



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION I  
2100 RENAISSANCE BLVD.  
KING OF PRUSSIA, PA 19406-2713

November 10, 2016

Mr. Brian Sullivan  
Site Vice President  
Entergy Nuclear Northeast  
James A. FitzPatrick Nuclear Power Plant  
P.O. Box 136  
Lycoming, NY 13093

SUBJECT: JAMES A. FITZPATRICK NUCLEAR POWER PLANT - INTEGRATED  
INSPECTION REPORT 05000333/2016003

Dear Mr. Sullivan:

On September 30, 2016, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your James A. FitzPatrick Nuclear Power Plant (FitzPatrick). On October 20, 2016, the NRC inspectors discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

NRC inspectors documented one finding of very low safety significance (Green) in this report. The finding did not involve a violation of NRC requirements.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

**/RA/**

Arthur L. Burritt, Chief  
Reactor Projects Branch 5  
Division of Reactor Projects

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

Enclosure:  
Inspection Report 05000333/2016003  
w/Attachment: Supplementary Information

cc w/encl: Distribution via ListServ

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Site Vice President  
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**U.S. NUCLEAR REGULATORY COMMISSION****REGION I**

Docket No. 50-333

License No. DPR-59

Report No. 05000333/2016003

Licensee: Entergy Nuclear Northeast (Entergy)

Facility: James A. FitzPatrick Nuclear Power Plant

Location: Scriba, NY

Dates: July 1, 2016, through September 30, 2016

Inspectors: E. Miller, Senior Resident Inspector  
B. Sienel, Resident Inspector  
S. Barr, Senior Emergency Preparedness Inspector  
R. Rolph, Health Physicist

Approved by: Arthur L. Burritt, Chief  
Reactor Projects Branch 5  
Division of Reactor Projects

Enclosure

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## SUMMARY

Inspection Report 05000333/2016003; 07/01/2016 – 09/30/2016; James A. FitzPatrick Nuclear Power Plant (FitzPatrick); Follow-Up of Events and Notices of Enforcement Discretion.

This report covered a three-month period of inspection by resident inspectors and announced inspections performed by regional inspectors. The inspectors identified one finding of very low safety significance (Green). The significance of most findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," dated April 29, 2015. Cross-cutting aspects are determined using IMC 0310, "Aspects Within the Cross-Cutting Areas," dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated August 1, 2016. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 6.

### Cornerstone: Initiating Events

- Green. A self-revealing Green finding (FIN) was identified for Entergy staff's failure to properly implement the requirements of EN-DC-324, "Preventive Maintenance Program," Revision 16, to ensure proper preventive maintenance (PM) was implemented for non-safety-related 4KV transformer 71T-5. Specifically, Action Request (AR) 127566, PM change request to perform inspection, cleaning, and electrical testing of 4KV transformer 71T-5 was retired without a review by engineering as required by the PM program. As a result, transformer 71T-5 remained in service beyond its effective life without proper condition monitoring and maintenance, leading to its failure and a reactor scram on June 24, 2016. Entergy staff developed corrective actions to address the failure which included replacement of the transformer and re-establishing the condition monitoring and PM task. Entergy also performed an extent of condition review that confirmed the PM to clean, inspect, and test similar non-safety-related dry-type transformers was still active and performed within its required frequency.

This finding is more than minor because it is associated with the Equipment Performance attribute of the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Specifically, Entergy staff failed to ensure an adequate PM was in place for transformer 71T-5. The PM to ensure adequate cleaning and testing was cancelled in 2011, and transformer 71T-5 ultimately failed on June 24, 2016, resulting in a manual reactor scram. In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 1 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) because although the performance deficiency caused a reactor scram, it did not result in the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. The inspectors did not assign a cross-cutting aspect to this finding because it is not indicative of current licensee performance. Specifically, the performance deficiency was determined to have occurred in 2011, the guidance in EN-DC-324 is clear regarding the PM change process, and no additional failures to follow the process have resulted in significant reactor transients. (Section 4OA3)

## REPORT DETAILS

### Summary of Plant Status

FitzPatrick began the inspection period shut down due to a forced outage associated with a reactor scram on June 24, 2016. On July 6, operators commenced a reactor startup and achieved criticality. On July 7, operators synchronized the turbine-generator to the electrical grid. On July 8, operators achieved 84 percent power, and subsequently reduced power to 64 percent following the identification of an oil sheen on Lake Ontario. Following resolution of the oil sheen, operators restored power to 84 percent. Maximum power was limited to 84 percent due to repairs associated with a condensate booster pump. On July 28, operators reduced reactor power to 75 percent to perform condenser waterbox cleaning and a rod pattern adjustment. The unit was restored to 84 percent power on July 29. On August 19, following repairs to the condensate booster pump, operators raised reactor power to 93 percent. The reduced power of 93 percent was the maximum power achievable due to fuel depletion as FitzPatrick is at the end of this operating cycle. The maximum power will continue to decrease (coast down) until the refueling outage which is planned for the first quarter of 2017. On August 21, FitzPatrick experienced an unexpected trip of the 'A' reactor water recirculation (RWR) pump and a 44 percent runback of the 'B' RWR pump. Operators maintained power at 44 percent following the transient. On August 22, operators raised reactor power to 51 percent following restoration of the 'B' RWR pump to full speed. On August 24, power was again reduced to 44 percent when operators experienced a runback of the 'B' RWR pump during feedwater (FW) system calibration. Operators restored power to 49 percent following troubleshooting of the 'B' RWR runback on August 25. On August 26, following repairs to the 'A' RWR system, operators began power ascension concurrently with post-maintenance testing of the RWR system. On August 28, reactor power was restored to 91 percent and coastdown to the refueling outage continued. On September 14, 2016, FitzPatrick experienced a trip of the 'B' FW pump, and runback of the RWR system to 54 percent. On September 21, operators restored reactor power to approximately 83 percent following repairs to the 'B' FW pump. FitzPatrick coasted down to 80 percent power by the end of the inspection period.

## 1. REACTOR SAFETY

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

#### 1R04 Equipment Alignment

##### .1 Partial System Walkdown (71111.04 - 4 samples)

##### a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

- 'B' control room emergency ventilation air system (CREVAS) during planned 'A' CREVAS maintenance on August 16, 2016
- 'A' residual heat removal (RHR) system during planned 'B' RHR maintenance on August 23, 2016
- 'A' standby liquid control (SLC) system during planned 'B' SLC maintenance on August 24, 2016
- High pressure coolant injection (HPCI) system during emergent reactor core isolation cooling system maintenance on September 13, 2016

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 updated final safety analysis report (UFSAR), technical specifications (TSs), work orders (WOs), 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 corrective action program (CAP) for resolution with the appropriate significance characterization. Documents reviewed for each section of this report are listed in the Attachment.

b. Findings

No findings were identified.

