

August 2, 2007

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 LICENSE
RENEWAL INSPECTION REPORT 05000333/2007007

Dear Mr. Dietrich:

On April 26, 2007, an NRC team completed the onsite portion of its inspection of your application for license renewal of your James A. FitzPatrick Nuclear Power Plant. The enclosed report documents the results of the inspection, which were discussed on June 21, 2007, with you and members of your staff in an exit meeting open for public observation in Fulton, New York.

The purpose of this inspection was to examine the plant activities and documents that support the application for a renewed license of the James A. FitzPatrick Nuclear Power Plant. The inspection reviewed the screening and scoping of non-safety related systems, structures, and components, as required in 10 CFR 54.4(a)(2), and determined whether the proposed aging management programs are capable of reasonably managing the effects of aging. These NRC inspection activities constitute one of several inputs into the NRC review process for license renewal applications.

The inspection team concluded screening and scoping of non-safety related systems, structures, and components were implemented as required in 10 CFR 54.4(a)(2), and the aging management portion of the license renewal activities was conducted as described in the License Renewal Application. The inspection concluded that the documentation supporting the application was in an auditable and retrievable form. The team identified a number of areas that resulted in changes to the application, programs, and procedures.

Overall, the inspection results support a conclusion that the proposed activities will reasonably manage the effects of aging in the systems, structures, and components identified in your application and that the intended functions of these systems, structures, and components will be maintained in the period of extended operation.

P. Dietrich

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Sincerely,

/RA/

Richard J. Conte, Chief
Engineering Branch 1
Division of Reactor Safety

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

Enclosure: Inspection Report 05000333/2007007

P. Dietrich

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Sincerely,

/RA/

Richard J. Conte, Chief
Engineering Branch 1
Division of Reactor Safety

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U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No: 50-333

License No: DPR-59

Report No: 05000333/2007007

Licensee: Entergy Nuclear Northeast (Entergy)

Facility: James A. FitzPatrick Nuclear Power Plant

Location: Post Office Box 110
Lycoming, NY 13093

Dates: April 9 - 12, 2007
April 23 - 26, 2007

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Approved By: Richard J. Conte, Chief
Engineering Branch 1
Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000333/2007007; 04/09/2007 - 04/26/2007; James A. FitzPatrick Nuclear Power Plant; Scoping of Non-Safety Systems and the Proposed Aging Management Procedures for the James A. FitzPatrick Nuclear Power Plant Application for Renewed License.

This inspection of license renewal activities was performed by seven regional office inspectors. The inspection was performed in accordance with NRC Manual Chapter 2516 and NRC Inspection Procedure 71002. This inspection did not identify any findings as defined in NRC Manual Chapter 0612. The inspection team concluded screening and scoping of non-safety related systems, structures, and components were implemented as required in 10 CFR 54.4(a)(2), and the aging management program portions of the license renewal activities were conducted as described in the License Renewal Application. The inspection concluded the documentation supporting the application was in an auditable and retrievable form. The team identified a number of areas that resulted in changes to the application, programs, and procedures.

Overall, the inspection results support a conclusion that the proposed activities will reasonably manage the effects of aging in the systems, structures, and components identified in your application and that the intended functions of these systems, structures, and components will be maintained in the period of extended operation.

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Report Details

4. OTHER ACTIVITIES (OA)

4OA2 Other - License Renewal

a. Inspection Scope (IP 71002)

This inspection was performed by NRC Region I based inspectors to evaluate the thoroughness and accuracy of the screening and scoping of non-safety related systems, structures, and components, as required in 10 CFR 54.4(a)(2) and to evaluate whether aging management programs will be capable of managing identified aging effects in an appropriate manner.

The inspectors selected a number of systems, components, and structures for review to determine if the methodology applied by Entergy appropriately addressed the non-safety systems affecting the safety functions of a system, structure, or component within the scope of license renewal.

The inspectors selected a sample of aging management programs to verify the adequacy of Entergy's guidance, implementation activities, and documentation. The selected aging management programs were reviewed to determine whether the proposed aging management implementing processes would adequately manage the effects of aging.

