July 29, 2005

Mr. Theodore Sullivan
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 INTEGRATED INSPECTION REPORT 05000333/2005004

Dear Mr. Sullivan:

On June 30, 2005, the US Nuclear Regulatory Commission (NRC) completed an inspection at your James A. FitzPatrick Nuclear Power Plant. The enclosed integrated inspection report documents the inspection findings which were discussed on July 20, 2005, with you and other members of your staff.

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

This report documents one NRC-identified finding. The finding was determined to involve violations of NRC requirements. However, because of the very low safety significance and because it is entered into your corrective action program, the NRC is treating this finding as a non-cited violation (NCV) consistent with Section VI.A of the NRC Enforcement Policy. If you contest the NCV in this report, you should provide a 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, DC 20555-0001; with copies to the Regional Administrator Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Iinspector at Fitzpatrick.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the

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

Sincerely,

/RA/

Brian J. McDermott, Chief
Projects Branch 2
Division of Reactor Projects

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

Enclosure: Inspection Report 05000333/2005004
w/Attachment: Supplemental Information

G. Taylor, CEO, Entergy Operations
M. Kansler, President, Entergy
J. Herron, Sr, VP and Chief Operating Officer
C. Schwarz, VP, Operations Support
K. Mulligan, General Manager, Plant Operations
O. Limpias, VP, Engineering
J. McCann, Director, Licensing
C. Faison, Manager, Licensing
M. Colomb, Director of Oversight
D. Wallace, Director, Nuclear Safety Assurance
R. Plasse, Acting Manager, Regulatory Compliance
T. McCullough, Assistant General Counsel
P. Smith, President, New York State Energy Research and Development Authority
P. Eddy, New York State Department of Public Service
S. Lyman, Oswego County Administrator
Supervisor, Town of Scriba
C. Donaldson, Esquire, Assistant Attorney General, New York Department of Law
J. Sniezek, PWR SRC Consultant
M. Lyster, PWR SRC Consultant
S. Lousteau, Treasury Department

S. Collins, RA
M. Dapas, DRA
B. McDermott, DRP
P. Krohn, DRP
D. Jackson, DRP
S. Lee, RI OEDO
R. Laufer, NRR
J. Boska, NRR
L. Cline, DRP - NRC Senior Resident Inspector
D. Dempsey, DRP, Resident Inspector
K. Kolek, Resident OA
Region I Docket Room (with concurrences)
ROPreports@nrc.gov (All IRs)

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.:	50-333
License No.:	DPR-59
Report No.:	05000333/2005004
Licensee:	Entergy Nuclear Northeast (Entergy)
Facility:	James A. FitzPatrick Nuclear Power Plant
Location:	268 Lake Road Scriba, New York 13093
Dates:	April 1 - June 30, 2005
Inspectors:	L. Cline, Senior Resident Inspector D. Dempsey, Resident Inspector M. Davis, Reactor Inspector A. Dimitriadis, Physical Security Inspector D. Jackson, Senior Project Engineer J. Noggle, Senior Health Physicist J. Williams, Consultant
Approved by:	Brian J. McDermott, Chief Projects Branch 2 Division of Reactor Projects

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SUMMARY OF FINDINGS

IR 05000333/2005004; 04/01/2005 - 06/30/2005; James A. FitzPatrick Nuclear Power Plant; Heat Sink Performance, and Radioactive Material Processing and Transportation.

The report covered a three-month period of inspection by resident inspectors, and announced inspections by a senior health physicist, and regional specialist inspectors. One Green non-cited violation (NCV) was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion III, "Design Control," because Entergy did not maintain adequate design control of the west cable tunnel unit cooler (UC) 67E-11 to ensure that it would perform its safety-related function under design basis conditions. Specifically, Entergy did not adequately evaluate the ability of the cooler to remove its design basis heat load with 22 tubes plugged and the maximum allowable ultimate heat sink temperature of 85 degrees Fahrenheit (EF).

  The finding is greater than minor because it is associated with the mitigating system cornerstone attributes for design control and equipment performance. It affects the mitigating system cornerstone objective to ensure the availability, reliability and capability of systems and components that are required to power safety-related loads for safe shutdown and accident mitigation. The inspectors determined the finding to be of very low safety significance using the Phase 1 SDP screening worksheet for at power situations. The finding screened to Green because it is a design deficiency confirmed not to result in a loss of function per NRC Generic Letter 91-18. This finding is documented in Entergy's corrective action program as CR-2005-02467. (Section 1R07)

B. Licensee-Identified Violations

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

REPORT DETAILS

Summary of Plant Status

The reactor began the inspection period operating at full power. On May 7, 2005, power was reduced to approximately 60% for a planned rod sequence exchange. On May 8 full power was restored. On May 17 power was reduced to 47% for planned main condenser maintenance. On May 19 full power was restored. FitzPatrick continued to operate at or near rated power for the rest of the inspection period until June 30 when the plant commenced a TS required shutdown due to a potential loss of containment integrity (see Section 4OA3).

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity [REACTOR-R]

1R01 Adverse Weather Protection (71111.01 - 1 sample)

a. Inspection Scope

The inspectors completed one adverse weather protection sample. The inspectors reviewed and verified completion of the operations department warm weather preparation checklist contained in procedure AP-12.04, “Seasonal Weather Preparations.” The inspectors reviewed the operating status of the reactor and turbine building cooling systems, reviewed the procedural limits and actions associated with elevated lake temperature, and walked down accessible areas of the buildings to assess the effectiveness of the ventilation systems. Documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04 - 3 samples, 71111.04S - 1 sample)

a. Inspection Scope

Partial System Walkdown. The inspectors performed three partial system walkdowns to verify a train was properly restored to service following maintenance or evaluate the operability of one train while the opposite train was inoperable or out of service for maintenance and testing. The inspectors compared system lineups to system operating procedures (OPs), system drawings, and the applicable chapters in the Updated Final Safety Analysis Report (UFSAR). The inspectors also verified the operability of critical system components by observing component material condition during the system walkdown and reviewing the maintenance history for each component. Documents reviewed during this inspection are listed in the Attachment. The inspectors performed partial walkdowns of the following systems:

- Train A emergency diesel generators (EDG) inspected on April 22, 2005, following restoration after completion of the replacement of the C EDG governor;
- Train A EDGs inspected on May 19, 2005 during surveillance testing of train B EDGs; and

- East diesel and the electric-driven fire pumps inspected on June 17 while west diesel fire pump 76P-1 was out of service for testing.

Complete System Walkdown. The inspectors performed a complete walkdown of the spent fuel pool cooling system to identify any discrepancies between the existing equipment lineup and the required lineup. During the walkdown system drawings and OPs were used to verify proper equipment alignment and operational status. The inspectors reviewed the open maintenance work requests (WRs) on the system for any deficiencies that could affect the ability of the system to perform its function. Documentation associated with unresolved design issues such as temporary modifications, operator workarounds, and items tracked by plant engineering were also reviewed to assess their collective impact on system operation. In addition, the inspectors reviewed the condition report (CR) database to verify that equipment alignment problems were being identified and appropriately resolved.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q - 8 samples)

a. Inspection Scope

The inspectors toured eight areas important to reactor safety to evaluate conditions related to Entergy's control of transient combustibles and ignition sources; the material condition, operational status, and operational lineup of fire protection systems, equipment and features; and the fire barriers used to prevent fire damage or fire propagation. The inspectors used procedure ENN-DC-161, "Transient Combustible Program," the JAF fire hazards analysis and pre-fire plans in performing the inspection. The areas inspected included:

- Fire Area 9/Zone RB-1A;
- Fire Area 10/Zone RB-1B;
- Fire Area 1B/Zone SH-1;
- Fire Area 1C/Zone CT-1;
- Fire Area 1C/Zone SW-1;
- Fire Area 2/SW-2;
- Fire Area 7/Zone CS-1; and
- Fire Area YARD/Zone XR-1

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06 - 3 samples)

a. Inspection Scope

Internal Flooding.