.2 Full System Walkdown (71111.04S - 1 sample)

a. Inspection Scope

From August 23 – August 31, 2016, the inspectors performed a complete system walkdown of accessible portions of the HPCI system to verify the existing equipment lineup was correct. The inspectors reviewed operating procedures, drawings, surveillance tests, equipment lineup check-off lists, and the UFSAR to verify the system was aligned to perform its required safety functions. The inspectors also reviewed electrical power availability, component lubrication and equipment cooling, hanger and support functionality, and operability of support systems. The inspectors performed field walkdowns of accessible portions of the system to verify system components and support equipment were aligned correctly and operable. The inspectors confirmed that systems and components were aligned correctly, free from interference from temporary services or isolation boundaries, environmentally qualified, and protected from external threats. The inspectors also examined the material condition of the components for degradation and observed operating parameters of equipment to verify that there were no deficiencies. Additionally, the inspectors reviewed a sample of related CRs to ensure Entergy personnel appropriately evaluated and resolved any deficiencies.

b. Findings

No findings were identified.

1R05 Fire Protection

.1 Resident Inspector Quarterly Walkdowns (71111.05Q - 6 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 Entergy

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.

- Battery room 1, fire area/zone III/BR-1, on July 13, 2016
- Battery room 2, fire area/zone III/BR-2, on July 13, 2016
- Battery room 3, fire area/zone IV/BR-3 on July 13, 2016
- Low pressure coolant injection battery room 'A' on reactor building 344 foot elevation, fire area/zone 9/RB-1A on July 15, 2016
- Low pressure coolant injection battery room 'B' on reactor building 344 foot elevation, fire area/zone 9/RB-1A on July 15, 2016
- Administration building office area and heating, ventilation, and air conditioning equipment room 300 foot elevation following a fire in the 72FN-5 exhaust fan motor, fire area/zone 1A/AD-6 on September 6, 2016

b. Findings

No findings were identified.

.2 Fire Brigade Drill (71111.05A - 1 sample)

a. Inspection Scope

The inspectors observed an unannounced fire brigade drill conducted on September 22, 2016 that involved a fire in the auxiliary boiler room. The inspectors evaluated the readiness of the plant fire brigade to fight fires. The inspectors verified that Entergy personnel identified deficiencies, openly discussed them in a self-critical manner at the debrief, and took appropriate corrective actions as required. The inspectors evaluated the following specific attributes of the drill:

- Proper wearing of turnout gear and self-contained breathing apparatus
- Proper use and layout of portable fire extinguishers
- Employment of appropriate firefighting techniques
- Sufficient firefighting 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 Entergy's firefighting strategies.

b. Findings

No findings were identified.



1R11 Licensed Operator Regualification Program and Licensed Operator Performance  
(71111.11Q - 2 samples)

.1 Quarterly Review of Licensed Operator Regualification Testing and Training

a. Inspection Scope

On July 28, 2016, the inspectors observed licensed operator simulator training, which included a simulator scenario that involved the loss of the 10400 electrical bus and a loss of coolant accident, a HPCI failure to start, and RHR pump failure to start. 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

a. Inspection Scope

On July 6, 2016, the inspectors observed control room operators during a reactor startup following a forced outage. The inspectors observed crew briefs, reactivity manipulations using control rods, and synchronization of the generator to the grid. 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 - 3 samples)

a. Inspection Scope

The inspectors reviewed the samples listed below to assess the effectiveness of maintenance activities on structure, system, and component (SSC) performance and reliability. The inspectors reviewed system health reports, CAP documents, and maintenance rule basis documents to ensure that Entergy 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 of the *Code of Federal Regulations* (10 CFR) 50.65 and verified that the (a)(2) performance criteria established by Entergy 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 Entergy staff was identifying and addressing common cause failures that occurred within and across maintenance rule system boundaries.

- Structures Monitoring Program - turbine building on August 2, 2016
- 'A' emergency diesel generator (EDG) on August 30, 2016
- Decay heat removal system on September 21, 2016

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 - 6 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 maintenance on the 'B' residual heat removal service water pump and a planned downpower to perform condenser waterbox cleaning and a rod pattern adjustment the week of July 25, 2016
- Planned 'B' CREVAS maintenance on July 27, 2016
- Planned unavailability of the 'A' RHR pump during shutdown cooling line system flushes on August 19, 2016
- Unplanned 'A' RWR pump trip and planned 'B' RHR and 'B' SLC maintenance the week of August 22, 2016
- 'B' 125V station battery unavailability during the 'A' station battery charger 71BC-1A performance test on September 7, 2016
- Planned 'D' EDG and 'B' core spray system maintenance the week of September 19, 2016

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 - 6 samples)

a. Inspection Scope

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

- CR-JAF-2016-2802 concerning elevated bearing temperatures associated with the 'B' residual heat removal service water pump during torus cooling on July 27, 2016

- CR-JAF-2016-3012 concerning questions on instrumentation setup and therefore validity of surveillance test results for 'A' residual heat removal service water on August 11, 2016
- CR-JAF-2016-2204 regarding 'A' RHR system loop operability based on erratic operation of minimum flow valve 10MOV-16A on August 25, 2016
- CR-JAF-2016-3284 concerning operability of 'C' safety relief valve (SRV) following inspections of 'E' and 'F' SRVs on September 6, 2016
- CR-JAF-2016-3593 concerning the failure of CREVAS Damper 70MOD-108A limit switch which prevented 70FN-4A auto start on September 19, 2016
- CR-JAF-2016-3715 concerning operability of HPCI following a step change in speed and flow observed when taking the controller from automatic to manual during surveillance testing on September 26, 2016

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 TSs and UFSAR to Entergy staff'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 Entergy staff. 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 Permanent Modification – Safety Relief Valve Replacement

a. Inspection Scope

The inspectors evaluated the replacement of the 02RV-71E three-stage SRV with a two-stage SRV implemented by engineering change (EC) 64710, "Replace Three-Stage SRVs 02RV-71E and 02RV-71F with Two-Stage SRVs." The 'E' SRV serves a pressure relief function and also an automatic depressurization system (ADS) function. This EC was implemented following recent industry operating experience which identified a potential concern with the reliability of Target Rock three-stage SRVs. The 'E' SRV was originally a two-stage valve and was modified to the three-stage design in 2010. This EC restored the valve to its original configuration.

The inspectors verified that the design bases, licensing bases, and performance capability of the affected systems were not degraded by the modification. The inspectors reviewed EC 64710, the process applicability determination, the post-modification test plan, and the post-modification test results to verify that the modification did not degrade the performance capability of the ADS or pressure relief functions of the valve. The inspectors also performed a post-installation walkdown of the valve in the drywell.

b. Findings

No findings were identified.

.2 Permanent Modification – ‘D’ EDG Turbocharger Pressure Switch Setpoint Change

a. Inspection Scope

The inspectors evaluated a modification to the ‘D’ EDG turbocharger lube oil low pressure switch setpoint implemented by EC 62348, “Lower Trip Setpoint for 93PS-1D.” In November 2015, the low capacity turbocharger for the ‘D’ EDG was replaced with a high capacity turbocharger which has different internal clearances. This affected the lube oil pressure following EDG shutdown, causing the lube oil low pressure switch to actuate local and control room EDG annunciators. The purpose of the pressure switch is to alarm to indicate that the turbocharger lube oil pump is not working properly. This EC was implemented to prevent the pressure switch from unnecessarily tripping and alarming the associated annunciators following normal EDG operation.