The inspectors reviewed supporting documentation and interviewed Entergy personnel to confirm the accuracy of the license renewal application conclusions. For a sample of plant systems and structures, the inspectors performed visual examinations of accessible portions of the systems to observe aging effects.

b.1. Scoping of Non Safety-Related Systems, Structures, and Components

For scoping and screening, the inspectors reviewed Entergy's program guidance procedures and summaries of scoping and screening results for FitzPatrick to assess the thoroughness and accuracy of the methods used to bring systems, structures, and components within the scope of license renewal into the application and to screen non-safety related systems, structures, and components, as required in 10 CFR 54.4(a)(2). The inspectors determined Entergy's procedures to be consistent with the NRC accepted guidance in Sections 3, 4, and 5 of Appendix F to NEI 95-10, Revision 5 (3: non-safety related systems, structures, and components within scope of the current licensing basis, 4: non-safety related systems, structures, and components directly connected to safety-related systems, structures, and components, and 5: non-safety related systems, structures, and components not directly connected to safety-related systems, structures, and components).

The inspectors reviewed the set of license renewal drawings, which had been color-coded to indicate systems and components in scope for 10 CFR 54.4.(a)(1) and (a)(3). The inspectors interviewed personnel, reviewed license renewal program documents, and independently inspected numerous areas within the plant to confirm that appropriate

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systems, structures, and components had been included within the license renewal scope, that systems, structures, and components excluded from the license renewal scope had an acceptable basis, and that the boundary for determining license renewal scope within the systems, including seismic supports and anchors, was appropriate.

The in-plant areas and systems reviewed included the following:

- Reactor Building
- Turbine Building
- Screenwell-pumphouse
- Service Water Pumphouse
- Standby Gas Treatment System Building
- Diesel Generator Rooms
- Diesel Fire Pump Room
- Security Generator
- Turbine Building Closed Loop Cooling (TBCLC) System
- Standby Liquid Control (SLC) System
- Heating, Ventilation, and Air Conditioning System
- Service Air/Instrument Air System
- Service Water System

For systems, structures, and components selected regarding spatial interaction (failure of nonsafety-related components adversely affecting adjacent safety-related components), overall, the inspectors determined that the in-plant configuration had been accurately and acceptably categorized within the license renewal program documents. The inspectors determined the personnel involved in the process were knowledgeable and appropriately trained. Nonetheless, during a review of the Standby Gas Treatment Building, the inspectors noted that some lines of the roof drain system had the potential for spatial interaction with safety-related components and should have been included within the license renewal scope. Entergy corrected this omission in License Renewal Application, Amendment 11, dated May 17, 2007, by including the floor and roof drainage system.

For systems, structures, and components selected regarding structural interaction (seismic design of safety-related components dependent upon nonsafety-related components), overall, the inspectors determined that structural boundaries had been accurately determined and categorized within the license renewal program documents. The inspectors determined that Entergy had reviewed applicable isometric drawings to determine the seismic design boundaries and had correctly included the applicable component types in the license renewal application, based on the inspectors' independent review of a sample of the isometric drawings and the seismic boundary determinations. Nonetheless, during a review of the instrument air system, it became apparent that a portion of the air system had an additional material/environment

combination which should have been included within the license renewal scope. Entergy corrected this omission in License Renewal Application, Amendment 11, dated May 17, 2007, by including the applicable material/environment combination for the instrument air system.

In addition, during an in-plant review of the security generator, it was determined that a an oil level sight glass should have been included within the license renewal scope. The generator is credited with functions associated with meeting 10 CFR, Appendix R requirements, and as such, is within the scope of the license renewal rule. Subsequently, Entergy determined that modifications to add the sight glass to the generator had not been properly reflected on the drawings used as a basis for the application. Entergy corrected this omission in License Renewal Application, Amendment 11, dated May 17, 2007, by including the security generator sight glass.

In summary, the inspectors concluded that Entergy had implemented an acceptable method of scoping and screening of non-safety related systems, structures, and components and that this method resulted in accurate scoping determinations.

b.2. Aging Management Programs

Containment Inservice Inspection Program

The Containment Inservice Inspection Program (American Society of Mechanical Engineers (ASME) Code, Section XI, Subsection IWE Program) is an existing program modified for the purpose of aging management and is credited with managing the aging effects in primary containment systems, i.e., drywell and torus. ASME Section XI, Subsection IWE provides for inspection of primary containment components and the containment vacuum breaker system piping and components. It covers steel containment shells and their integral attachments, containment hatches and airlocks, seals and gaskets, containment vacuum breaker system piping and components, and pressure retaining bolting. The aging effects are managed by periodic sampling inspections, evaluations of inspection results, and repairs of any significant degradation.

