June 16, 2008

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

SUBJECT: JAMES A. FITZPATRICK NUCLEAR POWER PLANT - NRC TRIENNIAL FIRE PROTECTION INSPECTION REPORT 05000333/2008006

Dear Mr. Dietrich:

On May 16, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at James A. FitzPatrick Nuclear Power Plant. The enclosed inspection report documents the inspection results, which were discussed on May 16, 2008, with Mr. Kevin Mulligan, General Manager Plant Operations, and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations, and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, one finding of very low safety significance (Green) was identified. The finding was also determined to be a violation of NRC requirements. However, because of the very low safety significance, and because it was entered into your corrective action program, the NRC is treating this finding as a non-cited violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest the NCV in this report, you should provide a written response within 30 days of the date of this inspection report with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington D.C. 220555-001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement; and the NRC Senior Resident Inspector at the James A. FitzPatrick Nuclear Power Plant.

In accordance with Title 10 of the Code of Federal Regulations 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 NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS).

ADAMS is accessible from the NRC Web Site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

John F. Rogge, Chief
Engineering Branch 3
Division of Reactor Safety

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

Enclosure: Inspection Report No. 05000333/2008006
w/Attachment: Supplemental Information

ADAMS is accessible from the NRC Web Site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

John F. Rogge, Chief
Engineering Branch 3
Division of Reactor Safety

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

Enclosure: Inspection Report No. 05000333/2008006
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.:	50-333
License No.:	DPR-59
Report No.:	05000333/2008006
Licensee:	Entergy Nuclear Northeast (Entergy)
Facility:	James A. FitzPatrick Nuclear Power Plant
Location:	268 Lake Road Scriba, New York 13093
Dates:	April 21 - May 16, 2008
Inspectors:	K. Young, Senior Reactor Inspector, DRS (Team Leader) J. Tifft, Reactor Inspector, DRS M. Patel, Reactor Inspector, DRS
Approved by:	John F. Rogge, Chief Engineering Branch 3 Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000333/2008006; 04/21/2008 - 05/16/2008; Entergy Nuclear Northeast (Entergy); James A. FitzPatrick Nuclear Power Plant; Triennial Fire Protection Team Inspection.

The report covered a two-week triennial fire protection team inspection by specialist inspectors. One finding of very low significance was identified. The finding was determined to be a non-cited violation. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process." Findings for which the significance determination process (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.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

Green. The team identified a Green non-cited violation of technical specification 5.4.1.d for failure to provide adequate procedure directions in Attachment 6 of AOP-28, "Operation During Plant Fires," Rev. 18, for operators to restore the RCIC system and secure the "A" RHR pump from potential fire-induced cable failures. The licensee entered this issue into their corrective action program and implemented procedure changes to provide operators appropriate guidance to address the spurious failures of both RCIC and LPCI "A" systems in the event of fire in fire zone RB-1C.

The finding was more than minor because it affected the procedure quality attribute of the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, Entergy had not established adequate procedure guidance to restore the RCIC system and secure the "A" RHR pump from fire-induced cable failures in the event of a fire in fire zone RB-1C. The team assessed this finding in accordance with NRC IMC 0609, Appendix F, "Fire Protection Significance Determination Process." This finding screened to very low safety significance (Green) in Phase 1 of the SDP because it was assigned a low degradation rating. The low degradation rating was assigned based on the team's review of the BWR Owners' Group response and walkdowns conducted of procedure AOP-28, "Operation During Plant Fires," Rev. 18. The team concluded that, although a spurious start of the "A" RHR pump with minimum flow condition could occur, an operator would reach the LPCI mode step in the procedure within the maximum expected minimum flow condition evaluated and specified in BWR Owners' Group response of thirty minutes. As a result, a low degradation rating was assigned. (Section 1R05.01)

B. Licensee-Identified Violations

None

REPORT DETAILS

Background

This report presents the results of a triennial fire protection inspection conducted in accordance with NRC Inspection Procedure (IP) 71111.05T, "Fire Protection." The objective of the inspection was to assess whether Entergy Nuclear Northeast (Entergy) has implemented an adequate fire protection program and that post-fire safe shutdown capabilities have been established and are being properly maintained at the James A. FitzPatrick Nuclear Power Plant (JAFNPP). The following fire areas (FAs) and fire zones (FZs) were selected for detailed review based on risk insights from the JAFNPP Individual Plant Examination (IPE)/Individual Plant Examination of External Events (IPEEE):

- FA 7, FZ CS-1
- FA 8, FZ RB-1C
- FA 16, FZ BR-5
- FA 5, FZ EG-5

The inspection team evaluated the licensee's fire protection program (FPP) against applicable requirements which include plant Technical Specifications, Operating License Condition 2.C.3, NRC Safety Evaluations, 10 CFR 50.48, and 10 CFR 50, Appendix R. The team also reviewed related documents that include the Updated Final Safety Analysis Report (UFSAR), Section 9.8, the fire hazards analysis (FHA), and the post-fire safe shutdown analysis.