The inspectors reviewed the EC, process applicability determination, calibration procedure change, and completed calibration procedure documentation. The inspectors also observed the post-maintenance test of the EDG. The inspectors verified that the design bases, licensing bases, and performance capability of the EDG were not degraded by the modification.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 - 4 samples)

a. Inspection Scope

The inspectors reviewed the post-maintenance tests 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 were 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.

- WO 445687 to replace outboard ‘D’ main steam isolation valve full open position switch 29PNS-86D3 on July 1, 2016
- WO 449453 to replace hydraulic control unit 34-07 accumulator on July 7, 2016
- WO 52687875 to replace ‘B’ RHR logic relay 10A-K65B on July 25, 2016
- WO 428059 to replace ‘B’ SLC pump 11P-2B packing on August 24, 2016

b. Findings

No findings were identified.

## 1R20 Refueling and Other Outage Activities (71111.20 - 1 sample)

### a. Inspection Scope

The inspectors monitored the station's work schedule and outage risk management for the forced outage that began on June 24, 2016, and was completed on July 7, 2016. The inspectors reviewed Entergy's implementation of outage plans and schedules to verify that risk, industry experience, previous site-specific problems, and defense-in-depth were considered. During the outage, the inspectors observed portions of the reactor startup, heatup, and synchronization to the grid and monitored controls associated with the following activities:

- Configuration management, including maintenance of defense-in-depth, to maintain the key safety functions and compliance with the applicable TSs when taking equipment out of service
- Implementation of clearance activities and confirmation that equipment was appropriately configured to safely support the associated work or testing
- Configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication
- Status and configuration of electrical systems and switchyard activities to ensure that TSs were met
- Monitoring of decay heat removal operations
- Activities that impacted the ability of the operators to operate the spent fuel pool cooling system
- Reactor water inventory controls, including flow paths, configurations, and alternative means for inventory additions
- Activities that could affect reactivity
- Maintenance of secondary containment as required by TSs
- Tracking of startup prerequisites
- Identification and resolution of problems related to outage activities

### b. Findings

No findings were identified.

## 1R22 Surveillance Testing (71111.22 - 6 samples)

### a. Inspection Scope

The inspectors observed performance of surveillance tests and/or reviewed test data of selected risk-significant SSCs to assess whether test results satisfied TSs, 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 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 surveillance tests:

- ST-9BA, 'A' and 'C' EDG Full Load Test and Emergency Service Water (ESW) Pump Operability Test, on July 11, 2016
- ESP-22.001, LOCA Bypass of 'A' and 'C' EDG Shutdown Logic Functional Test, on August 8, 2016
- ST-22C, ADS Logic System Functional Test, on August 11, 2016
- ISP-175A1, Reactor and Containment Cooling Instrument Functional Test/Calibration (ATTS), on August 23, 2016
- ISP-32-1A, 'A' RHR Loop Low Flow Bypass Valve Instrument Calibration, on September 9, 2016
- ST-9BB, 'B' and 'D' EDG Full Load Test and ESW Pump Operability Test, on September 20, 2016

b. Findings

No findings were identified.

**Cornerstone: Emergency Preparedness**

1EP2 Alert and Notification System (ANS) Evaluation (71114.02 - 1 sample)

a. Inspection Scope

An onsite review was conducted to assess the performance, maintenance, and testing of FitzPatrick's ANS. During this inspection, the inspectors conducted a review of the ANS testing and maintenance programs. The inspectors reviewed the associated ANS procedures and the Federal Emergency Management Agency-approved ANS Design Report to ensure compliance with design report commitments for system maintenance and testing. The inspection was conducted with 10 CFR 50.47(b)(5) and the related requirements of 10 CFR Part 50, Appendix E, as reference criteria.

b. Findings

No findings were identified.

1EP3 Emergency Response Organization Staffing and Augmentation System (71114.03 - 1 sample)

a. Inspection Scope

The inspectors conducted a review of Entergy's emergency response organization (ERO) on-shift and augmentation staffing requirements and the process for notifying and augmenting the ERO. The review was performed to verify the readiness of key staff to respond to an emergency event and to verify Entergy's ability to activate its emergency response facilities (ERFs) in a timely manner. The inspectors reviewed Entergy's emergency plan for ERF activation and ERO staffing requirements, the ERO duty roster, applicable station procedures, augmentation test reports, the most recent drive-in drill reports, and corrective action reports related to this inspection area. The inspectors also reviewed a sample of ERO responder training records to verify training and qualifications were up to date. The inspection was conducted with 10 CFR 50.47(b)(2) and related requirements of 10 CFR Part 50, Appendix E, as reference criteria.

b. Findings

No findings were identified.

1EP5 Maintenance of Emergency Preparedness (71114.05 - 1 sample)

a. Inspection Scope

The inspectors reviewed a number of activities to evaluate the efficacy of Entergy's efforts to maintain FitzPatrick's emergency preparedness (EP) program. The inspectors reviewed letters of agreement with offsite agencies, the 10 CFR 50.54(q) Emergency Plan change process and practice, Entergy's maintenance of equipment important to EP, records of evacuation time estimate population evaluation, and provisions for, and implementation of, primary and backup ERF maintenance. The inspectors also verified Entergy's compliance at FitzPatrick with NRC EP regulations regarding emergency action levels for hostile action events, protective actions for on-site personnel during events, emergency declaration timeliness, ERO augmentation and alternate facility capability, evacuation time estimate updates, and on-shift ERO staffing analysis.

The inspectors further evaluated Entergy's ability to maintain FitzPatrick's EP program through their identification and correction of EP weaknesses, by reviewing a sample of drill reports, actual event reports, self-assessments, 10 CFR 50.54(t) reviews, and EP-related CRs. The inspectors reviewed a sample of EP-related CRs initiated at FitzPatrick from January 2015 through June 2016. The inspection was conducted with 10 CFR 50.47(b) and the related requirements of 10 CFR Part 50, Appendix E, as reference criteria.

b. Findings

No findings were identified.

**2. RADIATION SAFETY**

**Cornerstone: Occupational and Public Radiation Safety**

2RS5 Radiation Monitoring Instrumentation (71124.05 - 3 samples)

a. Inspection Scope

The inspectors reviewed performance in assuring the accuracy and operability of radiation monitoring instruments used to protect occupational workers during plant operations and from postulated accidents. The inspectors used the requirements in 10 CFR 20, regulatory guides, applicable industry standards, and procedures required by TSs as criteria for determining compliance.

Inspection Planning

The inspectors reviewed Fitzpatrick's UFSAR, radiation protection audits, records of in-service survey instrumentation, and procedures for instrument source checks and calibrations.

### Walkdowns and Observations (1 sample)

The inspectors conducted walkdowns of plant area radiation monitors and continuous air monitors. The inspectors assessed the material condition of these instruments and that the monitor configurations aligned with the UFSAR. The inspectors checked the calibration and source check status of various portable radiation survey instruments and contamination detection monitors for personnel and equipment.