The inspectors completed two internal flooding inspection samples. The inspectors reviewed FitzPatrick's Individual Plant Examination (IPE) and the UFSAR concerning internal flooding events and completed walkdowns of two areas in which flooding could have a significant impact on risk, the relay room and the reactor building crescent rooms. The inspectors verified the validity of assumptions made in the IPE regarding flooding scenarios in both locations, the control of equipment needed to comply with the flooding analysis in the IPE, and performance of the reactor building equipment drain sump inspections. Documents reviewed during this inspection are listed in the Attachment.

External Flooding.

The inspectors completed one external flood protection inspection sample. The inspectors reviewed FitzPatrick's Individual Plant Examination of External Events (IPEEE) and the UFSAR concerning external flooding events. The inspection included a walkdown of accessible areas of the plant perimeter to look for potential susceptibilities to external flooding and verify the assumptions included in the site's external flooding analysis. The inspectors also reviewed relevant abnormal and emergency plan procedures.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07A - 1 sample, 71111.07B - 3 samples)

a. Inspection Scope

Annual. The inspectors reviewed the testing and evaluation of test results for the crescent area and electric bay UCs performed during the week of May 9, 2005. Surveillance test procedure (ST)-8Q, "Testing of the Emergency Service Water (ESW) System," is performed on a quarterly basis to verify safety-related UC thermal performance. Performance data calculations were reviewed to verify that heat exchanger (HX) performance was consistent with design.

Biennial. Based on plant specific risk assessments and previous biennial inspections, the inspectors selected the following safety-related HXs: west cable tunnel UC 67E-11, B residual heat removal (RHR) HX 10E-2B, and control and relay room air handling units (AHUs) 70AHU-3B and 70AHU-12A. These HXs were selected to evaluate potential common cause heat sink performance problems and verify the HXs could

perform their design function. The HXs are cooled by the safety-related ESW and residual heat removal service water (RHRSW) systems.

The inspectors reviewed performance tests, eddy current inspections, and chemical control methods to ensure that the frequency for the selected components conformed to Entergy's commitments to Generic Letter 89-13, "Service Water System Problems Affecting Safety-Related Equipment." The inspectors compared the ST and inspection results to the established acceptance criteria to verify that the results were acceptable and that the HXs operated in accordance with design. The inspectors walked down the HXs, the intake structure, ESW and RHRSW to assess the material condition of these systems, structures, and components. Finally, the inspectors discussed system health reports, methods of controlling biotic fouling, and the zebra mussel monitoring program with each respective system engineer.

The inspectors also reviewed a sample of CRs related to the HXs and the ESW system to ensure that Entergy was appropriately identifying, characterizing, and correcting problems related to these essential systems and components. Documents reviewed for this inspection are listed in the Attachment.

b. Findings

Introduction. The inspectors identified a Green NCV 10 CFR 50, Appendix B, Criterion III, "Design Control," because Entergy did not maintain adequate design control of the west cable tunnel UC 67E-11 to ensure that it would perform its safety-related function under DBA conditions. Specifically, Entergy did not adequately evaluate the ability of the cooler to remove its design basis heat load with 22 tubes plugged and the maximum allowable UHS temperature of 85 EF.

Description. The west cable tunnel UC 67E-11 is a safety-related component required to maintain the west cable tunnel temperature at or below 104EF to ensure that the electrical cables located in the tunnel will remain available to power safety-related loads required for safe shutdown and accident mitigation. The cooler also provides cooling to the South Emergency Switchgear Room located in the Emergency Diesel Generator Building. The cooler consists of a pre-filter, an after-filter, a cooling coil and two 50% capacity vane axial fans. The fans supply filtered outside air to the cable tunnel through distributed duct work and supply registers. The cooler is designed to remove heat by means of a cooling coil that maintains the tunnel temperature at or below 104EF. The cooling coils are normally cooled by service water; however during a DBA the ESW system provides cooling to the coils.

In 1993, 22 tubes in the 67E-11 cooler were plugged to address tube degradation identified by eddy current inspections. The maximum allowable tube plugging limit is established in calculation 14620.9033, "Total Available Tube Plugging Margin in the Cable Tunnel Coolers," Revision 2, dated November 1990. This calculation determined that a plugging margin of 23 tubes may be plugged assuming a design basis heat load of 58000 BTU/HR, a maximum cable tunnel air temperature of 104EF, an UHS temperature of 77EF. However, subsequent modifications raised the maximum

allowable UHS temperature to 85EF. The inspectors noted that in 1997, engineering had performed additional calculations to support raising the UHS temperature limit to 85EF, but failed to account for the 22 tubes plugged in 1993. As a result, the inspectors questioned the capability of the cooler to perform its safety-related function under DBA conditions and concluded that the design calculations of record did not support the operation of the cooler with 22 tubes plugged at the current licensing basis UHS limit of 85EF.

Based on the inspector's conclusion, Entergy performed an operability evaluation to demonstrate the capability of the 67E-11 cooler. The operability evaluation determined that the west cable tunnel can be maintained at or below 104EF with a maximum UHS temperature up to 81EF with 22 tubes plugged. The evaluation stated that this UHS temperature was acceptable since historically the lake temperatures rarely reached 81EF. Entergy also determined that the tunnel would not exceed 122EF with an UHS temperature of 85EF and that the cables would remain functional without being adversely affected.

Analysis. The failure to evaluate the ability of 67E-11 cooler to remove its design basis heat load with 22 tubes plugged at the maximum allowed UHS temperature of 85EF is a performance deficiency because Entergy was expected to comply with 10 CFR 50, Appendix B, Criterion III and because it was within Entergy's capability to foresee and correct. Traditional enforcement does not apply because the issue did not have an actual safety consequence or a potential for impacting the NRC's regulatory function, and it was not the result of any willful violation of NRC requirements. This issue was greater than minor because it was associated with the mitigating system cornerstone attributes of design control and equipment performance. It affected the mitigating system cornerstone objective to ensure the availability, reliability and capability of systems and components that are required to power safety-related loads for safe shutdown and accident mitigation.

The inspectors determined the finding to be of very low safety significance using the Phase 1 SDP screening worksheet for at power situations for the mitigating system cornerstone. The finding screened to Green because it was a design deficiency confirmed not to result in a loss of function per NRC Generic Letter 91-18.

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion III, requires, in part, that measures be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions. It further states that design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design review, or simplified calculational methods. Contrary to the above Entergy failed to adequately evaluate the ability of 67E-11 cooler to maintain the design basis temperature limit of the west cable tunnel under design and licensing basis conditions. Because the violation is of very low safety significance and Entergy entered the deficiency into its corrective action program as CR-2005-02467, this finding is being treated as an NCV consistent with Section VI.A of the Enforcement Policy. **(NCV 05000333/2004004-01, Inadequate design control of west cable tunnel cooler 67E-11)**

1R11 Licensed Operator Requalification Program (71111.11Q - 1 sample, 71111.11B - 1 sample)

a. Inspection Scope

Routine Inspection. On May 4, 2005, the inspectors observed licensed operator simulator training to assess operator performance during a scenario involving degraded 115 kilovolt (kV) system voltage and an unisolable reactor water cleanup leak that caused high reactor building temperatures and required operators to emergency depressurize. The inspectors evaluated the performance of risk significant operator actions, including the use of emergency operating procedures (EOPs), EOP-2, "Reactor Pressure Vessel Control" and EOP-5, "Secondary Containment." The inspectors assessed the clarity and effectiveness of communications, the implementation of appropriate actions in response to alarms, the performance of timely control board operation and manipulation, and the oversight and direction provided by the shift manager. The inspectors also reviewed simulator fidelity to evaluate the degree of similarity to the actual control room. Documents reviewed during this inspection are listed in the Attachment.