Specific documents reviewed by the team are listed in the attachment.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R05 Fire Protection (IP 71111.05T)

.01 Post-Fire Safe Shutdown From Outside Main Control Room (Alternative Shutdown) and Normal Shutdown

a. Inspection Scope

Methodology

The team reviewed the safe shutdown analysis, operating procedures, piping and instrumentations drawings (P&IDs), electrical drawings, the UFSAR and other supporting documents to verify that hot and cold shutdown could be achieved and maintained from outside the control room for fires that rely on shutdown from outside the control room. This review included verification that shutdown from outside the control room could be performed both with and without the availability of offsite power. Plant walkdowns were also performed to verify that the plant configuration was consistent with that described in the safe shutdown and fire hazards analyses. These inspection

activities focused on ensuring the adequacy of systems selected for reactivity control, reactor coolant makeup, reactor decay heat removal, process monitoring instrumentation, and support systems functions. The team verified that the systems and components credited for use during this shutdown method would remain free from fire damage. The team verified that the transfer of control from the control room to the alternative shutdown locations would not be affected by fire-induced circuit faults (e.g., by the provision of separate fuses and power supplies for alternative shutdown control circuits).

Similarly, for fire areas that utilize shutdown from the control room, the team also verified that the shutdown methodology properly identified the components and systems necessary to achieve and maintain safe shutdown conditions.

Operational Implementation

The team verified that the training program for licensed and non-licensed operators included alternative shutdown capability. The team also verified that personnel required for safe shutdown using the normal or alternative shutdown systems and procedures are trained and available onsite at all times, exclusive of those assigned as fire brigade members.

The team reviewed the adequacy of procedures utilized for post-fire shutdown and performed an independent walk through of procedure steps to ensure the implementation and human factors adequacy of the procedures. The team also verified that the operators could be reasonably expected to perform specific actions within the time required to maintain plant parameters within specified limits. Time critical actions including restoration of alternating current (AC) electrical power, establishing the remote shutdown and local shutdown panels, establishing reactor coolant makeup, and establishing decay heat removal were verified.

Specific procedures reviewed for alternative shutdown, including shutdown from outside the control room included the following:

- AOP-28, Operating During Plant Fires, Rev. 18, Attachments 6 and 12; and
- AOP-43, Plant Shutdown From Outside the Control Room, Rev. 33.

The team reviewed manual actions to ensure that they had been properly reviewed and approved and that the actions could be implemented in accordance with plant procedures in the time necessary to support the safe shutdown method for each fire area. The team also reviewed the periodic testing of the alternative shutdown transfer capability and instrumentation and control functions to ensure the tests are adequate to ensure the functionality of the alternative shutdown capability.

b. Findings

.1 Potential Loss of Reactor Core Isolation Cooling (RCIC) and Low Pressure Coolant Injection (LPCI)

Introduction: The team identified a Green non-cited violation of technical specification 5.4.1.d, Administrative Controls, for a failure to provide adequate procedure directions in Attachment 6 of AOP-28, "Operation During Plant Fires," Rev. 18, for operators to restore the reactor core isolation cooling (RCIC) system and secure the "A" residual heat removal (RHR) pump from potential fire-induced cable failures in the event of a fire in the reactor building.

Description: The team reviewed JAF-RPT-FPS-01975, "10CFR50, Appendix R Safe Shutdown Analysis Report," Rev. 2, and noted that a fire in the reactor building northeast, northwest, and southeast quadrants elevation 300', fire zone RB-1C, could cause spurious operation of the "A" RHR pump. Also, a fire in this area could cause a spurious reactor high level trip signal resulting in a closure of the RCIC turbine steam supply valve 13MOV-131. The safe shutdown analysis, for fire zone RB-1C, credits the automatic depressurization system/low pressure coolant injection (ADS/LPCI) "A" systems and the RCIC system for safe shutdown operations. Either one of the systems can be used for safe shutdown operations from the control room. Safe shutdown procedure, AOP-28, "Operation During Plant Fires," Rev. 18, provides directions for operators to initially utilize the RCIC system for safe shutdown operation. In the event the RCIC system is unavailable, the procedure directs operators to utilize LPCI "A" per operations procedure OP-31A, "RHR-Low Pressure Coolant Injection," Rev. 15.

Entergy's safe shutdown analysis JAF-RPT-FPS-01975, "10CFR50, Appendix R Safe Shutdown Analysis Report," Rev. 2, identifies that fire induced cable failures could affect the operability of the RCIC system due to a spurious reactor high level trip signal and closure of the RCIC turbine steam supply valve 13MOV-131. The analysis addresses this failure by implementing manual actions to remove power to the relay that would cause the motor operated valve (MOV) closure and operate the valve from panel 09-4 in the control room. The action to address this spurious failure was not reflected in the Attachment 6 of AOP-28, "Operation During Plant Fires," Rev. 18. The inspectors determined that the lack of guidance to address the spurious closure of the RCIC turbine steam supply valve impacted the availability of the RCIC system.

The team reviewed Entergy's safe shutdown analysis and identified that a fire induced cable failure also could result in a spurious start of the "A" RHR pump due to failure of the reactor low level logic relays in fire zone RB-1C. The team reviewed Attachment 6 of AOP-28, "Operation During Plant Fires," Rev. 18, and identified that the procedure did not provide any guidance for operators to secure the "A" RHR pump. The team also noted that the operations procedure OP-31A, "RHR-Low Pressure Coolant Injection," Rev. 15, contained a precaution for the operators to limit the RHR pump running time to ten minutes with minimum flow conditions. The precaution stated that running an RHR pump for greater than ten minutes with only its minimum flow valve open could damage the pump. The inspectors determined that the lack of guidance to address the spurious start of the "A" RHR pump prior to pump damage and the spurious closure of the RCIC

turbine steam supply valve, affected the operability of the systems and determined that the lack of guidance to address both system failures was a performance deficiency, since either one of the system is required for safe shutdown operations in the event of fire in fire zone RB-1C.

