-05591	CR-JAF-2012-05666
CR-JAF-2012-05528	CR-JAF-2012-05594	
CR-JAF-2012-05539	CR-JAF-2012-05611	

**Section 2RS2: Occupational ALARA Planning and Controls**Procedures

EN-RP-110, "ALARA Program," Revision 9  
 EN-RP-110-1, "ALARA Initiative Deferrals," Revision 1  
 EN-RP-110-4, "Radiation Protection Risk Assessment Process," Revision 2  
 EN-RP-121, "Radioactive Material Control," Revision 6

Condition Report

CR-JAF-2012-05595

**Section: 2RS3: In-Plant Airborne Radioactivity Control and Mitigation**Procedures

EN-RP-131, "Air Sampling," Revision 9

Air Samples Reviewed

<u>Sampler Number</u>	<u>Survey Number</u>	<u>Date</u>
1146	120125	9/19/12
1115	120225	9/25/12
1114	120226	9/25/12
1114	120227	9/25/12

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

EN-LI-102, "Corrective Action Process," Revision 19  
 EN-LI-121, "Energy Trending Process," Revision 12  
 EN-OP-117, "Operations Assessments," Revision 4

Condition Reports

CR-JAF-2012-03300	CR-JAF-2012-03560	CR-JAF-2012-04054
CR-JAF-2012-03323	CR-JAF-2012-03752	CR-JAF-2012-04198
CR-JAF-2012-03405	CR-JAF-2012-03786	CR-JAF-2012-04217
CR-JAF-2012-03415	CR-JAF-2012-03844	CR-JAF-2012-04296
CR-JAF-2012-03441	CR-JAF-2012-03863	CR-JAF-2012-04313
CR-JAF-2012-03503	CR-JAF-2012-04017	CR-JAF-2012-04448
CR-JAF-2012-03521	CR-JAF-2012-04043	CR-JAF-2012-04455

CR-JAF-2012-04473	CR-JAF-2012-05315	CR-JAF-2012-06492
CR-JAF-2012-04485	CR-JAF-2012-05398	CR-JAF-2012-06835
CR-JAF-2012-04486	CR-JAF-2012-05444	CR-JAF-2012-07370
CR-JAF-2012-04509	CR-JAF-2012-05661	CR-JAF-2012-07518
CR-JAF-2012-04510	CR-JAF-2012-05725	CR-JAF-2012-07662
CR-JAF-2012-04514	CR-JAF-2012-05763	CR-JAF-2012-07759
CR-JAF-2012-04948	CR-JAF-2012-06285	CR-JAF-2012-07882
CR-JAF-2012-05174	CR-JAF-2012-06346	CR-JAF-2012-07985
CR-JAF-2012-05233	CR-JAF-2012-06366	CR-JAF-2012-08040
CR-JAF-2012-05239	CR-JAF-2012-06403	CR-JAF-2012-08643
CR-JAF-2012-08880	CR-JAF-2012-07049	CR-JAF-2012-07768
CR-JAF-2012-06558	CR-JAF-2012-07135	CR-JAF-2012-07792
CR-JAF-2012-06632	CR-JAF-2012-07164	CR-JAF-2012-07799
CR-JAF-2012-06718	CR-JAF-2012-07252	CR-JAF-2012-07815
CR-JAF-2012-06743	CR-JAF-2012-07371	CR-JAF-2012-08050
CR-JAF-2012-06822	CR-JAF-2012-07378	CR-JAF-2012-08137
CR-JAF-2012-06824	CR-JAF-2012-07515	CR-JAF-2012-08265
CR-JAF-2012-06847	CR-JAF-2012-07656	CR-JAF-2012-08344
CR-JAF-2012-06900	CR-JAF-2012-07674	CR-JAF-2012-08464
CR-JAF-2012-06934	CR-JAF-2012-07735	CR-JAF-2012-08466
CR-JAF-2012-07011	CR-JAF-2012-07754	