Biennial Review. On June 2, 2005, the inspectors conducted an in-office review of annual operating tests and the biennial written exam results for 2005. The inspection assessed whether pass rates were consistent with the guidance of IMC 0609, Appendix I, "Operator Requalification Human Performance SDP." The inspectors verified that:

- Crew failure rate was less than 20%. (Crew failure rate was 0%.)
- Individual failure rate on the dynamic simulator test was less than or equal to 20%. (Individual failure rate was 0%.)
- Individual failure rate on the walkthrough test was less than or equal to 20%. (Individual failure rate was 0%.)
- Individual failure rate on the comprehensive biennial written exam was less than or equal to 20%. (Individual failure rate was 2%.)
- Overall pass rate among individuals for all portions of the exam was greater than or equal to 75%. (Overall pass rate was 98%.)

In addition, the remediation package for the one individual failing the written exam was obtained from Entergy and reviewed for completeness and applicability.

b. Findings

No findings of significance were identified.

1R12 Maintenance Implementation (71111.12Q - 2 samples)

a. Inspection Scope

The inspectors reviewed performance-based problems involving selected in-scope structures, systems, or components (SSCs) to assess the effectiveness of the maintenance program. Reviews focused on: proper Maintenance Rule (MR) scoping in accordance with 10 CFR 50.65; characterization of reliability issues; changing system and component unavailability; 10 CFR 50.65 (a)(1) and (a)(2) classifications; identifying and addressing common cause failures, trending key parameters, and the appropriateness of performance criteria for SSCs classified (a)(2) as well as the adequacy of goals and corrective actions for SSCs classified (a)(1). The inspectors reviewed system health reports, maintenance backlogs, and MR basis documents. Other documents reviewed for the inspection are listed in the Attachment. The following two MR samples were reviewed:

- Repetitive failures of 71UPS-5, the uninterruptible power supply for various technical support center equipment; and
- Local leak rate test failures for 23MOV-16, the inboard high pressure coolant injection (HPCI) steam line isolation valve.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation (71111.13 - 5 samples)

a. Inspection Scope

The inspectors reviewed risk assessments associated with five different work weeks during the inspection period. The inspectors verified that risk assessments were performed in accordance with AP-10.10, “On-line Risk Assessment;” that risk of scheduled work was managed through the use of compensatory actions and schedule adherence; and that applicable contingency plans were properly identified in the integrated work schedule. Documents reviewed during this inspection are listed in the Attachment.

The following work weeks were reviewed:

- Week of April 11, 2005 included maintenance on the train A EDGs, the turbine electro-hydraulic control system, and RFP pump suction pressure switches;
- Week of April 18, 2005 included a planned plant power reduction, ESW system maintenance, and testing of the reactor protection (RPS) and primary containment isolation systems (PCIS);
- Week of May 16, 2005 included preventive maintenance on the circulating water traveling screens, crescent cooler 66UC-22K pipe replacement, and HPCI system testing;

- Week of May 23, 2005 included planned maintenance on 115 kV line #4 components; and
- Week of June 6, 2005 included planned maintenance on the A standby gas treatment (SGT) system fan, and emergent corrective maintenance on the A RPS motor-generator set and the A station battery charger.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-routine Plant Evolutions (71111.14 - 4 samples)

a. Inspection Scope

For the four non-routine events described below the inspectors reviewed plant procedures, operator logs, plant computer data, and strip charts. The inspectors also interviewed operators and plant management to determine what occurred, how the operators responded, and if the response was in accordance with plant procedures and management expectations. Documents reviewed during this inspection are listed in the Attachment.

- On April 18, 2005, the inspectors observed the site response to a mechanical failure of the B control rod drive (CRD) system pump. At 1156 on April 18 the control room received a CRD charging water pressure low alarm and immediately dispatched an operator to the area. The operator reported that the B CRD pump coupling was destroyed and the reactor building closed loop cooling system lines to the pump were broken. Operators started the A CRD pump and secured the B CRD pump motor. CR-2005-01511 was initiated to evaluate the cause of the failure.

- On April 17, 2005, the inspectors reviewed the site response to a loss of onsite telephone communications and the onsite radiological emergency communication system (RECS) with state and local authorities. At 1709 on April 17 security personnel informed operations that on-site phone communications were lost. Operations investigated the condition and determined that in addition to most onsite telephone communications all onsite RECS lines were unavailable. Operations verified that the primary emergency notification system with the NRC and radio contact with state and local agencies were available for emergency response. Operations also determined that the loss of communications was caused by the loss output from uninterruptible power supply 71UPS-5 to the affected onsite communications equipment. Instrumentation and controls technicians restored power to the onsite telephones and RECS at 2230 on April 17 and CR-2005-01502 was initiated to evaluate the cause of the failure.

- On May 17, 2005, the inspectors observed operator response to a reactor water recirculation pump runback. The runback from 45% to 40% speed occurred during a planned power reduction to remove a RFP from service. When the RFP was tripped a momentary low reactor vessel level coincident with a low RFP suction flow

condition induced the runback as designed. Entergy initiated CR 2005-01953 to evaluate the occurrence.

- On June 3, 2005, a voltage regulator failure caused loss of the A RPS motor-generator set that in turn resulted in a half scram and various containment isolation signals. Operators entered abnormal operating procedure (AOP)-59, "Loss of RPS Bus A Power," and re-powered the bus from the alternate transformer. All plant systems responded as designed. Entergy initiated CR-2005-02215 to determine the cause of the voltage regulator failure.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15 - 5 samples)

a. Inspection Scope

The inspectors reviewed operability determinations to assess the acceptability of the evaluations; when needed, the use and control of compensatory measures; and the compliance with TSs. The inspectors' review included a verification that the operability determinations were made as specified by ENN-OP-104, "Operability Determinations." The technical adequacy of the determinations was reviewed and compared to the TSs, UFSAR, and associated DBDs. Other documents reviewed for this inspection are listed in the Attachment. The following five evaluations were reviewed:

- CR-2005-01402 concerning B RFP pump oil leakage;
- CR-2005-00109 concerning low voltage operability limits for the 115 kV offsite power lines;
- CR-2005-01390 concerning 200 to 300 kW load swings on C EDG during full load testing;
- CR-2005-01569 concerning the identification of a defective spherical washer in the pilot valve assembly of one of the safety relief valves removed during the last refueling outage; and
- LO-OEN-2005-00110 concerning failure of safety/relief valve (SRV) tee-quencher support bolts at Hatch Unit 2.