The inspectors reviewed the results of recent inspections of the drywell and torus, and Entergy's analysis of the structural integrity of the torus based upon recent and past inspection results. The inspectors determined that Entergy has performed adequate inspections to detect the effects of aging on both the drywell and torus. Minor degradation of the drywell interior coating has been detected, and augmented UT thickness measurements have not been necessary. Torus degradation has been occurring for several years; however, Entergy has performed appropriate inspections, analyses and repairs to demonstrate the structural integrity of the torus. Entergy's program contains requirements to continue inspections of the containment, evaluations of observed degradation, and prediction of remaining service life during the original license period and throughout the period of extended operations.

For the Containment Inservice Inspection Program, the inspectors concluded Entergy had performed adequate evaluations, as well as industry experience and historical reviews, to determine appropriate aging effects. Entergy provided adequate guidance to ensure aging effects are appropriately identified and addressed.

Reactor Vessel Surveillance Program

The Reactor Vessel Surveillance Program is an existing program credited with managing the aging affects in the plates of the reactor vessel beltline area. The aging effects are managed by a program of periodic sample analysis and evaluation to ensure that the materials composing the reactor vessel retain adequate properties to perform throughout the period of extended operation.

The inspectors reviewed the program to verify that material samples have been analyzed in the past. For the remainder of the original license and for the period of extended operation, Entergy will compare the plant's reactor vessel properties with sample analyses of material samples from other similarly-aged reactor vessel materials. The inspector reviewed the results of past sample analysis results, and reviewed the other similar plant material analyses which will be used for comparison with the FitzPatrick vessel material properties.

For the Reactor Vessel Surveillance Program, the inspectors concluded that Entergy had performed adequate evaluations, as well as industry experience and plant historical reviews, to determine appropriate aging effects. Entergy provided adequate guidance to ensure aging effects would be appropriately identified and addressed.

Containment Leak Rate Monitoring Program

The Containment Leak Rate Monitoring Program is an existing program which monitors the leak rate from the primary containment and complies with the regulations of 10 CFR Part 50, Appendix J. The containment leak rate tests assure that leakage through the primary containment and connected systems is within allowable limits, and periodic surveillance testing of containment penetrations and isolation valves is performed so that appropriate maintenance and repairs are performed.

The inspectors reviewed the results of past Integrated Leak Rate Tests. Entergy has successfully completed all previous leak rate tests. The inspector reviewed the drawings and records showing the containment penetrations, which are inspected and repaired as necessary, and the local leak rate testing program. The program specifically looks at aging related degradation, records these conditions, and performs maintenance to repair any discovered degradation which could impair the integrity of the containment.

For the Containment Leak Rate Monitoring Program, the inspectors concluded that the program has an acceptable record of complying with 10 CFR Part 50, Appendix J and that Entergy had performed adequate evaluations, as well as industry experience and historical reviews, to determine the appropriate aging effects. Entergy provided adequate guidance to ensure aging effects are appropriately identified and addressed.

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Service Water Integrity Program

The Service Water Integrity Program is an existing program credited with managing the maintenance of protective coatings and piping as well as the prevention of excess biofouling associated with the open cycle service water system. The aging effects of material loss and fouling are managed by surveillance tests and control techniques addressed by NRC Generic Letter 89-13 within the residual heat removal system, the service water system, the emergency diesel generator system and the heating, ventilation and air conditioning system.

The inspectors reviewed the present program and its implementing procedures, interviewed the program owner, performed a walkdown of accessible portions of the service water system, reviewed service water system health reports, and reviewed numerous past instances where the corrective action system had identified and fixed aging degradation in the system.

For the Service Water Integrity Program, the inspectors concluded that Entergy had performed adequate evaluations, as well as industry experience and plant historical reviews, to determine appropriate aging effects. Entergy provided adequate guidance to ensure aging effects would be appropriately identified and addressed.

Structures Monitoring Program

The Structures Monitoring Program is an existing program that has been modified and will be further enhanced for the purpose of aging management of structures and structural components, including structural bolting. The program was developed based on guidance in Regulatory Guide 1.160 Revision 2, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," and NUMARC 93-01 Revision 2, "Industry Guidelines for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," to satisfy the requirements of the Maintenance Rule. The scope of the program also includes condition monitoring of masonry walls and water-control structures. The enhancements to the program will include additional items (such as manholes, duct banks, underground fuel oil storage, man-way seals, gaskets, seismic joint fillers, roof elastomers, crane rails and girders) that are not monitored under the current program but require monitoring during the period of extended operation.