Entergy entered this issue into their corrective action program as condition reports CR-JAF-2008-01555 and CR-JAF-2008-01597 and implemented temporary procedure changes providing appropriate guidance to operators. The temporary procedure changes included providing the appropriate procedural steps for operators to address the spurious failures of both RCIC and LPCI "A" systems in the event of fire in fire zone RB-1C.

Analysis: The team concluded that Entergy's failure to establish an adequate shutdown procedure to address the spurious closure of the RCIC turbine steam supply valve and the spurious start of the "A" RHR pump was a performance deficiency. This performance deficiency is more than minor because it was associated with the procedure quality attribute of the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, RCIC or LPCI "A" is necessary to perform safe shutdown operations from the control room.

The team assessed this finding in accordance with NRC IMC 0609, Appendix F, "Fire Protection Significance Determination Process." This finding affected post-fire safe shutdown procedures and systems and screened to very low safety significance (Green) in Phase 1 of the significance determination process (SDP) because it was assigned a low degradation rating. The low degradation rating was assigned based on the team's review of the BWR Owners' Group response to NRC Bulletin No. 88-04, "Potential Safety-Related Pump Loss," which required licensee's to evaluate the adequacy of the minimum flow bypass lines for safety-related pumps with respect to damage from operation, and walkdowns of procedure AOP-28, "Operation During Plant Fires," Rev. 18. The team reviewed BWR Owners' Group response to the NRC Bulletin No. 88-04, and identified that the response evaluated the maximum duration of the RHR pump to operate in the minimum flow condition for thirty minutes with no apparent adverse consequences. The team conducted a walkdown and reviewed the sequencing of the procedure steps associated with starting of the "A" RHR pump for the LPCI mode of operation and concluded that, although a spurious start of the "A" RHR pump with minimum flow condition could occur, an operator would reach the LPCI mode step in the procedure within the maximum expected minimum flow condition evaluated and specified in BWR Owners' Group response of thirty minutes. As a result, a low degradation rating was assigned because an operator would be able to recover from a spurious start of the "A" RHR pump with minimum flow conditions prior to any undesired adverse consequences. This would result in at least one credited safe shutdown system being available for safe shutdown operations from the control room if the RCIC system were to become unavailable.

Enforcement: JAFNPP Technical Specification 5.4.1.d states that written procedures shall be established, implemented, and maintained covering fire protection program implementation. Contrary to this requirement, as of May 16, 2008, Entergy did not provide an adequate shutdown procedure to address the spurious failures of the RCIC and LPCI "A" systems as required by Entergy's fire protection program. Because this finding was of very low safety significance (Green) and has been entered into Entergy's corrective action program (CR-JAF-2008-01555 and CR-JAF-2008-01597), this violation is being treated as a NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. **NCV 05000333/2008006-01, Inadequate Procedure Guidance to Address Spurious Failures of the Reactor Core Isolation Cooling (RCIC) and Low Pressure Coolant Injection (LPCI) Systems.**

.02 Protection of Safe Shutdown Capabilities

a. Inspection Scope

The team reviewed the FHA, safe shutdown analyses and supporting drawings and documentation to verify that safe shutdown capabilities were properly protected. The team ensured that separation requirements of Section III.G of 10 CFR 50, Appendix R, were maintained for the credited safe shutdown equipment and their supporting power, control and instrumentation cables. This review included an assessment of the adequacy of the selected systems for reactivity control, reactor coolant makeup, reactor heat removal, process monitoring, and associated support system functions.

The team reviewed the licensee's procedures and programs for the control of ignition sources and transient combustibles to assess their effectiveness in preventing fires and in controlling combustible loading within limits established in the FHA. A sample of hot work and transient combustible control permits were also reviewed. The team performed plant walkdowns to verify that protective features were being properly maintained and administrative controls were being implemented.

The team also reviewed the licensee's design control procedures to ensure that the process included appropriate reviews and controls to assess plant changes for any potential adverse impact on the fie protection program and/or post-fire safe shutdown analysis and procedures.

b. Findings

No findings of significance were identified.

.03 Passive Fire Protection

a. Inspection Scope

The team walked down accessible portions of the selected fire areas to observe material condition and the adequacy of design of fire area boundaries (including walls, fire doors and fire dampers).

The team reviewed installation/repair and qualification records for a sample of penetration seals to ensure the fill material was of the appropriate fire rating and that the installation met the engineering design.

b. Findings

No findings of significance were identified.

.04 Active Fire Protection

a. Inspection Scope

The team reviewed the design, maintenance, testing, and operation of the fire detection and suppression systems in the selected plant fire areas. This included verification that the manual and automatic detection and suppression systems were installed, tested, and maintained in accordance with the National Fire Protection Association (NFPA) code of record, or as NRC approved exemptions, and that each suppression system would control and/or extinguish fires associated with the hazards in the selected areas. A review of the design capability of the suppression agent delivery systems were verified to meet the code requirements for the hazards involved. The team also performed a walkdown of accessible portions of the detection and suppression systems in the selected areas as well as a walkdown of major system support equipment in other areas (e.g. fire pumps, carbon dioxide (CO_2) storage tanks and supply system) to assess the material condition of the systems and components.