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (71111.16 - 1 sample)

a. Inspection Scope

The inspectors completed one operator workaround inspection sample. The inspectors evaluated the cumulative impact of identified operator workarounds on the functionality

of the plants mitigating systems. The workarounds were reviewed to determine their affect on the functional capability of systems and operator reliability when responding to an event. The inspectors assessed the potential effect on an operators' ability to implement abnormal or emergency procedures, and verified that operator workaround problems were captured in Entergy's corrective action program. The inspectors also reviewed Entergy's assessment of the cumulative effects workarounds in accordance with procedure ST-99H, "Operator Work Arounds Assessment." Documents reviewed for this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17A - 1 sample)

a. Inspection Scope

The inspectors reviewed modification documents and conducted a walk down of the completed ballistic resistant enclosure (BRE) attached to the reactor building. The modification was completed under ER-JAF-04-23422. This modification was chosen for review due to its proximity to the condensate storage tank and the fact that it is attached to the reactor building concrete structure. A review of design documents revealed that adequate factors of safety were designed into the support for the structure to ensure that under all plausible conditions that the BRE would not negatively impact SSCs important to safety. A walk down of the finished structure determined that the structure was constructed per the approved design. Documents reviewed for this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing (71111.19 - 4 samples)

a. Inspection Scope

The inspectors reviewed post maintenance test procedures and associated testing activities for selected risk significant mitigating systems to assess whether the effect of maintenance on plant systems was adequately addressed by control room and engineering personnel. The inspectors verified that test acceptance criteria were clear, demonstrated operational readiness and were consistent with design basis document (DBD); that test instrumentation had current calibrations and the range and accuracy for the application; and that tests were performed, as written, with applicable prerequisites satisfied. Upon completion, the inspectors verified that equipment was returned to the proper alignment necessary to perform its safety function. The adequacy of the identified post-maintenance testing requirements were verified through comparisons with the recommendations of AP-05.07, "Maintenance Testing and Post-Work Testing,"

and the design basis documentation contained in the TSs, UFSAR and associated DBDs. The following four post maintenance test activities were reviewed:

- Work request (WR) JAF-05-19047, that involved a complete overhaul of the A SGT fan on June 6. The retest was performed by running the fan in accordance with OP-20, "Standby Gas Treatment System."
- WR JF-030170200, involving chemical flushing of the ESW supply piping to the west electric bay and west cable tunnel UCs on May 4, 2005. The retest was performed using temporary surveillance test procedure (TST)-104, "Testing of ESW Loop A."
- WRs JAF-05-19284 and JAF-05-19287 that involved installation of a new motor gear unit for the B CRD pump during weeks of April 18 and April 25. The retest was performed by running the B CRD pump in accordance with OP-25, "CRD Hydraulic System."
- WR JAF-05-22102 that installed a temporary recorder to monitor the performance of station battery charger 71BC-1A and replace alarm and control relay 3CR. The retest was performed in accordance with a formal troubleshooting plan that verified normal charger operation with no sporadic alarms.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 - 6 samples)

a. Inspection Scope

The inspectors witnessed performance of STs and/or reviewed test data of selected risk-significant SSCs to assess whether the SSCs satisfied TSs, UFSAR, technical requirements manual, and Entergy procedure requirements. The inspectors verified that test acceptance criteria were clear and consistent with design basis documentation included in the TSs, UFSAR and associated DBDs; that test instrumentation had current calibrations and the range and accuracy for the application; and that tests were performed, as written, with applicable prerequisites satisfied. Upon ST completion, the inspectors verified that equipment was returned to the status specified to perform its safety function. Documents reviewed for this inspection are listed in the Attachment. Six STs were reviewed:

- ST-2AM, "RHR Loop B Quarterly Operability Test (IST);"
- ST-8Q, "Testing of the ESW System (IST);"
- ISP-175A3, "Reactor Pressure ATWS Instrument Functional Test/Calibration (ATTS);"
- ST-28, "Portable Diesel Generator Operability Test;"
- TST-130, "MSIV Limit Switch Functional Test With Inoperable RPS Position Switch;" and
- ISP-16, "Drywell Floor Drain Sump Flow Loop Functional Test/Calibration" and IMP-20.11, "Drywell Equipment Sump Drain Flow Loop Functional Test/Calibration"

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23 - 2 samples)

a. Inspection Scope

The inspectors completed two TMs samples. The inspectors assessed the adequacy of the 10 CFR 50.59 evaluations for these TMs; that the installation was consistent with the modification documentation; that the drawings and procedures were updated as applicable; and that the post-installation testing was adequate. The inspectors also reviewed the results of ST-99G, "Temporary Modification Monthly Audit." Other documents reviewed for this inspection are listed in the Attachment. The following TMs were reviewed:

- TM 05-028 which monitored an alarm and control circuit on the A station battery charger; and
- TM 05-025 that supported short duration operation of the B CRD pump with a larger diameter impeller installed.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness [EP]

1EP6 Drill Evaluation (71114.06 - 1 sample)

a. Inspection Scope

The inspectors observed simulator activities associated with licensed operator requalification training graded scenario on May 4, 2005. The inspectors verified that emergency classification declarations and notification activities were properly completed associated with a scenario that involved a degraded 115 kV system voltage and an unisolable reactor water cleanup leak that caused high reactor building temperatures and required operators to emergency depressurize. Documents reviewed for this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Public Radiation Safety [PS]

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems (71122.01 - 10 samples)

a. Inspection Scope

The inspectors completed the following 10 inspection samples to evaluate the effectiveness of Entergy's radioactive gaseous and liquid effluent control programs. The requirements for radioactive effluent controls are specified by the TS and the offsite dose calculation manual (ODCM).

- The 2003 and 2004 radiological annual effluent release reports were reviewed including projected public dose assessments. No anomalous results were reported in these reports. The current ODCM and Section 11.4 of the UFSAR that describes the gaseous radioactive waste system were reviewed for changes. Quality assurance audit report QA-6-2005-JAF-1 regarding the radiological effluent treatment system (RETS), radiological effluent monitoring program (REMP) and the ODCM was also reviewed.

- The inspectors conducted a walkdown of the site's effluent radiation monitoring and air cleaning systems to verify availability and material condition. They observed sampling and laboratory measurement techniques, a steam jet air ejector gaseous effluent sample collection, counting and analysis, a turbine building exhaust radiation monitor calibration and verified the control room effluent monitor alarm setpoints.

- Selected radioactive continuous gaseous release daily reports during 2004 were reviewed with respect to ODCM and procedural requirements. There have been no radioactive liquid waste releases reported in the 2003 and 2004 radioactive annual effluent release reports other than tritium.

- There were no instances of unplanned effluent radiation monitoring system unavailability that would require compensatory sampling and analysis between January 2003 and May 2005.

- Changes to the ODCM Revision 9 were reviewed along with the technical justification for each change.

- Effluent release dose calculations were reviewed for each month of 2003 and 2004 with respect to TS and ODCM calculation methodology and 10 CFR 50, Appendix I public dose requirements. The inspectors verified the methods used and that no regulatory requirements were exceeded.

- The inspectors reviewed the most recent air cleaning system filter ST results required by TS for the SGT system.

- The inspectors reviewed the most recent calibration results for the gaseous and liquid effluent radiation monitors and associated flow rate measurement devices listed in the Attachment.

- Effluent liquid and gas sample radiation measurement equipment calibrations were reviewed for currently in-use high purity germanium gamma spectrometers. Selected counting equipment quality control charts were reviewed that documented continued operability of this equipment.

- Implementation of the measurement laboratory quality control program was reviewed, including effluent intra-laboratory and inter-laboratory comparisons. In addition, the inspectors reviewed the 2004 quality assurance audit of the radioactive liquid and gaseous effluent control program and the ODCM. The inspectors reviewed CRs initiated between January 2003 and May 2005 for issues related to the Fitzpatrick effluents program.

b. Findings

No findings of significance were identified.

2PS2 Radioactive Material Processing and Transportation (71122.02 - 6 samples)

a. Inspection Scope

The inspectors completed the following six inspection samples to verify Entergy's radioactive material processing and transportation programs complied with the requirements of 10 CFR 20, 61, and 71; and Department of Transportation (DOT) regulations 49 CFR 170-189. Documents reviewed for this inspection are listed in the Attachment.