### Calibration and Testing Program (1 sample)

The inspectors reviewed the current detector and electronic channel calibration, functional testing results, alarm setpoints, and the use of scaling factors for the following radiation detection instrumentation:

- laboratory analytical instruments
- whole body counter
- containment high-range monitors
- portal monitors
- personnel contamination monitors
- small article monitors
- portable survey instruments
- area radiation monitors
- electronic dosimetry
- air samplers
- continuous air monitors

The inspectors reviewed the calibration standards used for portable instrument calibrations and response checks to verify that instruments were calibrated by a facility that used National Institute of Science and Technology traceable sources.

### Problem Identification and Resolution (1 sample)

The inspectors verified that problems associated with radiation monitoring instrumentation (including failed calibrations) were identified at an appropriate threshold and properly addressed in the CAP.

#### b. Findings

No findings were identified.

## 2RS6 Radioactive Gaseous and Liquid Effluent Treatment (71124.06 - 2 samples)

#### a. Inspection Scope

The inspectors reviewed the treatment, monitoring, and control of radioactive gaseous and liquid effluents. The inspectors used the requirements in 10 CFR 20; 10 CFR 50, Appendix I; TSs; Offsite Dose Calculation Manual; applicable industry standards; and procedures required by TSs as criteria for determining compliance.



### Walkdowns and Observations (1 sample)

The inspectors walked down the gaseous and liquid radioactive effluent monitoring and filtered ventilation systems to assess the material condition and verify proper alignment according to plant design. The inspectors also observed potential unmonitored release points and reviewed radiation monitoring system surveillance records and the routine processing and discharge of gaseous and liquid radioactive wastes.

### Calibration and Testing Program (1 sample)

The inspectors reviewed gaseous and liquid effluent monitor instrument calibration, functional test results, and alarm setpoints based on National Institute of Standards and Technology calibration traceability and Offsite Dose Calculation Manual specifications.

#### b. Findings

No findings were identified.

## **4. OTHER ACTIVITIES**

### 4OA1 Performance Indicator Verification (71151 - 6 samples)

#### .1 Unplanned Scrams and Unplanned Scrams with Complications (2 samples)

##### a. Inspection Scope

The inspectors reviewed Entergy's submittals for the following Initiating Events cornerstone performance indicators (PIs) for the period of July 1, 2015, through June 30, 2016:

- Unplanned Scrams
- Unplanned Scrams with Complications

To determine the accuracy of the PI data reported during those periods, inspectors used definitions and guidance contained in Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7. The inspectors reviewed Entergy's operator narrative logs, event reports, 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

The inspectors reviewed Entergy's submittals for the occupational radiological occurrences PI for the first quarter of 2015 through the fourth quarter of 2015. The inspectors used PI definitions and guidance contained in NEI 99-02, Revision 7, to determine the accuracy of the PI data reported. The inspectors 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 conducted walkdowns of various 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.

.3 EP Drill and Exercise Performance, ERO Drill Participation, and ANS Reliability  
(3 samples)

a. Inspection Scope

The inspectors reviewed data for the following EP PIs:

- Drill and exercise performance
- ERO drill participation
- ANS reliability

The inspectors reviewed supporting documentation from EP drills and equipment tests from the fourth calendar quarter of 2015, when the last NRC EP inspection at FitzPatrick was conducted, through the second calendar quarter of 2016 to verify the accuracy of the reported PI data. The acceptance criteria documented in NEI 99-02, "Regulatory Assessment Performance Indicator Guidelines," Revision 7, was used as reference criteria.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

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 Entergy 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.

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

##### .1 Plant Events

###### a. Inspection Scope

For the plant events listed below, the inspectors reviewed and/or observed plant parameters, reviewed personnel performance, and evaluated performance of mitigating systems. The inspectors communicated the plant event to appropriate regional personnel, and compared the event details with criteria contained in IMC 0309, "Reactive Inspection Decision Basis for Reactors," for consideration of potential reactive inspection activities. As applicable, the inspectors verified that Entergy made appropriate emergency classification assessments and properly reported the event in accordance with 10 CFR Parts 50.72 and 50.73. The inspectors reviewed Entergy's follow-up actions related to the events to assure that Entergy implemented appropriate corrective actions commensurate with their safety significance.

- Unplanned downpower due to a trip of the 'A' RWR pump and a 44 percent runback of the 'B' RWR pump on August 21, 2016
- Trip of 'B' FW pump on September 14, 2016

###### b. Findings

No findings were identified.

##### .2 (Closed) Licensee Event Report (LER) 05000333/2016-004-00: Transformer Fault Results in Manual Scram and Secondary Containment Vacuum Below Technical Specification Limit (1 sample)

###### a. Inspection Scope

On June 24, 2016, FitzPatrick experienced an electrical fault on 71T-5, a non-safety-related electrical transformer used to supply power from 4160V to 600V electrical buses. The fault resulted in a trip of additional electrical loads, including two reactor building closed loop cooling (RBCLC) pumps. This resulted in a loss of sufficient cooling to the reactor recirculation pump motor-generator fluid drive oil and a manual reactor scram.

Entergy entered this issue into their CAP as CR-JAF-2016-2245 and performed a root cause evaluation. The cause evaluation identified that the PM activity that existed for the transformer was cancelled in 2011. PM had not been performed since 2002, leading to a failure to perform routine cleaning and testing. When combined with two separate overloading events early in the life of the transformer, the PM would have allowed the early detection that the transformer was at the end of its effective life and susceptible to failure. Entergy staff developed corrective actions to address the failure which included replacement of the transformer and re-establishing the PM task. Entergy also performed an extent of condition review that confirmed the PM to clean, inspect, and test similar non-safety-related dry-type transformers was still active and performed within its required frequency. The inspectors reviewed this LER and the associated root cause evaluation for accuracy, the adequacy of proposed and completed corrective actions, and the appropriateness of the extent-of-condition review. This LER is closed.

b. Findings

Introduction. A self-revealing Green FIN was identified for Entergy staff's failure to properly implement the requirements of EN-DC-324, "Preventive Maintenance Program," Revision 16, to ensure proper PM was implemented for non-safety-related 4KV transformer 71T-5. Specifically, AR 127566, PM change request to perform inspection, cleaning, and electrical testing of 4KV transformer 71T-5, was retired without a review by engineering as required by the PM program. As a result, transformer 71T-5 remained in service without proper maintenance and testing, leading to its failure and a reactor scram on June 24, 2016.

Description. Transformer 71T-5 is the unit substation for the non-safety-related 600 volts alternating current (VAC) bus 71L-13. The transformer is a dry-type, natural convection cooled step-down transformer converting 4160 VAC to 600 VAC. On June 24, 2016, a failure of 71T-5 resulted in a loss of power to 600 VAC bus 71L-13. The loss of power resulted in a trip of two out of three RBCLC pumps, the loss of additional non-safety-related electrical buses, and a manual reactor scram. The loss of 71L-13 also resulted in the loss of the ability to maintain secondary containment vacuum greater than or equal to minus 0.25 inches of water gauge. The standby gas treatment system was started and successfully restored reactor building differential pressure. Following identification of the electrical fault, operators cross-tied the 71L-14 600 VAC bus to the 71L-13 600 VAC bus, thus restoring power to RBCLC and various reactor building ventilation fans.