The team reviewed electric and diesel fire pump flow and pressure tests to ensure that the pumps were meeting their design requirements. The team also reviewed the fire main loop flow tests to ensure that the flow distribution circuits were able to meet the design requirements.

The team assessed the fire brigade capabilities by reviewing training, qualification, and drill critique records. The team also reviewed pre-fire plans and smoke removal plans for the selected fire areas to determine if appropriate information was provided to fire brigade members and plant operators to identify safe shutdown equipment and instrumentation, and to facilitate suppression of a fire that could impact post-fire safe shutdown capability. In addition, the team inspected the fire brigade equipment (including smoke removal equipment) to determine operational readiness for fire fighting.

b. Findings

No findings of significance were identified.

.05 Protection From Damage From Fire Suppression Activities

a. Inspection Scope

The team performed document reviews and plant walkdowns to verify that redundant trains of systems required for hot shutdown are not subject to damage from fire suppression activities or from the rupture of inadvertent operation of fire suppression systems. Specifically, the team verified that:

- A fire in one of the selected fire areas would not directly, through production of smoke, heat or hot gases, cause activation of suppression systems that could potentially damage all redundant safe shutdown trains.
- A fire in one of the selected fire areas (or the inadvertent actuation or rupture of a fire suppression system) would not directly cause damage to all redundant trains (e.g. sprinkler caused flooding of other than the locally affected train).
- Adequate drainage is provided in areas protected by water suppression systems.

b. Findings

No findings of significance were identified.

.06 Alternative Shutdown Capability

a. Inspection Scope

Alternative shutdown capability for the areas selected for inspection utilizes shutdown from outside the control room and is discussed in section 1R05.01 of this report.

b. Findings

No findings of significance were identified.

.07 Circuit Analysis

a. Inspection Scope

The team verified that the licensee performed a post-fire safe shutdown analysis for the selected fire areas and the analysis appropriately identified the structures, systems, and components important to achieving and maintaining safe shutdown. Additionally, the team verified that the licensee's analysis ensured that necessary electrical circuits were properly protected and that circuits that could adversely impact safe shutdown due to hot shorts, shorts to ground, or other failures were identified, evaluated, and dispositioned to ensure spurious actuations would not prevent safe shutdown.

The team's review considered fire and cable attributes, potential undesirable consequences and common power supply/bus concerns. Specific items included the credibility of the fire threat, cable insulation attributes, cable failure modes, and actuations resulting in flow diversion or loss of coolant events.

The team also reviewed cable raceway drawings for a sample of components required for post-fire safe shutdown to verify that cables were routed as described in the cable routing matrices.

Cable failure modes were reviewed for the following components:

- Residual Heat Removal 'B' Low Pressure Coolant Injection Outboard Injection Valve, 10MOV-27B;
- Reactor Core Isolation Cooling Turbine Steam Inlet Valve, 13MOV-131;
- Reactor Core Isolation Cooling Pump Suction From Torus Isolation Valve, 13MOV-39; and
- Solenoid Valves for Safety/Relief Valves, 02SOV-71A1 and 02SOV-71A2.

The team reviewed circuit breaker coordination studies to ensure equipment needed to conducted post-fire safe shutdown activities would not be impacted due to a lack of coordination. The team confirmed that coordination studies had addressed multiple faults due to fire.

b. Findings

No findings of significance were identified.

.08 Communications

a. Inspection Scope

The team reviewed safe shutdown procedures, the safe shutdown analysis, and associated documents to verify an adequate method of communications would be available to plant operators following a fire. During this review the team considered the effects of ambient noise levels, clarity of reception, reliability, and coverage patterns. The team also inspected the designated emergency storage lockers to verify the availability of portable radios for the fire brigade and for plant operators. The team also verified that communications equipment would not be affected by a fire.

b. Findings

No findings of significance were identified.

.09 Emergency Lighting

a. Inspection Scope

The team observed the placement and coverage area of eight-hour emergency lights throughout the selected fire areas to evaluate their adequacy for illuminating access and egress pathways and any equipment requiring local operation and/or instrumentation monitoring for post-fire safe shutdown. The team also verified that the battery power supplies were rated for at least an eight-hour capacity. Preventive maintenance

procedures, the vendor manual, completed surveillance tests, and battery replacement practices were also reviewed to verify that the emergency lighting was being maintained in a manner that would ensure reliable operation.

b. Findings

No findings of significance were identified.

.10 Cold Shutdown Repairs

a. Inspection Scope

The team assessed whether the licensee had dedicated repair procedures, equipment, and materials to accomplish repairs of components required for cold shutdown which might be damaged by the fire to ensure cold shutdown could be achieved within the time frames specified in their design and licensing bases.

b. Findings

No findings of significance were identified.