- The inspectors reviewed the solid radioactive waste system description in Section 11.1 - 11.3 of UFSAR, the 2003 radiological effluent release report for information on the types and amounts of radioactive waste disposed, and the scope of Entergy's audit program to verify that it met the requirements of 10 CFR 20.1101.

- The inspectors walked-down the liquid and solid radioactive waste processing systems to verify that the current system configuration and operation agree with the descriptions contained in the UFSAR and in the process control program. They reviewed the status of any radioactive waste process equipment that was not operational or was abandoned in place and verified that changes were reviewed and documented in accordance with 10 CFR 50.59. The inspectors observed the transferring and dewatering of radioactive waste sludge into a shipping/disposal container and the transfer of the container to the interim waste storage facility to determine if appropriate waste stream mixing and/or sampling procedures and methodology for waste concentration averaging provided representative samples of the waste product for the purposes of waste classification per 10 CFR 61.55.

- The inspectors reviewed the radio-chemical sample analysis results for each of Entergy's radioactive waste streams; reviewed Entergy's use of scaling factors and calculations with respect to these radioactive waste streams to account for difficult-to-measure radionuclides; verified that Entergy's program assures compliance with 10 CFR 61.55 and 10 CFR 61.56 as required by Appendix G of 10 CFR Part 20; and reviewed Entergy's program to ensure that the waste stream composition data accounts for changing operational parameters and thus remains valid between the annual or biennial sample analysis update.

- The inspectors observed vehicle checks, shipment packaging, surveying, labeling, marking, placarding, and verification of shipment readiness for radioactive shipment no. 05-1216 on May 11, 2005. The inspectors verified that the receiving licensee was authorized to receive the shipment packages and reviewed emergency instructions, disposal manifests, and driver shipping papers. The inspectors determined that the shipper was knowledgeable of the shipping regulations and that shipping personnel demonstrated adequate skills to accomplish the package preparation requirements for public transport with respect to NRC Bulletin 79-19 and 49 CFR Part 172 Subpart H. The inspectors also verified that Entergy's training program provided training to personnel responsible for the conduct of radioactive waste processing and radioactive material shipment preparation activities.

- The inspectors sampled five non-excepted package shipment records listed in the Attachment and reviewed the records for compliance with NRC and DOT requirements.

- The inspectors reviewed the licensee event reports, special reports, audits, state agency reports, and self-assessments related to the radioactive material and transportation programs performed since the last inspection and determined that identified problems were entered into the corrective action program for resolution. The inspectors also reviewed corrective action reports written against the radioactive material and shipping programs since the previous inspection.

b. Findings

No findings of significance were identified.

2PS3 Radiological Environmental Monitoring Program (71122.03 -10 samples)

a. Inspection Scope

The inspectors completed the following 10 inspection samples associated with the radiological environmental monitoring program.

- The inspectors reviewed the current annual environmental monitoring report and assessment results to verify that the REMP was implemented as required by TS and the ODCM. The review included changes to the ODCM with respect to environmental monitoring commitments in terms of sampling locations, monitoring

and measurement frequencies, land use census, interlaboratory comparison program, and analysis of data. The inspectors also reviewed the ODCM to identify environmental monitoring stations. The inspectors reviewed self-assessments and audits, the audit program, licensee event reports, inter-laboratory comparison program results, and the UFSAR for information regarding the environmental and meteorological monitoring instrumentation to verify that it met the requirements of 10 CFR 20.1101.

- The inspectors walked down nine air particulate and iodine sampling stations, four ground water sampling locations, and 11 thermoluminescent dosimeter monitoring locations and determined that they were located as described in the ODCM and that the equipment material condition was acceptable.

- The inspectors verified that environmental sampling was representative of the release pathways specified in the ODCM and that sampling techniques were in accordance with procedures. The inspectors observed the collection and preparation of airborne particulate and iodine samples, water discharge and control samples, and Lake Ontario fish samples processed and counted during the inspection. The inspectors also visited three farms within 10 miles of the plant that provided milk samples.

- Based on direct observation and review of records, the inspectors verified that the meteorological instruments were operable, calibrated, and maintained in accordance with guidance contained in the UFSAR, NRC Safety Guide 23, and Entergy procedures. The inspectors verified that the meteorological data readout and recording instruments in the control room and at the tower were operable and provided the same data values.

- The inspectors reviewed each event documented in the annual environmental monitoring report that involved a missed sample, inoperable sampler, lost Thermoluminescent dosimeter, or anomalous measurement for cause and corrective actions. The inspectors conducted a review of Entergy's assessment of any positive sample results.

- The inspectors reviewed significant changes that Entergy made to the ODCM as a result of changes to the land census or sampler station modifications completed since the last inspection. The inspectors also reviewed technical justifications for sampling station location changes and verified that Entergy performed the reviews required to ensure that the location change did not affect the station's ability to monitor the impacts of radioactive effluent releases on the environment.

- The inspectors verified that appropriate detection sensitivities with respect to the TS and ODCM were utilized for counting samples. They reviewed the results of the Entergy's quality control program including the interlaboratory comparison program and the quality control evaluation of that program. The inspectors also reviewed Entergy's review of the sampling data for bias and its overall effect on the REMP.

- The inspectors observed the three egress points from the radiologically controlled area (RCA) where Entergy monitors potentially contaminated material leaving the RCA. They inspected the methods used for control, survey, and release from these areas, including observing the performance of personnel surveying and releasing material for unrestricted use.

- The inspectors verified that the radiation monitoring instrumentation was appropriate for the radiation types present and was calibrated with appropriate radiation sources. The inspectors reviewed Entergy's criteria for the survey and release of potentially contaminated material; verified that there was guidance on how to respond to an alarm; and reviewed Entergy's equipment to ensure the radiation detection sensitivities were consistent with the NRC guidance contained in IE Circular 81-07 and IE Information Notice 85-92 for surface contamination and HPPOS-221 for volumetrically contaminated material. The inspectors also reviewed Entergy's procedures and records to verify that the radiation detection instrumentation was used at its typical sensitivity level based on appropriate counting parameters and verified that Entergy did not establish a "release limit" by altering the instrument's typical sensitivity through such methods as raising the energy discriminator level or locating the instrument in a high radiation background area.

- The inspectors reviewed licensee event reports, special reports, and audits performed since the last inspection and related to the radiological environmental monitoring program to verify that identified problems were entered into the corrective action program for resolution. The inspectors also reviewed CRs involving environmental sampling, sample analysis or meteorological monitoring instrumentation that were initiated between August 2003 and June 2005 to ensure environmental issues were properly identified and characterized, and that root causes were determined and corrective actions were specified commensurate with safety significance.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

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

1. Annual Sample Review

a. Inspection Scope

The inspectors selected two corrective action issues for detailed review. CR-2003-05758 dealt with Entergy's common badge project and a problem with the site's biometric card readers. CR-2004-04791 dealt with an event that occurred during the last refueling outage when operators lowered reactor water level over 100 inches without adequate indication. These reports were reviewed to ensure that an appropriate

evaluation was performed and appropriate corrective actions were specified. The inspectors evaluated the reports against the requirements of procedure ENN-LI-102, "Corrective Action Process," and 10 CFR 50, Appendix B. Documents reviewed for this inspection are listed in the Attachment.

b. Findings and Observations

No findings of significance were identified. For the inadequate level monitoring issue identified in CR-2004-04791, Entergy identified several causes including an inadequate level of detail in the outage risk assessment that resulted in conducting several tests at the same time without a complete awareness of the impact that the activities had on each other and the loss of control of equipment that should have been protected. Entergy identified a number of corrective actions to address these issues. The inspectors observed that all corrective actions were scheduled for completion prior to the next refuel outage, but that some, like improving outage risk assessment procedures, that would be applicable and beneficial to operations during forced outages, were not scheduled for completion until the end of this year. The inspectors discussed this observation with Entergy management who initiated a corrective action to evaluate the required due dates for the remaining outstanding corrective actions.