Aging effects are managed by periodic visual inspections by qualified personnel to monitor structures and components for aging effects. Specifically, concrete structures are inspected for loss of material, cracking, and a change in material properties. Steel components are inspected for loss of material due to corrosion. Masonry walls are inspected for cracking, and elastomers will be monitored for a change in material properties. Earthen structures associated with water-control structures will be inspected for loss of material and loss of form (such as subsidence, settlement, leaks, and bowing). Component supports will be inspected for loss of material, reduction or loss of isolation function, and reduction in anchor capacity due to local concrete degradation. Exposed bolting surfaces are monitored for loss of material due to corrosion, loose nuts, missing bolts, or other indications of loss of pre-load.

The inspectors reviewed the program description, program basis documents, the station procedures, and the results of prior inspections; held discussions with cognizant personnel; and performed a walkthrough visual examination of accessible structural items, including reinforced concrete and structural steel members, components and systems to assess the effectiveness of the current program. The inspectors reviewed station procedures, maintenance history, inspection findings and followup of inspection findings, and current inspection schedules. Inspection frequency is every three (3) years for accessible areas, and every ten (10) years for normally inaccessible areas. The program contains provisions for more frequent inspections to ensure that observed conditions that have the potential for impacting an intended function are evaluated or corrected in accordance with the corrective action process.

For the Structures Monitoring Program, the inspectors concluded Entergy had performed adequate evaluations, as well as industry experience and historical reviews, to determine appropriate aging effects. Entergy provided adequate guidance to ensure aging effects are appropriately identified and addressed.

Masonry Wall Program

The Masonry Wall Program is an existing program as a part of the existing Structures Monitoring Program. The Masonry Wall Program is credited with managing the aging effects in masonry walls by a program of inspection of masonry walls for deterioration on a frequency of 5 years to assure that the established evaluation basis for each masonry wall remains valid during the period of extended operation. If a visible crack is found, the inspection frequency is increased to 2 years.

The inspectors reviewed the program description, program basis documents, the station procedures, and the results of prior inspections. The inspectors also held discussions with cognizant personnel and performed a walkthrough visual examination of accessible masonry walls to assess the effectiveness of the current program. The scope of the program includes all masonry walls that perform intended functions in accordance with 10 CFR 54.4, and were covered by I. E. Bulletin 80-11. Additionally, the program includes masonry walls covered by 10 CFR 50.48, radiation shielding, and walls with potential to affect safety-related components. The inspections are implemented through station procedures. A review of maintenance history indicated that any degradation (such as cracks) of masonry block walls has been identified and addressed, providing evidence that the inspection program has been effective in identifying and correcting deficiencies, so that walls continue to provide their intended design functions.

In response to I.E. Bulletin 80-11, "Masonry Wall Design," and Information Notice 87-67, "Lessons Learned from Regional Inspections of Licensee Actions in Response to I.E. Bulletin 80-11," various actions have been taken. Actions have included program enhancements, follow-up inspections to substantiate masonry wall analyses and classifications, and the development of procedures for tracking and recording changes to the walls. The inspectors determined that these actions have addressed all concerns raised by I.E. Bulletin 80-11 and Information Notice 87-67, namely unanalyzed conditions, improper assumptions, improper classification, and lack of procedural controls. A review

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of FitzPatrick operating experience demonstrated that the program has been effective for managing aging effects of masonry walls.

For the Masonry Wall Program, the inspectors concluded Entergy had performed adequate evaluations, as well as industry experience and historical reviews, to determine appropriate aging effects. Entergy provided adequate guidance to ensure aging effects are appropriately identified and addressed.

Fire Protection Program

The Fire Protection Program is an existing program modified for the purpose of aging management and is credited with managing the aging effects in the fire barrier system and the diesel driven fire pump. The aging effects are managed by periodic inspection of fire barrier penetration seals, fire barrier walls, ceilings, and floors; and periodic inspection and testing of fire rated doors. Aging effects are also managed by the periodic inspection and testing of the diesel driven fire pump to ensure that the fuel supply line can perform its intended function.