.11 Compensatory Measures

a. Inspection Scope

The team verified that compensatory measures were in place for out-of-service, degraded or inoperable fire protection and post-fire safe shutdown equipment, systems, or features (e.g. detection and suppression systems and equipment, passive fire barriers, or pumps, valves or electrical devices providing safe shutdown functions or capabilities). The team also verified that the short term compensatory measures compensated for the degraded function or feature until appropriate corrective action could be taken and that the licensee was effective in returning the equipment to service in a reasonable period of time.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA2 Identification and Resolution of Problems

.01 Corrective Actions for Fire Protection Deficiencies

a. Inspection Scope

The team verified that the licensee was identifying fire protection and post-fire safe shutdown issues and appropriate threshold and entering them into the corrective action program. The team also reviewed a sample of selected issues to verify that the licensee had taken or planned appropriate corrective actions.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

Exit Meeting Summary

The team presented their preliminary inspection results to Mr. Kevin Mulligan, General Manager Plant Operations, and other members of the site staff at an exit meeting on May 16, 2008. No proprietary information was included in this inspection report.

ATTACHMENT: SUPPLEMENTAL INFORMATION

ATTACHMENT

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

K. Mulligan	General Manager Plant Operations
C. Adner	Manager, Operations
J. Barnes	Leader, Site Transition
C. Bateman	Senior Nuclear Operator
C. Brown	Manager, Quality Assurance
C. Boucher	Chemical Support
J. Cook	Manager, Engineering
E. Collins	Senior Nuclear Operator
J. Costedio	Manager, Licensing
P. DeBan	Senior Nuclear Operator
G. Dorman	Senior Licensing Specialist
W. Drews	Manager, Systems Engineering (Acting)
M. Durr	Manager CA&A
B. Finn	Director, Nuclear Safety Assurance
D. Fox	HU/IS Supervisor
J. Harpst	Senior Nuclear Operator
D. Huwe	QA Auditor
D. Johnson	Manager, Training
D. Koelbel	Fire Protection Engineer
K. Nickerson	Manager, DE
J. Pechacek	Director, Engineering (Acting)
T. Raymond	Manager, Projects
M. Reno	Manager, Main
D. Stokes	Fire Protection Engineer
R. Sullivan	ADM-Shift
John Solowski	Manager, R.P.
P. Colman	EPM, Technical Manager

NRC

J. Rogge	Chief, Engineering Branch 3, Division of Reactor Safety
W. Schmidt	Senior Reactor Analyst, Division of Reactor Safety
G. Hunegs	Senior Resident Inspector, JAFNPP
S. Rutenkroger	Resident Inspector, JAFNPP

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

NONE

Opened and Closed

05000333/2008006-01	NCV	Inadequate Procedure Guidance to Address Spurious Failures of the RCIC and LPCI Systems

Closed

NONE

Discussed

NONE

Attachment

LIST OF DOCUMENTS REVIEWED

Fire Protection Licensing Documents

James A. Fitzpatrick Final Safety Analysis Report
James A. Fitzpatrick Technical Specifications
Safety Evaluation Report, James A. Fitzpatrick, Fire Protection, 08/01/1979
Safety Evaluation Report, James A. Fitzpatrick, Alternate Safe Shutdown Capability, 04/26/1983
Exemption Requests, 10CFR50.48 Fire Protection & Appendix R to 10CFR50, 07/01/1983
Safety Evaluation Report, James A. Fitzpatrick, Exemption From Appendix R to 10CFR50 Concerning Core Uncovery During Alternate Safe Shutdown, 09/15/1986
Exemptions From Requirements of 10CFR50 Appendix R, 09/10/1992
Letter to NRC, Safe Shutdown Scenario and Timetable, 12/22/1992

Calculations/Engineering Evaluation Reports

EPM Calculation 184	Multiple High Impedance Fault Analysis, Rev. 1
JAF-ANAL-FPS-00321	Battery Room Corridor Fire Dampers, Rev. 1
JAF-ANAL-FPS-00689	Unprotected Openings at Column/Beam Connection Points of Barriers, Rev. 1
JAF-ANAL-FPS-00738	Miscellaneous Fire Door Deficiencies, Rev. 4
JAF-ANAL-FPS-01408	Electrical Conduits Not Sealed Internally Penetrating the Reactor Building Water Spray Curtains Separating Fire Areas, Rev. 0
JAF-CALC-FPS-01977	Cable Spreading Room CO2 Timer Setting, Rev. 0
JAF-CALC-FPS-02010	North and South EDG Switchgear Rooms Timer Setting Evaluation vs. 45% Tank Level, Rev. 0
JAF-ECAF-L26-MC261/263	Selective Coordination of 71L26, 71MCC-261 and 71MCC-263 Elec. Circuit Breakers and Cable Protection Analysis, Rev. 0
JAF-RPT-00045	Regulatory Issue Summary 2004-03 Risk-Informed Approach to SSD Circuit Inspections Assessment of JAFNPP, 04/2005
JAF-RPT-FPS-01975	10CFR50 Appendix R Safe Shutdown Analysis Report, Rev. 2
JAF-RPT-MISC-02598	JAF Peak Clad Temperature for an Appendix R Fire Event, Rev. 0
JAF-RPT-MISC-025999	JAF Peak Clad Temperatures for an Appendix R Fire Event, Rev. 0
JAF-SE-92-223	Nuclear Safety Evaluation AOP-28
MDE-137-0585	Analysis to Extend Operator Action Time for Alternate Shutdown Panels in Support of Fitzpatrick Compliance to Appendix R, Rev. 2
0090-00066-C-003	Fire Suppression Effects Analysis for JAFNPP, Rev. 4
0090-00066-EVAL-001	Review of Exposed Structural Steel at JAF, Rev. 0