Entergy staff conducted a root cause evaluation, and found that the last PM performed on 71T-5 was conducted in 2002, to perform cleaning, inspection, and testing. The PM was on an 8-year frequency, and was not performed, when it was due in October 2010 during refueling outage 19. Contrary to EN-DC-324, Entergy staff cancelled the PM without an action request being initiated, reviewed, and approved, during the October 2010 outage. Subsequently AR 127566 was generated in 2011 to evaluate the permanent removal of visual inspection, cleaning, and electrical testing associated with transformer 71T-5. This request was approved by the PM engineer, although 71T-5 was listed as High Critical, which by definition in EN-DC-324 is due to its potential failure being able to cause a "significant impact to safe and reliable operation." Per EN-DC-324, "Preventive Maintenance Program," Section 5.5.4, Engineering was to have the AR routed for review prior to approval. Contrary to the requirement, the PM change was not provided for review, leading to the improper cancellation of the PM for 71T-5. Given 71T-5 was listed as High Critical, the required review would have allowed this to be identified and ensure the PM was reinstated.

A CAP review identified the 71T-5 transformer was overloaded in 1992 and 1996. Operation of this transformer beyond its rating is acceptable, but can reduce its effective life. Although the vendor does not provide a replacement frequency, the vendor did note that on average a dry-type transformer, similar to 71T-5, with reduced loading can last between 40 and 60 years. Entergy staff determined that had the PM not been cancelled, adequate cleaning and inspection would have prolonged the life of the transformer, and testing may have been able to detect that it was at the end of its effective life and susceptible to failure.

Entergy staff developed corrective actions to address the failure which included replacement of the transformer and re-establishing the PM task. Entergy also performed an extent of condition review that confirmed the PM to clean, inspect, and test similar non-

safety-related dry-type transformers was still active and performed within its required frequency.

Analysis. The inspectors determined that Entergy staff's failure to properly implement the requirements of EN-DC-324, "Preventive Maintenance Program," to ensure an adequate PM was in place for transformer 71T-5 was a performance deficiency that was reasonably within Entergy's ability to foresee and correct and should have been prevented. This finding is more than minor because it is associated with the Equipment Performance attribute of the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Specifically, Entergy staff failed to ensure an adequate PM was in place for transformer 71T-5. As a result, transformer 71T-5 ultimately failed on June 24, 2016, resulting in a manual reactor scram.

In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 1 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued June 19, 2012, the inspectors determined that this finding is of very low safety significance (Green) because although the performance deficiency caused a reactor scram, it did not result in the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition.

The inspectors did not assign a cross-cutting aspect to this finding because it is not indicative of current licensee performance. Specifically, the performance deficiency occurred in 2011, the guidance in EN-DC-324 is clear regarding the PM change process, and no additional failures to follow the process have resulted in significant reactor transients.

Enforcement. This finding does not involve enforcement action because no violation of a regulatory requirement was identified. This finding is against procedure EN-DC-324, "Preventive Maintenance Program," which is not required by Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)," Revision 2, and the work being done was not on a safety-related system. The issue was entered into Entergy's CAP as CR-JAF-2016-2245. Because this finding does not involve a violation and is of very low safety significance, it is identified as a FIN. **(FIN 05000333/2016003-01, Inadequate Preventive Maintenance Results in Transformer Failure and Reactor Scram)**

#### 4OA5 Other Activities

##### .1 Institute of Nuclear Power Operations (INPO) Report Review

###### a. Inspection Scope

The inspectors reviewed the final report for the INPO plant assessment of FitzPatrick conducted in March 2016. 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.

**4OA6 Meetings, Including Exit****Exit Meeting Summary**

On October 20, 2016, the inspectors presented the inspection results to Mr. Brian Sullivan, Site Vice President, and other members of Entergy 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

#### Licensee Personnel

B. Sullivan, Site Vice President  
 T. Peter, General Manager, Plant Operations  
 C. Adner, Director, Regulatory and Performance Improvement  
 D. Bittinger, Manager, Design and Programs Engineering  
 W. Drews, Manager, Regulatory Assurance  
 R. Heath, Manager, Radiation Protection  
 J. Jones, Manager, Emergency Planning  
 D. Poulin, Director, Engineering  
 T. Redfearn, Manager, Security  
 M. Reno, Manager, Training  
 T. Restuccio, Manager, Operations  
 J. Richardson, Manager, Systems and Components Engineering

### LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED

#### Open/Closed

05000333/2016003-01	FIN	Inadequate Preventive Maintenance Results In Transformer Failure and Reactor Scram (Section 4OA3)
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#### Closed

05000333/2016-004-00	LER	Transformer Fault Results in Manual Scram and Secondary Containment Vacuum Below Technical Specification Limit (Section 4OA3)
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### LIST OF DOCUMENTS REVIEWED

#### Section 1R04: Equipment Alignment

##### Procedures

EN-OP-119, Protected Equipment Postings, Revision 008  
 ODSO-4, Shift Turnover and Log Keeping, Attachment 1, Revision 12  
 OP-13A, RHR – Low Pressure Coolant Injection, Revision 18  
 OP-15, High Pressure Coolant Injection, Revision 62  
 OP-17, Standby Liquid Control System, Revision 51

OP-55B, Control Room Ventilation and Cooling, Revision 36  
ST-4N, HPCI Quick Start, Inservice, and Transient Monitoring Test (IST), Revision 65

Drawings

FB-45A, Flow Diagram Control and Relay Rooms Heating and Ventilation System 70, Revision 42  
FM-20A, Flow Diagram Residual Heat Removal System 10, Revision 72  
FM-25A, Flow Diagram High Pressure Coolant Injection System 23, Revision 75  
FM-25B, Flow Diagram HPCI Lube Oil System 23, Revision 33

Condition Reports

CR-JAF-2014-2026	CR-JAF-2015-0934	CR-JAF-2015-3893
CR-JAF-2016-0959	CR-JAF-2016-1144	CR-JAF-2016-2204
CR-JAF-2016-2594	CR-JAF-2016-3242	CR-JAF-2016-3522

Work Orders

341278  
52688922

Miscellaneous

DRN 10-00096, Revision 56 to HPCI OP-15, Approved January 25, 2010  
HPCI System Health Report for 4<sup>th</sup> Quarter 2015  
Project Number C2PP7C253A, 315 – HPCI and RCIC Turbine Control Design  
Project Number C2PP7C253A, 464 – HPCI Turbine Control System Design and Installation  
UFSAR Section 6.4.1, High Pressure Coolant Injection System, Revision 5