2. Routine PI&R Program Review

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of all items entered into Entergy's corrective action program. The review was accomplished by accessing Entergy's computerized database for CRs and attending CR screening meetings.

In accordance with the baseline inspection modules the inspectors selected 66 corrective action program items across the initiating events, mitigating systems, barrier integrity, and public radiation safety cornerstones for additional follow-up and review. The inspectors assessed Entergy's threshold for problem identification, the adequacy of the cause analyses, extent of condition review, and operability determinations, and the timeliness of the specified corrective actions. The CRs reviewed are noted in the Attachment.

The inspectors also performed a semiannual review of the Entergy's corrective action program to access trends that might indicate the existence of more significant safety issues. This semiannual review included a review of the Entergy's system health reports, maintenance backlogs, engineering requests, self assessment reports, and the CR data base.

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up (71153 - 2 samples)

1. Shutdown Due to Inoperable Primary Containment

a. Inspection Scope

The inspectors observed portions of a normal plant shutdown required by TS 3.8.1, "Primary Containment," that commenced on June 30. Entergy declared a Notification of an Unusual Event (NUE) based on Emergency Action Level (EAL) - 9.1.2, "Potential Loss of Containment," and promptly notified the NRC of the condition per 10 CFR 50.72. The inspectors verified that all TS-required emergency core cooling systems were operable and that no significant unexpected alarms or conditions occurred. The NUE was terminated on July 1 when operating mode 4 (cold shutdown) was achieved.

b. Findings

No findings of significance were identified.

2. (Closed) LER 05000333/2005002-00, Safety Relief Valve Setpoints Outside of Allowable Tolerances

On April 5, 2005, Entergy identified that it had operated in modes 1,2, and 3 during operating cycle 16 with less than nine operable SRVs as required by TS. Five SRVs that Entergy had removed during RFO-16 had as-found setpoints outside the high tolerance limit allowed by TS 3.4.3.1. The finding is greater than minor because it had a credible impact on safety in that reduced reliability and functionality of the safety system designed to mitigate a reactor overpressure event that could adversely affect fuel cladding and reactor coolant system pressure boundary integrity. SRV setpoint drift due to oxidic binding of the pilot valves has been a generic industry issue that the NRC and the GE Boiling Water Reactors Owners Group continue to address. The condition at FitzPatrick was mitigated by two considerations: (1) while the SRVs did not lift within the TS-prescribed high limit, they did actuate at higher pressures; and (2) a diverse SRV electronic pressure switch actuation system was available. Since the plant continued to operate within the bounds of the design basis safety analyses, there was no loss of safety function. Using Phase 1 of IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the inspectors determined that the condition was a design or qualification deficiency confirmed not to result in a loss of function per Generic Letter 91-18, Revision 1. Therefore, the risk associated with this condition was of very low significance. This licensee-identified finding involved a violation of TS 3.4.3, "SRVs." The enforcement aspects of the violation are discussed in Section 40A7. This LER is closed.

4OA4 Cross Cutting Aspects of Findings

Section 2PS2 describes a finding associated with the personnel aspect of the human performance cross-cutting area . Entergy personnel did not verify proper transcription of

laboratory analysis results into the Radman database program used to calculate waste classification for radioactive shipments.

4OA5 Other Activities

1. TI 2515/163, Operational Readiness of Offsite Power

Cornerstones: Initiating Events, Mitigating Systems

The inspectors performed Temporary Instruction 2515/163, "Operational Readiness of Offsite Power." The inspectors collected and reviewed Entergy procedures and supporting information pertaining to the offsite power system specifically relating to the areas of offsite power operability, the MR (10 CFR 50.65), and the station blackout rule (10 CFR 50.63). The inspectors reviewed this data against the requirements of 10 CFR 50.63; 10 CFR 50.65; 10 CFR 50 Appendix A General Design Criterion 17, "Electric Power Systems;" and Plant Technical Specifications. This information was forwarded to NRR for further review.

4OA6 Meetings, Including Exit

The inspectors presented the inspection results to Mr. Ted Sullivan and other members of Entergy management on July 20, 2005. Entergy acknowledged that no proprietary information was involved.

4OA7 Licensee-identified Violations

The following violations of very low safety significance (Green) were identified by Entergy and are violations of NRC requirements that meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as an NCV.

- TS 5.4.1.d requires that fire protection program procedures be implemented. Entergy procedure ENN-DC-161, "Transient Combustible Program," limits the amount of loose transient combustible materials that may be placed in the screenwell house without a transient combustible evaluation (TCE). Contrary to this on April 27, 2005, over 22,000 pounds of fire retardant dunnage was taken into the screenwell house for a radiological release survey without having an approved TCE. This was identified in Entergy's corrective action program as CR-2005-01669. This finding is of very low safety significance because (1) no ignition sources were present and (2) it did not result in an impairment or degradation of pumps necessary for safe shutdown or of fire protection features or defense in depth elements in the screenwell house.

- TS 3.4.3 requires that at least nine SRVs shall be operable in operating modes 1,2, and 3. On April 5, 2005, Entergy identified that it had operated in these modes during cycle 16 with less than nine operable SRVs. Entergy documented this condition in CR-2005-01296. This finding is of very low safety significance because

it did not result in loss of the overpressure relief safety function of the valves. Documents reviewed for this inspection are listed in the Attachment.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Entergy Personnel

N. Arvakatos, Emergency Preparedness Coordinator
P. Berry, Manager, Training
S. Bono, VP Engineering
M. Durr, Manager, System Engineering
J. Gerety, Manager, Programs and Components Engineering
D. Johnson, Manager, Operations
J. LaPlante, Manager, Security
A. McKeen, Manager, Radiation Protection
K. Mulligan, General Manager, Plant Operations
J. Pechacek, Manager, Design Engineering
R. Plasse, Acting Manager, Regulatory Compliance
W. Rheaume, Manager, CA&A
B. Sholler, Manager, Plant Maintenance
T. Sullivan, Vice President, Operations
D. Wallace, Director, Nuclear Safety Assurance

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

NONE

Opened and Closed

05000333/2005004-01	NCV	Inadequate design control of west cable tunnel cooler 67E-11 (Section 1R07)

Closed

05000333/2005002-00	LER	Safety Relief Valve Setpoints Outside of Allowable Tolerances (Section 4OA3.2)

Discussed

NONE

Attachment

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

OP-51A, “Reactor Building Ventilation and Cooling System”
OP-52, “Turbine Building Ventilation”
OP-54, “Radwaste Building Heating and Ventilation System”

Section 1R04: Equipment Alignment

OP-22, “Diesel Generator Emergency Power”
WO JAF-05-18545, C EDG had load oscillations in the 200-300 kW range
WO JAF-05-14030, Load Drifting observed on C EDG during ST-9BA

Section 1R06: Flood Protection Measures

Information Notice 2005-11, “Internal Flooding/Spray-Down of Safety-Related Equipment due to Unsealed Equipment Hatch Floor Plugs and/or Blocked Drains”
AP-16.14, “Hazard Barrier Controls”
EOP-5, “Secondary Containment Control,”
CR-2003-05064, Control of equipment status needed to comply with flooding analysis in IPEEE
WO JAF-05-19290, Reactor building equipment drain sump inspection
AOP-43, “Plant Shutdown from Outside the Control Room”