Procedures

AP-05.10	Control of Scaffolding, Rev. 7
AP-14.01	Fire Protection Program, Rev. 11
EN-DC-127	Control of Hot Work and ignition Sources, Rev. 4
EN-DC-161	Control of Combustibles, Rev. 1
FPP-1.8	Compensatory Fire Watch, Rev. 11
MP-076.07	6-Volt ‘Battery Pack’ Emergency Light Maintenance, Rev. 21

MP-076.20	Fire Damper Maintenance, Rev. 2
ODSO-4, Attach. 2	Shift Turnover Checklist, 04/22/08
ST-16J1	Control Room and Relay Room Emergency Lighting Test, Rev. 12
ST-76X	Nozzle Air Flow Test for Water Curtain Spray Boundaries Number 1 through 8, Rev. 6
ST-76Z	Fire Damper Inspection, Rev. 18

Operations Procedures

AOP-28	Operation During Plant Fires, Rev. 18
AOP-43	Plant Shutdown From Outside Control Room, Rev. 33
AOP-55	Alternated Shutdown Cooling Due to Plant Fires, Rev. 9 (Cancelled)
EAP-3	Fire, Rev. 23
OP-13A	RHR – Low Pressure Coolant Injection, Rev. 15
OP-46B	120 VAC Power System, Rev. 26

Completed Tests/Surveillances

FPP-1.13	Fire Brigade Equipment Inventory, Rev. 0, Completed 3/22/08
MP-076.07	6-Volt 'Battery Pack' Emergency Light Maint., Rev .19, Completed 04/09/07, 04/23/07, 05/29/07; Rev 21, Completed 12/26/07, 01/14/08
MST-029.03	Remote Shutdown Verification – Panel 25RSP & 25ASP-3, Rev. 3, Completed 11/02/06
MST-029.04	Remote Shutdown Continuity Verification 25ASP-4, Rev. 0, Completed 10/20/04
ST-16J2	Turbine Building, Heater Bay, and Electric Bay Emergency Lighting Test, Rev. 10, Completed 02/09/08, 03/18/08
ST-16J3	EDG Building, Screenwell, and Warehouse #2 Emergency Lighting Test, Rev. 11, Completed 02/09/08, 03/18/08
ST-16J5	Reactor Building Emer. Lighting Test, Rev. 14, Completed 02/09/08, 03/09/08
ST-28	Portable Diesel Generator Operability Test, Rev. 6
ST-43A	Remote Shutdown Panel 25RSP Component Operation and Isolation Verification, Rev. 9, Completed 09/08/2006 & 09/10/2006
ST-43B	Remote Shutdown Panel 25ASP-1 Component Operation and Isolation Verification, Rev. 6, Completed 05/19/2006
ST-43C	Remote Shutdown Panel 25ASP-2 Component Operation & Isolation Verification ST-43C, Rev. 9, Completed 09/05/2006
ST-43D	Remote Shutdown Panel 25ASP-3 Component Operation and Isolation Verification, Rev. 12, Completed 10/07/2006
ST-43D	Remote Shutdown Panel 25ASP-3 Component Operation and Isolation Verification, Rev. 13, Completed 10/02/2006 & 10/07/2006
ST-43E	Panel 66 HV-3B Remote Shutdown Component Operation and Isolation Verification, Rev. 5, Completed 12/18/2006
ST-43G	Remote Shutdown Panel 25ASP-5 Component Operation and Isolation Verification, Rev. 5, Completed 10/27/2006
ST-43I	Remote Shutdown Instrument Check, Rev. 8, Completed 03/21/08
ST-43K	Remote Shutdown Panel Component Operation and Isolation Verification – Plant Shutdown, Rev. 0, Completed 10/14/2006 & 10/19/2006
ST-76I	Portable Fire Extinguisher Inspection Procedure, Rev. 23, Completed 04/25/08

ST-76J16	Smoke/Heat Detector Functional and CO2 Simulated Automatic/Manual Initiation Tests – Cable Spreading Room, Rev. 22, Completed 12/12/05, 01/09/08
ST-76J19	Smoke/Heat Detector Functional and CO2 Simulated Automatic/Manual Initiation Tests – South EDG Switchgear Room, Rev. 23, Completed 08/11/05, 08/01/07
ST-76J23	West Diesel Fire Pump 76P-1 Performance Test, Rev. 15, Completed 01/07/05; Rev. 16, Completed 08/31/06
ST-76J24	Electric Fire Pump 76P-2 Performance Test, Rev. 19, Completed 12/01/06, 01/24/07
ST-76J26	Smoke Detector Functional Test – Reactor Building 300' – North, Rev 12, Completed 08/16/06
ST-76J47	Heat Detector Functional Test – Water Spray Curtain Boundary Number 3, Rev. 11, Completed 04/07/06
ST-76J50	Heat Detector Functional Test – Stairwell Water Spray Boundaries Numbers 6 and 8", Rev 10, Completed 04/14/06
ST-76U	Fire System Flow Test, Rev. 7, Completed 09/10/97; Rev. 9, Completed 09/02/03
STP-76AL	Cable Spreading Room Enclosure Integrity Test, Rev. 0, Completed 11/16/94
STP-76AQ	South EDG Switchgear Room Enclosure Integrity Test, Rev. 0, Completed 11/17/94
ST-99C	Safe Shutdown Equipment Inventory and Panel Operability Verification, Rev. 28, Completed 12/01/07