#### Documents

LO-WTJAF-2012-0193

WO 00320090

Operations Performance Summaries (PIs) for June through November 2012

#### **Section 40A3: Follow-Up of Events and Notices of Enforcement Discretion**

AP-03.01, "Post Transient Evaluation," Revision 13

CR-JAF-2012-7901

OP-11A, "Main Generator, Transformers and Isolated Bus Phase Cooling," Revision 43

OP-65, "Startup and Shutdown Procedure," Revision 114

ST-22F, "Main Turbine Overspeed Trip Device and Mechanical Trip Valve Test," Revision 8

#### **Section 40A5: Other Activities**

##### Documents

CR-JAF-2012-996 CA 39, "Snapshot Assessment/Benchmark on EN-QV-136 Safety Culture Monitoring"

EN-QV-136, "Nuclear Safety Culture Monitoring," Revision 1

ENOC-12-00024, "NRC Confirmatory Order EA-10-248, EA-11-106 Section V.D: Review and Revision of EN-QV-136," dated August 3, 2012

##### Commitment 1 (Buried Piping and Tanks)

A-18341, "Commitment Closure Verification Form," April 27, 2012

JAF-RPT-09-LR001, "Buried Piping and Tanks Inspection AMP Implementation," Revision 0

EN-DC-343, "Underground Piping and Tank Inspection and Monitoring Program," Revision 4

B12UT016, "UT Examination of 10" CST yard piping," August 1, 2012

B12UT017, "UT Examination of 12" CST yard piping," August 1, 2012

Buried Piping General Visual Inspection - 10" CST yard piping, August 1, 2012

Buried Piping General Visual Inspection - 12" CST yard piping, August 1, 2012  
LinTec, Underground Piping Inspection - 10" CST/HPCI, August 6, 2012  
LinTec, Underground Piping Inspection - 12" CST/CS, August 2, 2012  
LO-LAR-2012-00004, Corrective Action 186

Commitment 3 (Diesel Fuel)

A-18345, "Commitment Closure Verification Form," May 3, 2012  
JAF-RPT-09-LR009, "Diesel Fuel Monitoring AMP Implementation," Revision 0  
Calculation JAF-CAL-12-00005, "Required Wall Thickness for Fuel Oil Storage Tanks, Fuel Oil Day Tanks, and Fire Pump Diesel Oil Tank," Revision 0  
Drawing 11825-FV-17A, "Fuel Oil Storage Tanks; 93-TK-6A,-6B,-6C, and -6D," Revision 4  
CEP-NDE-0505, "Ultrasonic Thickness Examination," Revision 4  
EN-WM-105, "Clean and inspect EDG day tank"  
Model WO 000290314, Drain, clean, inspect and UT day tank (93-TK-7A)  
Model WO 51188388, Underground fuel tank (93-TK-6A) - clean and UT  
WM-105-00, Clean and inspect fuel oil tank  
Record of diesel fuel oil storage tank cleanings/VT available through electronic search, October 3, 2012  
LO-LAR-2012-00004, Corrective Actions 181, 182, 183, 185

Commitment 7 (Heat Exchangers)

A-18349, "Commitment Closure Verification Form"  
JAF-RPT-09-LR015, "Heat Exchanger Monitoring Program Implementation," Revision 0  
EN-DC-316, "Heat Exchanger Performance and Condition Monitoring," Revision 3  
SEP-HX-JAF-001, "Eddy Current Testing of Heat Exchangers," Revision 0  
LO-WTJAF-2011-00124

Commitment 12 (One-Time Inspection)

JAF-RPT-09-LR021, "One-Time Inspection AMP Implementation," Revision 0  
EN-FAP-LR-024, "One-Time Inspection," Revision 0  
JAF OTI Status Report, October 1, 2012  
Completed One-Time Inspections, October 1, 2012  
Remaining One-Time Inspections, October 1, 2012  
OTI by Environment Sample Plan, October 4, 2012  
OTI Inspection 52216405-01: C EDG fuel oil duplex filters 4C and 5C