**Section 1R05: Fire Protection**

Procedures

AP-14.01, Fire Protection Program, Revision 14  
EAP-3, Fire, Revision 26  
PFP-PWR04, Battery Room Complex/Elevation 272 foot, 282 foot Fire Area/Zone III/BR-1, BR- 2, IV/BR-3, BR-4, XVI/BR-5, Revision 2  
PFP-PWR08, Administration Building, Elevation 300 foot Fire Area 1A/Fire Zone AD-6, Revision 4  
PFP-PWR09, Auxiliary Boiler Room, Elevation 272 foot and 285 foot, Revision 3  
PFP-PWR27, Reactor Building, Elevation 344' Fire Area 9/Fire Zone RB-1A, Revision 4

Drawings

FPSSK-2, Fire Area/Zone Arrangement Plan EI 272'-0", Revision 3  
FPSSK-4, Fire Area/Zone Arrangement Plan EI 286'-0", 326'-9", 344'-6", and EI 369'-6",  
Revision 2

Condition Reports

CR-JAF-2016-3372

Miscellaneous

JAF-RPT-04-00478, JAF Fire Hazards Analysis, Revision 0  
JAF-RPT-04-00478, JAF Fire Hazards Analysis, Revision 2



**Section 1R11: Licensed Operator Requalification Program and Licensed Operator Performance**

Procedures

OP-11A, Main Generator, Transformers and Isolated Bus Phase Cooling, Revision 51  
OP-65, Startup and Shutdown Procedure, Revision 120  
ST-26J, Heatup and Cooldown Temperature Checks, Revision 5

**Section 1R12: Maintenance Effectiveness**

Procedures

EN-DC-105, Condition Monitoring of Maintenance Rule Structures, Revision 10  
EN-DC-206, Maintenance Rule (a)(1) Process, Revision 3  
EN-DC-205, Maintenance Rule Monitoring, Revision 5  
OP-30B, Decay Heat Removal System, Revision 18  
ST-39D, Secondary Containment Leak Test, Revision 23  
ST-39S, Secondary Containment Isolation Valve Testing, Revision 2  
ST-39V, Secondary Containment Verification Test, Revision 3

Drawings

FM-2C, Machine Loc. – Turbine Area Basement Floor Plan, Elevation 252'-0", Revision 25

Condition Reports

CR-JAF-2016-01766                      CR-JAF-2016-01812                      CR-JAF-2016-02823  
CR-JAF-2016-04023

Maintenance Rule Functional Failure Determinations for CRs

CR-JAF-2016-01766  
CR-JAF-2016-01812

Documents

JAF-RPT-07-00006, Maintenance Rule Structural Monitoring Report, Revision 4  
JAF-RPT-BYM-02306, Maintenance Rule Basis Document for System 052, Structures (Building and Yard Maintenance), Revision 3  
JAF-RPT-DHR-02657, Maintenance Rule Basis Document for System 032 Decay Heat Removal System, Revision 7  
JAF-RPT-EDG-02303, Maintenance Rule Basis Document for System 93, Emergency Diesel Generator, Revision 11  
JAF-RPT-SGT-02495, Maintenance Rule Basis Document for System 01-125 and 24 Standby Gas Treatment and Secondary Containment, Revision 5  
System Health Reports for Emergency Diesel Generator System, Second Quarter 2016 and First, Second and Fourth Quarters 2015  
UFSAR Section 9.22, Decay Heat Removal System, Revision 3

Work Orders

00446156  
52625186  
52713092

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

AP-10.10, On-Line Risk Assessment, Revision 9  
 EN-OP-103, Reactivity Management Program, Revision 5  
 EN-OP-119, Protected Equipment Postings, Revision 8  
 EN-WM-104, On-Line Risk Assessment, Revision 12  
 MST-071.27, Station Battery Charger Performance Test, Revision 19

Condition Reports

CR-JAF-2016-02834

Work Orders

452039

Miscellaneous

Reactivity Maneuver Plan 22-038

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

AP-12.08, LCO Tracking and Safety Function Determination Program, Revision 18  
 EN-OP-104, Operability Determination Process, Revision 10ISP-32-1A, RHR Loop 'A' Low Flow  
     Bypass Valve Instrumentation Calibration, Revision 2  
 OP-13C, RHR Service Water, Revision 13  
 ST-2AL, RHR Loop 'A' Quarterly Operability Test (IST), Revision 35  
 ST-2XA, RHR Service Water Loop 'A' Quarterly Operability Test (IST), completed May 17, 2016  
     and August 11, 2016  
 ST-4N, HPCI Quick Start, Inservice, and Transient Monitoring Test (IST), completed  
     April 11, 2016; June 9, 2016; and September 26, 2016

Drawings

FM-20B, Flow Diagram RHR System 10, Revision 72

Condition Reports

CR-JAF-2009-4354	CR-JAF-2009-4462	CR-JAF-2010-0133
CR-JAF-2014-0224	CR-JAF-2015-1166	CR-JAF-2016-0959
CR-JAF-2016-1210	CR-JAF-2016-1413	CR-JAF-2016-1474
CR-JAF-2016-2204	CR-JAF-2016-2218	CR-JAF-2016-2802
CR-JAF-2016-3012	CR-JAF-2016-1474	CR-JAF-2016-3284
CR-JAF-2016-3116		
CR-JAF-2016-3593		

Work Orders

00215450	00218401	00442931
00408659	52538064	52621498
52655955	52697394	

Miscellaneous

DBD-010, Design Basis Document for the RHR System, Revision 13  
 JAF-RPT-CRC-02299, Maintenance Rule Basis Document System 70 Control & Relay Room

JAF-RPT-RHR-2281, Maintenance Rule Basis Document System 10 RHR System, Revision 12  
UFSAR Section 4.8.6.1, Low Pressure Coolant Injection (LPCI) Mode, Revision 8  
UFSAR Section 6.5.2.5, LPCI, Revision 4  
UFSAR Section 7.4.3.5.4, LPCI Valve Control, Revision 4  
UFSAR Section 9.7, Service Water System  
Ventilation System, Revision 8

### **Section 1R18: Plant Modifications**

#### Procedures

EN-DC-117, Post Modification Testing and Special Instructions, Revision 8  
ESP-68.001, Leak Rate Test of ADS Pneumatic Supply Check Valves, completed June 30, 2016  
IMP-93.1, Emergency Diesel Generator Pressure Switch Calibration, completed September 20, 2016  
ST-9BB, EDG 'B' and 'D' Full Load Test and ESW Pump Operability Test, completed September 20, 2016  
ST-22D, Nitrogen Instrument Header Integrity Test, completed July 3, 2016  
ST-22K, Manual Safety Relief Valve Operation System Test (IST), completed June 30, 2016