Quality Assurance (QA) Audits and Self Assessments

LO-JAFLO-2007-00031	Fire Protection Program, 03/01/07
QA-9-2006-JAF-1	Fire Protection, 03/10/06
QA-9-2008-JAF-1	Fire Protection, 02/13/08
QA-9-2008-JAF-1	QA Audit Report, Fire Protection, 01/07/2008 – 02/13/2008

Drawings and Wiring Diagrams

ESK-5BS	DC Elementary Diagram 4160V Ckt. Emergency Bus 10500 Undervoltage Operation, Rev. 23
ESK-5BU	DC Elementary Diagram 4160V Ckt. Residual Heat Removal Pump 10-P-3A, Rev. 24
ESK-6J	Elementary Diagram 600V Circuit Maintenance Feeds to LPCI MOV Buses, Rev. 8
ESK-6K	Elementary Diagram 600V Circuits – MCC AC Input to LPCI MOV Independent Power Supply, Re. 8
ESK-6ML	Elementary Diagram 600V Circuits-MOV RHR Pump's 10P-3A & B Minimum Flow Bypass Valves 10MOV-16A & B, Rev. 14
ESK-6MR	Elementary Diagram 600V Circuits MOV-RHR Outboard Valves 10MOV-27A & B
ESK-11AQ	Elementary Diagram-125VDC Circuits-MOV RCIC System – Outboard Steam Supply Isolation & Steam to Turbine MOVs, Rev. 18
ESK-11AZ	Elementary Diagram 125 VDC Circuits – SOV ADS Depressurization Valve 02SOV-71A1 & B1, Rev. 9
ESK-11AAM	DC Elementary Dia. ADS Relief Valve 02ADS-RV-71SOV-71A2, Rev. 5
FB-48A	Flow Diagram Fire Protection Water Piping, Rev. 33

FB-49A,	Flow Diagram Fire Protection Water Piping, Rev. 40
FB-56A,	Flow Diagram CO2 and Foam Fire Extinguishing System, Rev. 12
FE-1L, Sht. 2	600V 1 Line Dia. SWGR 71L15 & 71L16 71MCC-153 & 163, Rev. 33
FE-1N, Sht. 4	600V One Line Dia. SWGR's 71L25, 71L26, 71MCC-251 & 261, Rev. 23
FE-1R	600V One Line Diagram Sh.7 71 MCC-131, 141, 252 & 262, Rev. 28
FE-1Y, Sht. 14	600V One Line Diagram 71MCC-332, 342, 155 & 165, Rev. 34
FM-20A	Flow Diagram Residual Heat Removal System 10, Rev. 72
FM-22A	Flow Diagram Reactor Core Isolation Cooling System 13, Rev. 54
FM-25A	Flow Diagram High Pressure Coolant Injection System 23, Rev. 71
FPSSK-101	Fire Barrier Penetration Arrangement Plan, Rev. 6
FPSSK-102	Fire Barrier Penetration Arrangement Plan, Rev. 5
FPSSK-243	Fire Barrier Penetration Arrangement
FPSSK-249, Sht. 1	Fire Barrier Penetration Arrangement, Rev. 2
FPSSK-268, Sht. 1	Fire Barrier Penetration Arrangement, Rev. 4
FPSSK-306, Sht. 1	Fire Barrier Penetration Arrangement, Rev. 3
791E453, Sht. 2	Elementary Diagram Auto Depressurization System, Rev. Q
794E461, Sht. 4	Elementary Diagram RHR System, Rev. K
791E464, Sht. 2	Elementary Diagram RCIC System, Rev. H
791E464, Sht. 3	Elementary Diagram RCIC System, Rev.9
791E464, Sht. 4	Elementary Diagram RCIC System, Rev. N
791E464, Sht. 6	Elementary Diagram RCIC System, Rev. F

NFPA Code Compliance Reviews

NFPA 12-1968	Standard on Carbon Dioxide Extinguishing Systems, Rev. 1
NFPA 15-1982	Standard for Water Spray Fixed Systems for Fire Protection, Rev. 1
NFPA 20-1970	Standard for Centrifugal Fire Pumps, Rev. 1

Penetration Seal Evaluations

1WC077B02, 12/18/91
1WC077B21, 12/17/91
1WC080R10, 12/03/91
E-146, 12/08/91
S-949, 12/14/91

Vendor Manuals

Eagle Picher Carefree Rechargeable Lead Acid Battery
Exide Electronics ELU Equipment
F100 by Lightguard
Holophane EC-31, 34 Fluorescent Emergency Light Series
Holophane M-19 12 Volt DC Power Pack for Automatic Emergency Lights

Pre-Fire Plans

PFP-PWR 04	Battery Room Complex / Elev. 272', 282'", Rev. 2
PFP-PWR 11	Cable Spreading Room / Elev. 272'", Rev. 2