Section 1R07: Heat Sink Performance

Procedures

AP-09.02, “Zebra Mussel Control Program”
AP-19.12, “Service Water Inspection Program”
AP-19.14, “Eddy Current Testing of Heat Exchanger Tubes”
AOP-64, “Loss of Intake Water Level”
MP-046.04, “East and West Electric Bay UC Supply Piping Chemical Cleaning (ISI)”
MP-066.01, “UC Maintenance”
MP-070.04, “Air Handling Units 70AHU-19A & B, 70AHU-12A & B, 70AHU-3A & B Maintenance”
OP-7A, “Chlorine Injection System”
OP-62, “Pipe and Cable Tunnels Ventilation Systems”
RT-02.01, “Chemical Flush”

Testing and Inspections

ST-2XB, “RHR Service Water Loop B Quarterly Operability Test (IST)”
ST-2Y, “RHR Heat Exchanger Performance Test”
ST-8Q, “Testing of the ESW System (IST)”
ST-18C, “Control Room Ventilation Air Handling Unit Performance Test”
ST-19H, “Cable Tunnel Ventilation Cooler Performance Test with ESW Flow”

Eddy Current Examination Final Report, “West Cable Tunnel Cooling Coils - 67E-11,” dated June 1993
Eddy Current Examination Final Report, “2B Residual Heat Removal Heat Exchanger,” dated April 2003

Engineering Evaluations and Calculations

Calc - 14620.9033-004, “Total Available Tube Plugging Margin in the Cable Tunnel Coolers”
JAF-CALC-CRC-04276, “Maximum Allowable Tube Plugging Limit for Control Room & Relay Room Air Handling Units”
JAF-CALC-ELEC-02418, “Electrical Cables in East Cable Tunnel Operating at elevated Temperature (50 ºF)”
JAF-CALC-RHR-02945, “Tube Minimum Required Wall Thickness of RHR Heat Exchangers”
JAF-CALC-SWS-00621, “Flow Equations for ST-8Q Acceptance Criteria”
JAF-CALC-TBC-02450, “Heat Required to be Removed by Cable Tunnel Coolers 67E-11 and 67E-14 to Maintain Post-LOCA Design Temperatures Accounting for the Effects of Heat Sinks and Ventilation Air Flow”
JAF-RPT-MULTI-01267, “Raw Water Systems Program Plan”

Design Basis Documents and Generic Letter 89-13 Program

Response to NRC Generic Letter 89-13 Service Water System Problems Affecting Safety-Related Equipment February 1990 - March 1993
Design Basis Document (DBD-046), “Normal Service Water / ESW / RHR Service Water”
Design Basis Document (DBD-067), “Turbine Building Ventilation and Cooling System”

Miscellaneous

EPRI NP-7552, “Heat Exchanger Performance Monitoring Guidelines”
EPRI TR-107397, “Service Water Heat Exchanger Testing Guidelines”

Operating Experience

NRC Information Notice 96-36, “Degradation of Cooling Water Systems Due to Icing”
NRC Information Notice 98-02, “Nuclear Power Plant Cold Weather Problems and Protective Measures”
NUREG-1275, Vol. 3, “Operating Experience Feedback Report - Service Water System Failures and Degradations”
NUREG/CR-0548, “Ice Blockage of Water Intakes”
NUREG/CR-5865 EGG-2674, “Generic Service Water System Risk-Based Inspection Guide”
NRC Generic Letter 89-13, “Service Water System Problems Affecting Safety-Related Equipment”
NRC Generic Letter 96-06, Supplement 1, “Assurance of Equipment Operability and Containment Integrity During Design-Basis Accident Conditions”

System Health Reports and Trending Data

ESW System Health Report (First Quarter 2005)
Normal Service Water System Health Report (First Quarter 2005)

Work Orders

JF-990259600
JF-030437400
JF-030437500
JAF-03-27984
JAF-05-14935

Section 1R11: Licensed Operator Requalification

EN-TQ-202, "Simulator Configuration Control"
James A. FitzPatrick Nuclear Power Plant Evaluation Scenario 2005J, "Inadvertent HPCI start/Loss of CRD/Unisolable RWCU steam leak in Reactor Bldg/Degraded 115 kV system voltage/Emergency depressurization"
ENN-PL-163, "Operations Expectations and Standards"
AP-12.03, "Conduct of Operations"
ENN-HU-102, "Human Performance Tools"
AP-12.06, "Procedure Use and Adherence"

Section 1R12: Maintenance Effectiveness

JENG-APL-03-010, "Maintenance Rule (a)(1) Action Plan for 23MOV-16, HPCI Turbine Steam Supply Outboard CIV"

Section 1R13: Maintenance Risk Assessments and Emergent Work Evaluation

WO JAF-04-21966, Perform diagnostic testing of 46MOV-102B operator
ISP-100B-PCIS, "PCIS Instrument Functional Test/Calibration (ATTS)"
CR-2005-01375, During week 0513 NYPA conducted detailed aerial inspection of 345 kV transmission lines
ST-40C, "Computer Out of Service Surveillance"
GE Energy Field Engineering Report for B CRD pump, Speed Increaser (S-231-BJ), Serial #138776 dated May 9, 2005
WO JAF-05-20963, B turbine building closed loop cooling pump 37P-2B inboard oil sight glass empty
ST-19, "Battery Room Ventilation Equipment Operability Test"

Section 1R14: Personnel Performance During Non-routine Plant Evolutions

ENN-PL-163, "Operations Expectations and Standards"
AP-12.03, "Conduct of Operations"

ENN-HU-102, “Human Performance Tools”

AP-12.06, “Procedure Use and Adherence”

Section 1R15: Operability Evaluations

Woodward Governor Company Manual 37708J, "EG-B10C Governor/Actuator"
WO JAF-05-18545, C EDG had load oscillations in the 200 to 300 kW range with 3 500 kW swings

Section 1R16: Operator Workarounds

WR JAF-04-40213, A RFP tachometer-generator output low
WR JAF-04-41081, B RFP tachometer-generator output low
WR JAF-05-15730, Torus exhaust inner isolation valve operator air-to-manual actuator adjustment
WR JAF-05-19062, Density compensation for HPCI/RCIC level control
WR JAF-04-39657, Testing of the automatic loading of moisture separator reheaters

Section 1R17: Permanent Plant Modifications

ER-JAF-04-23422, "Reactor Building BRE"
JAF-ECCF-04-00047, "Reactor Building BRE Change Control Form"
JAF-DRN-04-05307, "BRE Support Structures"
ERCN-JAF-04-23422-007, "Reactor Building BRE Change Notice
Drawing- SK-JAF-04-23422-002, "Reactor Building Wall BRE Support Frame and Misc. Details"

Section 1R22: Surveillance Testing

JAF-CALC-RHR-00407, "RHR pump discharge orifice replacement"
JAF-CALC-RHR-00633, "POT-10T, RHR pre-operational testing data analysis"
JTS-97-0245, Memorandum from L. Baker to J. Boyer regarding input to pump IST surveillances, evaluation 97-004, dated 10/2/97
JTS-97-0264, Memorandum from L. Baker to J. Boyer regarding changes to valve and pump IST surveillance monitoring parameters, evaluation 97-005, dated 10/8/97
JTS-97-0301, Memorandum from P. Brozenich to J. Boyer regarding IST pump performance for the third interval, dated 11/14/97
JTS-97-0305, Memorandum from P. Abbott to J. Boyer regarding changes to IST pump surveillance procedures, dated 11/20/97
Dwg FM-20A, Flow diagram residual heat removal system, revision 70
Dwg 2.11-29, "Pump test data, 10P-3D",
Dwg 2.11-28, "Pump test curve, 10P-3D"
Dwg 2.11-24, "Pump test data, 10P-3B"
Dwg 2.11-28, "Pump test curve, 10P-3B"