The inspectors reviewed the existing fire protection program and supporting documents to verify the effectiveness of the program. The inspectors conducted interviews and performed walkdowns of various fire barriers throughout the plant to observe the effectiveness of the existing program. The inspectors also walked down the diesel driven fire pump and accessible portions of the associated fuel supply line. Surveillance procedures were reviewed for completeness and compliance with applicable codes. Program enhancements were reviewed for adequacy and completeness. An acceptable exception to the NUREG-1801 guidance was noted for frequency of the functional test of the carbon dioxide system. NUREG-1801 states that the test should be performed once every six months. Entergy's program specifies performance of the test once every 24 months. This is acceptable, because a visual inspection is performed every six months and there has not been any aging-related events adversely affecting system operation. These conditions have been granted previously by the NRC in license renewal safety evaluation reports as the necessary conditions to accept the frequency in the current licensing basis as acceptable for the extended period of operations.

For the Fire Protection Program, the inspectors concluded that Entergy had performed adequate evaluations, as well as industry experience and historical reviews, to determine appropriate aging effects. Entergy provided adequate guidance to ensure the aging effects are appropriately identified and addressed.

Fire Water System Program

The Fire Water System Program is an existing program and is credited with managing the aging effects in water-based fire protection systems. The aging effects are managed by periodic testing and inspection of systems and components exposed to water including sprinklers, nozzles, fittings, valves, hydrants, hose stations, standpipes, and above ground and underground piping and components.

The inspectors reviewed program bases documents and implementing procedures to assess the effectiveness of the existing program. The inspectors reviewed the implementing procedures and results of periodic flow testing. The inspectors also conducted interviews and performed walkdowns of portions of the fire water system to observe the effectiveness of the existing program. Program enhancements were reviewed for adequacy and completeness.

For the Fire Water System Program, the inspectors concluded that Entergy had performed adequate evaluations, as well as industry experience and historical reviews, to determine appropriate aging effects. Entergy provided adequate guidance to ensure the aging effects are appropriately identified and addressed.

Metal-Enclosed Bus Inspection Program

The Metal-Enclosed Bus Inspection Program is a new program which is credited with managing the aging effects on the non-segregated phase bus, which connects 4 kV switchgear. The purpose of the program is to visually inspect the enclosure assemblies and interior portions of the bus for structural integrity, signs of cracking, corrosion, water intrusion, or foreign debris.

At the time of the inspection, Entergy had not completed any of the actions identified in the program. Therefore, the inspectors were unable to assess the effectiveness of the implementation of this program. The inspectors reviewed drawings and maintenance procedures, and performed walkdowns to assure the proposed program will be capable of managing the aging effects. The inspectors also had discussions with system engineers to determine what will be in the proposed inspection program and the current conditions of the non-segregated bus. The inspectors concluded that when the program is implemented as described, the aging effects of the metal enclosed bus inspection program would be adequately managed.

For the Metal Enclosed Bus Inspection Program, the inspectors concluded that Entergy performed adequate evaluations, which included industry experience and historical reviews, to determine appropriate aging effects. In program-level documents, Entergy provided adequate guidance to ensure aging effects are appropriately identified and addressed.

Non-EQ Insulated Cables and Connections

The Non-EQ Insulated Cables and Connections Program is a new program credited with managing the aging effects in insulated cables and connections exposed to adverse localized environments. The aging effects are managed by periodic visual inspections of a representative sample of in-scope cables and connections for jacket surface anomalies.

At the time of the inspection, Entergy had not completed any of the actions identified in the program. Therefore, the inspectors were unable to assess the effectiveness of the implementation of this program. The inspectors reviewed drawings, performed walkdowns, and had discussions with plant personnel to assess the proposed program and assure it will be capable of managing aging effects. The inspectors reviewed EPRI TR-109619, "Guideline for the Management of Adverse Localized Equipment Environments", the guidance document that will be used to develop the program procedures. The inspectors concluded that when implemented as described in the program description documents, the aging effects in insulated cables and connections would be adequately managed.

For the Non-EQ Insulated Cables and Connections Program, the inspectors concluded that Entergy performed adequate evaluations, which included industry experience and historical reviews, to determine appropriate aging effects. In program-level documents, Entergy provided adequate guidance to ensure aging effects are appropriately identified and addressed.