Commitment 15 (Selective Leaching)

A-18357, "Commitment Closure Verification Form," April 7, 2012  
JAF-RPT-09-LR025, "Selective Leaching Program Implementation," Revision 0  
EN-FAP-LR-025, "Selective Leaching Inspection," Revision 3  
Leaching WO Inspections, October 4, 2012

Miscellaneous

NRC Inspection Report 05000333/2011-004  
NRC Inspection Report 05000333/2011-005  
NRC Inspection Report 05000333/2012-002  
NRC Inspection Report 05000333/2012-003  
[www.nrc.gov/NRR/Oversight/Assess/Fitz/fitz\\_pi](http://www.nrc.gov/NRR/Oversight/Assess/Fitz/fitz_pi) for #Q/2012  
EN-LI-114, NRC Performance Indicator Technique/Data Sheet - 3<sup>rd</sup> Quarter 2012  
MSPI/WANO PI Data Sheets for Emergency AC - EDG (September 2011 - August 2012) and associated station narrative logs

Selected EDG Demand Logs between September 2011 and August 2012  
MSPI/WANO PI Data Sheets for Cooling Water Support Systems - ESW & RHRSW (September 2011 - August 2012) and associated station narrative logs  
MSPI/WANO PI Data Sheets for High Pressure Injection - HPCI (September 2011 - August 2012) and associated station narrative logs  
MSPI/WANO PI Data Sheets for Residual Heat Removal - RHR (September 2011 - August 2012) and associated station narrative logs  
MSPI/WANO PI Data Sheets for Heat Removal - RCIC (September 2011 - August 2012) and associated station narrative logs  
LO-HQNLO-2007-0076, Corrective Action 11

## LIST OF ACRONYMS

10 CFR	Title 10, Code of Federal Regulations
ADAMS	Agencywide Documents Access and Management System
ADR	alternative dispute resolution
ALARA	as low as is reasonably achievable
AMP	aging management program
BWR	boiling water reactor
CA	corrective action
CAM	continuous air monitor
CAP	corrective action program
CASS	cast austenitic stainless steel
CO	confirmatory order
CR	condition report
CST	condensate storage tank
CT	current transformer
DHR	decay heat removal
EC	engineering change
EDG	emergency diesel generator
Entergy	Entergy Nuclear Northeast
EPD	electronic personal dosimeter
ESW	emergency service water
FAQ	frequently asked question
FitzPatrick	James A. FitzPatrick Nuclear Power Plant
GET	general employee training
HPCI	high pressure coolant injection
HRA	high radiation area
IMC	inspection manual chapter
INPO	Institute of Nuclear Power Operations
IP	inspection procedure
IR	inspection report
ISI	in-service inspection
IST	in-service test
KV	kilovolt
LER	licensee event report
LHRA	locked high radiation area
LRA	license renewal application
MSIV	main steam isolation valve
MSPI	mitigating systems performance index
NCV	non-cited violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
NSST	normal station service transformer
PARS	Publicly Available Records
PEO	period of extended operations
PI	performance indicator
PMT	post-maintenance test
PWR	pressurized water reactor

R20	refueling outage 20
RCIC	reactor core isolation cooling
RG	Regulatory Guide
RHR	residual heat removal
RP	radiation protection
RSST	reserve station service transformer
RWP	radiation work permit
SDP	significant determination process
SER	safety evaluation report
SGT	standby gas treatment
SL	severity level
SRV	safety relief valve
SSC	structure, system, or component
ST	surveillance test
SWEL	seismic walkdown equipment list
TS	technical specification
UFSAR	updated final safety analysis report
URI	unresolved item
UT	ultrasonic testing
VAC	volt alternating current
VHRA	very high radiation area
WANO	World Association of Nuclear Operators
WO	work order