PFP-PWR 24	Reactor Building – East / Elev. 300', Rev. 3
PFP-PWR 25	Reactor Building – West / Elev. 300', Rev. 3
PFP-PWR 31	EDG Spaces – South / Elev. 272', Rev. 2

Fire Drills and Critiques

B&G Building with Offsite Fire Department, 11/13/07
Battery Charger Room 'B'. 06/12/07
Cable Spreading Room, 06/05/07, 03/26/08
Control Room HVAC Chiller/Equipment Room, 01/31/08
EDG 'A' Train Room 1, 02/08/08
MG Set Room, 02/13/08
Reactor Building 272' Southwest, 07/24/07
Relay Room, 03/22/08
West Cable Tunnel, 01/17/07

Operator Safe Shutdown Training

LP-AOP	Licensed Operator Initial Training, Abnormal Operating Procedures, Rev. 4
JPM 2004205A	Plant Shutdown from Outside the Control Room-NCO1 Actions, Rev. 5
JPM 2004205B1	Plant Shutdown from Outside the Control Room SNO/CRS – 10600 Bus Energized from only EDG B and D, Rev. 3
JPM 2004205B2	Plant Shutdown from Outside the Control Room SNO/CRS Actions – 10600 Bus De-energized, Rev. 3
JPM 2004205B3	Plant Shutdown from Outside the Control Room SNO/CRS – 10600 Bus Energized From Reserve Power, Rev. 3
JPM 2004205B4	Plant Shutdown from Outside the Control Room SNO/CRS – 10600 Bus Energized from Only EDG B, Rev. 4

Hot Work

02/25/08	Heat Yoke on 12-4 CFD-13B for Removal
03/06/08	Reactor Building 300' at 15E-1A (North End)
03/11/08	Aux Boiler
03/17/08	Cut Out Piping for Removal
04/02/08	Repair Cracks in Gen Housing

Transient Combustible Evaluations

08-006
08-007
08-008
08-009
08-010

Miscellaneous Documents

2007 Drill Report Summary
2008 Drill Report Summary
Calculation for Allowable Functional Failure Rate of ELUs, 05/14/08
Class Roster, Fire Protection Training, 02/05/07, 08/02/07, 09/05/07, 11/15/07
DBD-076, Fire Protection, Rev. 4
Design Change D1-93-173, Rev. 0
Fire Brigade Qualifications Spreadsheet
Fire Protection Impairment Log, April 2008
Fire Protection System Health Report, 3Q2007, 4Q2007, 1Q2008
Lesson Plan FP-13-4.1, Self Contained Breathing Apparatus, Rev. 6
JAF-RPT-04-00478, Fire Hazards Analysis, Rev. 2
JAF-RPT-FPS-01940, CO2 Protected Area Integrity Activities, Rev. 2
JAF-RPT-FPS-02367, Fire Protection Plan, Rev. 12
JAF-RPT-FPS-02699, Emergency Battery Powered Lighting Preventative Maintenance, Rev. 3
JAF-RPT-MISC-02751, Maintenance Rule Basis Document for System 076 Emergency Lighting, Rev. 3
Memo to T. Herrmann from J. Matchak/G. Johnson/J. Pechacek, Heat Detector Functional Test; Water Sprays Review Findings, 12/09/93
Memo to J. Street from D. Kerr, Unsupervised Solenoid Valves in Water Spray System, 12/11/96
Memo to G. Tasick from F.A. Bloise/D. Kerr, Closure of ACTS Item 12563 Concerning the Reactor Building Appendix R Water Spray Curtains, 08/16/95
Shift Turnover Checklist, Normal Crew Assignments, 04/22/2008
Technical Requirements Manual

Condition Reports

2005-01227	2005-01231	2005-00487	2005-03374	2006-03251	2006-03687
2006-04513	2007-00094	2007-01263	2007-01722	2007-01984	2007-02167
2007-02168	2007-02200	2007-03187	2008-00091	2008-00093	2008-00391
2008-00464	2008-00550	2008-00941	2008-01330*	2008-01373*	2008-01555*
2008-01570*	2008-01571*	2008-01580*	2008-01595*	2008-01597*	

* NRC identified during this inspection.

Work Orders

JAF-04-24408
JAF-04-38140
JAF-06-26771
WO 0015119401

LIST OF ACRONYMS

AC	Alternating Current
ADS	Automatic Depressurization System
BWR	Boling Water Reactor
CFR	Code of Federal Regulations
CO_2	Carbon Dioxide
DRS	Division of Reactor Safety
FA	Fire Area
FHA	Fire Hazards Analysis
FPP	Fire Protection Program
FZ	Fire Zone
IP	Inspection Procedure
IPE	Individual Plant Examination
IPEEE	Individual Plant Examination of External Events
IR	Inspection Report
JAFNPP	James A. FitzPatrick Nuclear Power Plant
LPCI	Low Pressure Coolant Injection
MOV	Motor Operated Valve
NCV	Non-cited Violation
NFPA	National Fire Protection Association
NRC	Nuclear Regulatory commission
PAR	Publicly Available Records
P&ID	Piping and Instrumentation Drawing
QA	Quality Assurance
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
SCBA	Self-Contained Breathing Apparatus
SDP	Significance Determination Process
SER	Safety Evaluation Report
UFSAR	Updated Final Safety Analysis Report