#### Condition Reports

CR-JAF-2015-5439  
CR-JAF-2016-2281

#### Work Orders

431056  
445688

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

#### Procedures

ISP-100D-RPS, RPS Instrument Functional Test/Calibration (ATTS)\*\*, Revision 40  
MP-003.10, Hydraulic Control Unit (HCU) Water Accumulator (03TK-125) and Nitrogen Cylinder (03TK-128) Maintenance, Revision 7  
MP-011.01, Standby Liquid Control Pump Maintenance, Revision 14  
MP-200.03, Replacement of NAMCO EA-180 and EA-740 Position Switches, Revision 11  
RAP-7.4.01, Control Rod Scram Time Evaluation, Revision 27  
SLC System Health Report, Second Quarter 2016  
ST-1B, MSIV Fast Closure Test (IST), completed June 30, 2016 and July 1, 2016  
ST-41K, Remote Valve Position Indication Verification Shutdown (IST), completed June 30, 2016 and July 1, 2016  
ST-6HB, SLC 'B' Side Quarterly Operability Test (IST), performed August 25, 2016 and August 26, 2016

#### Condition Reports

CR-JAF-2016-2307	CR-JAF-2016-2356	CR-JAF-2016-2765
CR-JAF-2016-3246	CR-JAF-2016-3248	

#### Drawings

1.65-141, Connection DIAG-CH B RHR Relay Pnl 9-33, Revision 12

Work Orders

52687875

Miscellaneous

EC 65469, Guidance for Replacement 29PNS-86D3, Revision 0

**Section 1R22: Surveillance Testing**Procedures

ESP-22.001, LOCA Bypass of EDG 'A' and 'C' Shutdown Logic Functional Test, Revision 1

ISP-32-1A, RHR Loop 'A' Low Flow Bypass Valve Instrument Calibration, Revision 2

ISP-175A1, Reactor and Containment Cooling Instrument Functional Test/Calibration (ATTS)\*\*,  
Revision 18

ISP-276A, Reactor Level (ECCS) Transmitter Calibration (ATTS)\*\*, Revision 24

ISP-276B, Reactor Level (ECCS) Transmitter Calibration (ATTS)\*\*, Revision 22

ST-4E, HPCI and SGT Logic System Functional and Simulated Automatic Actuation Test,  
Revision 54ST-4E, HPCI and SGT Logic System Functional and Simulated Automatic Actuation Test,  
Revision 55

ST-9AA, EDG System 'A' Fuel/Lube Oil Monthly Test, Revision 5

ST-9BA, EDG 'A' and 'C' Full Load Test and ESW Pump Operability Test, Revision 16

ST-9BB, EDG 'A' and 'C' Full Load Test and ESW Pump Operability Test, Revision 15

ST-24E, RCIC Logic System Functional and Simulated Automatic Actuation Test, Revision 35

Condition Reports

CR-JAF-2016-3219

CR-JAF-2016-2204

Work Orders

449852 52700236-01 52680547

52466682 00341323 52275927

52433272 52441702 52680551

**Section 1EP2: Alert and Notification System Evaluation**ProceduresAgreement By and Between Entergy Nuclear Northeast Operations Inc. and James A. FitzPatrick  
Nuclear Power Plant, Nine Mile Point Nuclear Station LLC, and Robert E. Ginna Nuclear  
Power Plant LLC Regarding Emergency Plan Support, August 8, 2006Design Report, Nine Mile Point Nuclear Generating Station and James A. FitzPatrick Nuclear  
Power Plant Public Alert and Notification System, Revision I, November 2015

EP-MA-121-1002, Alert and Notification System (ANS) Program, Revision 12

EP-MA-121-1003, Alert and Notification System (ANS) Monitoring, Troubleshooting, and Testing  
Program, Revision 6

EP-MA-121-1004, Alert and Notification System (ANS) Maintenance Program, Revision 9

February 18, 2016, FEMA memorandum from FEMA Headquarters Technical Hazards Division to  
FEMA Region II Radiological Emergency Preparedness Branch providing evaluation of  
Nine Mile Point Nuclear Generating Station and James A. FitzPatrick Nuclear Power Plant  
Public Alert and Notification System Design Report, Revision I, November 2015James A. FitzPatrick Nuclear Power Plant Emergency Plan, Section 7, Emergency Facilities and  
Equipment, Revision 35

## **Section 1EP3: Emergency Response Organization Staffing and Augmentation System**

### **Procedures**

EAP-17, Emergency Organization Staffing, Revision 124  
 EN-EP-310, Emergency Response Organization Notification System, Revision 4  
 EN-EP-801, Emergency Response Organization, Revision 13  
 EN-PL-147, Personnel Expectations Related to Emergency Response at Entergy Nuclear Sites, Revision 3  
 EN-TQ-110, Emergency Response Organization Training, Revision 12  
 EN-TQ-110-01, Fleet Emergency Plan Training Course Summary, Revision 3  
 ERO Assignments Roster, July 5, 2016  
 ERO Training Records, January 2015-June 2016  
 James A. FitzPatrick Nuclear Power Plant Emergency Plan, Section 5, Organization, Revision 50  
 Off-Hours Unannounced Mobilization Drill Report, June 8, 2015  
 Quarterly Off-Hours Call-In Test Drill Reports, March 18, 2015; September 22, 2015; November 30, 2015; February 17, 2016; April 6, 2016  
 SAP-20, Emergency Plan Training, Revision 38

## **Section 1EP5: Maintenance and Emergency Preparedness**

### **Procedures**

EN-EP-202, Equipment Important to Emergency Preparedness, Revision 8  
 EN-EP-305, Emergency Planning 10 CFR 50.54(q) Review Program, Revision 3  
 James A. FitzPatrick Nuclear Power Plant Emergency Plan, Section 7, Emergency Facilities and Equipment, Revision 35  
 James A. FitzPatrick Nuclear Power Plant Emergency Plan, Appendix C, Letters of Agreement, Revision 37  
 JEP-15-0049, October 20, 2015, Exercise Report  
 KLD TR-673, James A. FitzPatrick Nuclear Power Plant 2014 Population Update Analysis  
 KLD TR-758, James A. FitzPatrick Nuclear Power Plant 2015 Population Update Analysis  
 KLD TR-823, James A. FitzPatrick Nuclear Power Plant Development of Evacuation Time Estimates  
 KLD TR-828, James A. FitzPatrick Nuclear Power Plant Evacuation Time Estimate Sensitivity Study  
 LO-JAFLO-2014-0064, JAF Pre-NRC Exercise Assessment  
 LO-JAFLO-2015-0053, JAF Pre-NRC Inspection/Evaluation Assessment  
 QA-7-2015-JAF-1, Quality Assurance Audit Report – Emergency Preparedness  
 QA-7-2016-JAF-1, Quality Assurance Audit Report – Emergency Preparedness  
 SAP-23, Equipment Important to Emergency Preparedness, Revision 1

### **Condition Reports**

CR-JAF-2014-01484	CR-JAF-2015-02657	
CR-JAF-2015-04704	CR-JAF-2016-01888	CR-JAF-2016-01889
CR-JAF-2016-02156	CR-JAF-2016-02161	CR-JAF-2016-02178
CR-JAF-2016-02485		

## **Section 2RS5: Radiation Monitoring Instrumentation**

### **Procedures**

EN-RP-303, Source Checking of Radiation Protection Instrumentation, Revision 4  
 OP-32, Area Radiation Monitoring, Revision 15