Section 1R23: Temporary Plant Modifications

Sam Patane Letter JMD-97-360 to Al Miller, Ingersoll-Dresser dated 11/13/97, "CRD Design Basis"
Sheldon Kohr Memo JDED-97-0529 to Sam Patane, dated 11/13/97, "CRD Design Basis"
Sam Patane Memo JMD-97-349 to Andy Halliday, dated 11/4/97, "CRD Pump 03P-16B Excessive Pump Discharge Pressure"

Alan C. Miller (IDP) Letter to Sam Patane (NYPA) dated 10/31/97, “Worthington CRD pump S/N 1620867/8"
General Electric Document (Purchase Order 88-0590) dated 8/88, “James A. FitzPatrick Nuclear Power Plant Safety Evaluation of CRD System with High Drive Water Pump Suction Pressure”
OP-25, “CRD Hydraulic System Operating Procedure”

1EP6: Drill Evaluation

NEI 99-02, “Regulatory Assessment Performance Indicator Guideline”
James A. FitzPatrick Emergency Plan Volume 1
James A. FitzPatrick Emergency Plan Implementing Procedures

Section 2PS1: Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

Calibration results for the following radiation monitors: RM-17-350, RM-17-456A/B, RM-17-452A/B, RM-17-431/432, RM-17-458A/B, RM-17-50A/B, RM-17-150A/B
QA-6-2005-JAF-1, RETS/REMP/ODCM Audit Report

Section 2PS2: Radioactive Materials Processing and Shipping

Radiation Protection Program Self-Assessment: Radwaste Program RP.7, May 4, 2005
Radiation Protection Program Self-Assessment: Use of Chem-Nuclear 14-170 DOT 7A Type A Shipping Casks, RP.5 and RP.7, November 13, 1999
Quality Control Surveillance: Chem-Nuclear Cask Loading and Shipping (14-215H), March 10, 2005
Quality Control Surveillance: Two Year Assessment of Radwaste Shipping and Storage Program, December 2003
Quality Assurance Surveillance: Radwaste Dewatering Training, November 2003
Quality Assurance Audit no. QA-6-2005-JAF-1: ODCM, REMP, RECP, PCP and SPDES, March 2005
NUPIC Audits: Framatome ANP, December 2003; Duratek - Barnwell, April 2003; Barnwell - Oakridge and Kingston, TN, May 2003; Studsvik, October 2004; RACE, January 2003
AP-06.01, “Process Control Program”
RP-OPS-05.04, “Radioactive Waste Data Base Control Program”
ENN-RW-102, “Setup and Operating Procedure for RDS-1000"
Radioactive shipment no. 05-1216, DAW shipment to RACE on May 11, 2005
Radioactive shipment no. 05-1212, bead resin shipment to Studsvik on March 28, 2005
Radioactive shipment no. 04-1181, 20 CRDs shipped to Duratek on October 6, 2004
Radioactive shipment no. 04-1191, powdered resin shipped to Studsvik on November 9, 2004
Radioactive shipment no. 04-1186, diaphragms shipped to Alaron on October 26, 2004

Section 4OA2: Identification and Resolution of Problems

Root Cause Analysis Report, dated 11/19/04
AP-12.12, “Protected Equipment Program”
ST 39H, “RPV System Leakage Test and CRD Class 2 Piping Inservice Test”
EN-LI-102, “Corrective Action Process”

JAF-LI-102, “JAF Corrective Action Process”
EN-HU-101, “Human Performance Program”
AP-10.05, “Outage Risk Assessment”
Memo from Kevin Mulligan to Wayne Rheame, Subject: “Operating Experience Submittal,” dated December 10, 2004
Operating Experience Industry Summary, dated March 2, 2005
Memo on Event to be discussed by all plant groups “Traffic Light Status,” undated
Lesson Plan SDLP-02B, “Reactor Vessel Level Instrumentation”
NRC Inspection Report 05000333/2004005, dated February 2, 2005
NRC Operating Experience Briefing 2005-03, dated April 29, 2005
Fitzpatrick Offsite Dose Calculation Manual
Fitzpatrick Annual Radiological Environmental Operating Report 2003
Fitzpatrick Annual Radiological Environmental Operating Report 2004
2004 Land Use Census Report
2004 quality assurance audit (RETS/REMP/ODCM Audit Report, QA-6-2005-JAF-1)
Fitzpatrick Environmental Laboratory 2004 Quality Assurance Report
Environmental Contractor Assessment of EA Engineering, Support and Technology (9/24/03)

Condition Reports

1999-01804	2004-04287	2004-05461	2005-01901	2005-02621
2003-04371	2004-04299	2002-00952	2005-02464	2005-02576
2003-05435	2005-01864	2004-05539	2005-02467	2005-01502
2004-00973	2004-04727	2005-00452	2005-02470	2005-02531
2004-02453	2005-00730	2004-00908	2005-01296	2005-02266
2004-02130	2005-00734	2003-01333	2005-01682	2005-02069
2004-02635	2002-04815	2003-01629	2005-01876	2005-02344
2004-04244	2003-04950	2003-02547	2005-01901	2005-00642
2004-00876	2003-03653	2003-00882	2005-01256	2005-01368
2005-02659	2003-03564	2004-02661	2005-01899	2005-01390
2004-02642	2002-05566	2004-05346	2005-01953	2005-01418
2005-00698	2004-04768	2005-01877	2005-01079	2005-01891
2004-04273	2004-04943	2005-01899	2005-02657	

Section 4OA7: Licensee-identified Violations

ER-JAF-05-19834, “Perform Limiting ASME Overpressure and ATWS Analysis for Cycle 16"

LIST OF ACRONYMS

AHU	air handling unit
AOP	abnormal operating procedure
BRE	ballistic resistant enclosure
CFR	code of federal regulations
CR	condition report
CRD	control rod drive
Cs	cesium
DBD	design basis document
DOT	department of transportation

EAL	emergency action level
EDG	emergency diesel generator
ENN	Entergy Nuclear Northeast
EOP	emergency operating procedure
ER	engineering request
ESW	emergency service water
HPCI	high pressure coolant injection
HX	heat exchanger
IMC	inspection manual chapter
IPE	individual plant examination
IPEEE	individual plant examination of external events
kV	kilovolt
LOCA	loss of coolant accident
LOOP	loss of off-site power
MR	maintenance rule
NCV	non-cited violation
NRC	Nuclear Regulatory Commission
NUE	notification of unusual event
ODCM	offsite dose calculation manual
OP	operating procedure
PCIS	primary containment isolation system
PI&R	problem identification and resolution
RCA	radiologically controlled area
RECS	radiological emergency communications system
REMP	radioactive environment measurement program
RETS	radioactive effluent technical specifications
RFP	reactor feedwater pump
RHR	residual heat removal
RHRSW	residual heat removal service water
RPS	reactor protection system
SDP	significance determination process
SGT	standby gas treatment
SRV	safety/relief valve
SSC	structure, system, or component
ST	surveillance test procedure
TCE	transient combustible evaluation
TS	technical specification
TST	temporary surveillance test procedure
UC	unit cooler
UFSAR	Updated Final Safety Analysis Report
UHS	ultimate heat sink
WR	work request