Buried Piping and Tanks Inspection Program

The Buried Piping and Tanks Inspection Program is a new program credited with managing the effects of corrosion on the pressure-retaining capability of buried steel piping components and tanks, including preventive measures to mitigate corrosion. Additionally, aging effects are managed by performance of an inspection either during an excavation for other maintenance or during a specifically planned excavation, to be performed within the first 10 years of the period of extended operation for buried carbon steel, copper alloy, gray cast iron and stainless steel components.

The inspectors reviewed the program basis document, system drawings, and documented corrective action reviews, and interviewed the responsible plant personnel regarding these documents and inspection criteria to be used. The inspectors reviewed the only buried component failure in the last 5 years in order to sample the effectiveness of the Buried Piping and Tanks Inspection Program. Specifically, the inspector reviewed a December 2006 event that uncovered a section of fire protection water piping. The leak was caused by a crack caused by improper installation of the piping. No degradation in the coating protecting the piping was noted during the evaluation, and prior review by NRC of condition reports and maintenance work orders back to the mid-1990s revealed no further in-ground failures.

For the Buried Piping and Tanks Inspection Program, the inspectors concluded that Entergy had performed adequate evaluations, as well as industry experience and historical reviews, to determine appropriate aging effects. Entergy provided adequate guidance to ensure the aging effects are appropriately identified and addressed.

BWR Stress Corrosion Cracking Program

The BWR Stress Corrosion Cracking Program is an existing program credited with managing the effects of intergranular stress corrosion cracking in reactor coolant pressure boundary components. The aging effects are managed by inspection and flaw evaluation to monitor intergranular stress corrosion and its effects.

The inspectors selected specific components to sample the effectiveness of the Stress Corrosion Cracking Program, such as the feedwater nozzles to safe end welds. The inspector selected these components based on the specific characteristics of the welds. The inspectors concluded that Entergy had an effective Intergranular Stress Corrosion Cracking Program and that the Generic Letter 88-01, NRC Position on Intergranular Stress Corrosion in BWR Austenitic Stainless Steel Piping, requirements have been applied.

For the BWR Stress Corrosion Cracking Program, the inspectors concluded Entergy had performed adequate evaluations, as well as industry experience and plant historical reviews, to determine appropriate aging effects. Entergy provided adequate guidance to ensure aging effects are appropriately identified and addressed.

One-Time Inspection Program

The One-Time Inspection Program is a new aging management program intended to verify the effectiveness of other aging management programs, including Water Chemistry, Closed Cycle Cooling Water Systems, and Fuel Oil Chemistry Programs, by reviewing various aging effects for impact. Where corrosion resistant materials and/or non-corrosive environments exist, the One-Time Inspection Program is intended to verify that an aging management program is not needed during extended operations by confirming that aging effects are not occurring or are occurring in a manner that does not affect the safety function of systems, structures, and components. Non-destructive evaluation will be performed by qualified personnel using procedures and processes consistent with the ASME Boiler and Pressure Vessel Code and 10 CFR 50, Appendix B. The One-Time Inspection Program will be implemented prior to the period of extended operation.

The inspectors reviewed the program description, implementation plan, and inspection sample basis, and discussed the planned activities with the responsible staff.

For the One-Time Inspection Program, the inspectors concluded Entergy had performed adequate evaluations, including reviews of industry experience and plant history, to determine appropriate aging effects. Entergy provided adequate guidance to ensure aging effects are appropriately identified and addressed.

Selective Leaching Program

The Selective Leaching Program is a new program that is credited with managing the aging of components made of cast iron, bronze, brass, and other alloys exposed to raw water, treated water, soil or other environments that may lead to selective leaching. The program will include a one-time visual inspection and hardness measurement of selected components that may be susceptible to selective leaching to determine whether loss of material due to selective leaching is occurring, and whether the process will affect the ability of the components to perform their intended function for the period of extended operation.

The inspectors reviewed the program description, implementation plan, and inspection sample basis, and discussed the planned activities with the responsible staff. The extent of the program was indeterminate, because the basic soil chemistry in the area of the FitzPatrick power plant had not been determined by Entergy. However, FitzPatrick staff had reviewed soil chemistry evaluations at Nine Mile Point, immediately adjacent to FitzPatrick, and determined, based on historical evidence of the same leaching results at FitzPatrick, that there was a very high likelihood that the soil chemistry around FitzPatrick would be similarly benign.

For the Selective Leaching Program, the inspectors concluded Entergy performed adequate evaluations, including reviews of industry experience and plant history, to determine appropriate aging effects. Entergy provided adequate guidance to ensure aging effects are appropriately identified and addressed.