RP-INST-02.01, Teletector Survey Meter, Model 6112B, Revision 3  
 RP-INST-02.02, Dose Rate Meter, RO-7, Revision 3  
 RP-INST-02.04, Count Rate Meter, Ludlum Model 177, Revision 6  
 RP-INST-02.05, Geiger Mueller Survey Meter, Revision 3  
 RP-INST-02.06, Dose Rate Meter, Bicron Micro-Rem, Revision 4  
 RP-INST-02.07, Neutron Survey Instruments, Revision 6  
 RP-INST-02.08, Ion Chamber Dose Rate Meter, Revision 5  
 RP-INST-02.09, Calibration of Mini-Scaler MS-2 and MS-3, Revision 5  
 RP-INST-02.10, Scintillation Alpha Counter, Eberline Model SAC-4, Revision 4  
 RP-INST-02.13, Remote Personnel and Area Monitoring, Revision 0  
 RP-INST-03.01, Area Radiation Monitors, Revision 5  
 RP-INST-03.03, Containment Radiation Monitor System Response Test and Preplanned  
     Alternate Monitoring Method, Revision 9  
 RP-INST-03.04, PASS Rad Monitor, Revision 3  
 RP-INST-04.01, Area Radiation Monitor, Dosimeter Corporation, Revision 5  
 RP-INST-04.02, Calibration of Whole Body Contamination Monitor IPM, Revision 6  
 RP-INST-04.03, Canberra Fastscan Whole Body Counter Operation, Revision 3  
 RP-INST-04.06, Portal Monitor, NNC Model Gamma 10 Calibration, Revision 2

#### Condition Reports

CR-JAF-2015-00306	CR-JAF-2015-00596	CR-JAF-2015-04694
CR-JAF-2015-05485	CR-JAF-2016-00766	CR-JAF-2016-01083
CR-JAF-2016-01847	CR-JAF-2016-01971	CR-JAF-2016-02061

#### Portable Instrument Calibration Records

<u>JAF ID#</u>	<u>Model</u>	<u>Calibration Dates</u>	
366	L177	06/26/2014	06/24/2015
12112	L177	01/12/2015	01/11/2016
12020	RadEye	12/01/2014	12/01/2015
600-197	AMP-100	07/25/2013	07/06/2015
1204	SAM	07/15/2015	05/10/2016
409	MS-2	01/19/2015	06/14/2016
428	MS-3	09/09/2014	09/08/2015
11504	3090	02/07/2012	08/20/2015
11521	3096	02/24/2014	08/19/2015
700	IPM-9	03/12/2015	03/10/2016
730	PM-7	12/05/2014	12/03/2015
740	ARGOS	Initial	04/22/2016
543	BICRON uR	11/18/2014	02/18/2016
663	RSO-50E	03/30/2015	03/30/2016
28	RO-20	08/27/2014	09/01/2015
1107	RO-20	08/12/2015	06/30/2016
12009	Ludlum 9-3	12/18/2013	11/09/2015
11528	Telepole	Initial	04/07/2016
212	Rem Ball	06/23/2014	02/12/2016
1331	AMS-4	05/07/2015	04/26/2016
SABRE 008	Sabre BPM	Initial	03/28/2016
1125	Radeco	06/13/2014	05/03/2016

902	Containment		
	Rad Monitor	10/07/2012	09/12/2014
979	Pass Rad		
	Monitor	11/05/2014	11/03/2015

#### Repair/Maintenance Instrument Data Records

SAM	#1208	10/26/15
SAC-4	#3-2541	10/27/15
Radeye	#12036	09/17/15
SAM	#1203	10/20/15
MS-2	#403	10/09/15
IPM	#721	10/06/15
IPM	#700	09/17/15
Radeye	#12036	07/17/15
MS-2	#419	06/15/16
SAC-4	#3-2541	07/28/16
IPM	#703	07/25/19
MS-2	#421	07/29/16
SAC-4	#3-2541	07/12/16

#### Instrument Response Check Failure Reviews

IPM 7/8	#702	11/16/15
MS-2	#419	11/18/15
MS-2	#419	06/13/16
RO-20	#12014	12/07/15
RO-20	#12062	06/14/16
Telepole	#12053	07/18/16

#### Previous and Current Calibration Records for Installed Plant Instruments

17-RM-50A, Stack  
 17-RM-53B, Stack HREM  
 17-RM-350, Radioactive Waste Discharges  
 17-RM-432, Turbine Building Exhaust  
 17-RM-434A, Turbine Building Exhaust HREM  
 17-RM-452B, Reactor Building Vent  
 17-RM-456A, Refuel Floor Vent  
 17-RM-458B, Radioactive Waste Building Exhaust  
 17-RM-463B, Radioactive Waste Building Exhaust HREM

#### Area Radiation Monitors

4, Turbine Building Floor High Pressure Turbine End  
 13, Reactor Building 344' South  
 28, Reactor Building 272' Control Rod Drive Removal Hatch

#### **Section 40A1: Performance Indicator Verification**

##### Procedures

ANS Reliability PI data, October 2015 – June 2016  
 EN-FAP-EP-005, Emergency Preparedness Performance Indicators, Revision 3  
 EN-LI-114, Performance Indicator Process, Revision 6  
 ERO Drill Participation PI Data, October 2015 – June 2016

**Section 4OA3: Follow-up of Events and Notices of Enforcement Discretion**

Procedures

AOP-8, Unexpected Change in Core Flow, Revision 38  
 AOP-27, Control Rod Malfunction, Revision 12  
 AOP-32, Unplanned Power Change, Revision 12  
 AOP-41, Feedwater Malfunction, Revision 12  
 ARP-09-6-4-9, RFPT 'B' Trip, Revision 10  
 EN-DC-324, Preventive Maintenance Program, Revision 16  
 OP-27, Recirculation System, Revision 78

Condition Reports

CR-JAF-2016-3184	CR-JAF-2016-3196	CR-JAF-2016-3181
CR-JAF-2016-3182	CR-JAF-2016-3184	CR-JAF-2016-3186
CR-JAF-2016-3179	CR-JAF-2016-3180	CR-JAF-2016-2245

Miscellaneous

UFSAR Section 14.5, Analyses of Abnormal Operational Transients and Reactor Vessel Overpressure, Revision 1  
 UFSAR Section 14.5.5.3, Loss of Feedwater Flow, Revision 2



**LIST OF ACRONYMS**

10 CFR	Title 10 of the <i>Code of Federal Regulations</i>
ADS	automatic depressurization system
ANS	alert and notification system
AR	action request
CAP	corrective action program
CR	condition report
CREVAS	control room emergency ventilation air system
EC	engineering change
EDG	emergency diesel generator
EP	emergency preparedness
ERF	emergency response facility
ERO	emergency response organization
ESW	emergency service water
FIN	finding
FW	feedwater
HPCI	high pressure coolant injection
IMC	Inspection Manual Chapter
LER	licensee event report
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
PI	performance indicator
PM	preventive maintenance
RBCLC	reactor building closed loop cooling
RHR	residual heat removal
RWR	reactor water recirculation
SLC	standby liquid control
SRV	safety relief valve
SSC	structure, system, and component
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
VAC	volts alternating current
WO	work order