Heat Exchanger Monitoring Program

The Heat Exchanger Monitoring Program is a new program under development and is credited with managing the aging effects of loss of material (corrosion) for heat exchanger tubes, heads, covers, and tube sheets, for those heat exchangers within the scope of license renewal that need periodic monitoring of aging effects and are not covered by other existing periodic monitoring programs. The aging effects will be managed by periodic visual inspections and non-destructive examinations of selected heat exchangers in the program.

The inspectors reviewed the criteria for determining which heat exchangers within the program's scope would be selected for inspection. In addition, the inspectors reviewed heat exchanger health reports, eddy current and preventive maintenance schedule, service water program procedures, and interviewed the heat exchanger system engineer.

Inspections will be performed in accordance with approved station procedures. Inspection methods will include visual examinations on accessible heat exchanger heads, covers, and tube sheets, as well as eddy current non-destructive examinations of tube wall thickness, where practical. The examinations will be performed at a frequency determined by internal and external operating experience. The program will be initiated prior to the period of extended operation. Based on review of the proposed scope, parameters to be monitored, method of monitoring, and acceptance criteria, the inspectors determined that the proposed heat exchanger monitoring program will provide assurance that heat exchangers are routinely evaluated for age-related degradation of loss of material.

For the Heat Exchanger Monitoring Program, the inspectors concluded that Entergy had performed adequate evaluations, including industry experience and historical reviews, to determine appropriate aging effects. Entergy provided adequate guidance to ensure aging effects are appropriately identified and addressed.

Flow Accelerated Corrosion Program

The Flow-Accelerated Corrosion Program is an existing program credited with managing the corrosion aging effects in all carbon steel components in systems containing high-energy fluids carrying two-phase or single-phase high energy fluid $\geq 2\%$ of plant operating time. The aging effects are managed by performing non-destructive examinations (e.g., ultrasonic testing) to detect wall thinning and by predicting wear rates to support the proactive replacement of system piping. In addition, the program provides for the performance of follow-up inspections to confirm predictions and to determine the need for repairs or replacements as necessary.

The inspectors reviewed the piping ultrasonic testing wall thickness results from previous inspections, condition reports generated within the past 5 years related to the Flow Accelerated Corrosion Program, and the October 2005 Engineering Programs Focused Self-Assessment, which addressed the Flow Accelerated Corrosion Program. In addition, the inspectors interviewed the Flow Accelerated Corrosion Program Manager and noted that recent piping replacements, initiated as a result of this program, were implemented preventively due to identified flow-accelerated corrosion. In each case, the replacement piping material was more resistant to corrosion than the original piping material.

For the Flow-Accelerated Corrosion Program, the inspectors concluded that Entergy had performed adequate evaluations, as well as used industry experience and plant historical reviews, to determine the appropriate aging effects. Entergy provided adequate guidance to ensure aging effects are appropriately identified and addressed.

Water Chemistry Control Programs

The Water Chemistry Control Programs consist of the Boiling Water Reactor (BWR), the Auxiliary Systems, and the Closed Cooling Water Programs. The aging effects are managed by monitoring and control of water chemistry to minimize contaminant concentration and mitigate loss of material. The One-Time Inspection Program describes inspections planned to verify the effectiveness of water chemistry control programs to ensure that significant degradation is not occurring and components' intended functions are maintained during the period of extended of operation.

The Water Chemistry Control - BWR Program is an existing program with the objective of managing aging effects caused by corrosion and cracking mechanisms. The BWR program optimizes the primary water chemistry to minimize the potential for loss of material and cracking. This is accomplished by limiting the levels of contaminant in the reactor coolant system (RCS) that could cause loss of material and cracking. In addition, Entergy has instituted hydrogen water chemistry and noble metal chemical addition to limit the potential for intergranular stress corrosion cracking (IGSCC) through the reduction of dissolved oxygen in the treated water.

The Water Chemistry Control - Closed Cooling Water Program is an existing program which includes preventive measures that manage the loss of material, cracking, and fouling for components in closed cooling water systems. The program activities provide for monitoring and controlling closed cooling water chemistry using site procedures and processes based on Electrical Power Research Institute (EPRI) guidance for closed cooling water chemistry.

The Water Chemistry Control - Auxiliary Systems Program is an existing program which manages the loss of material for components exposed to treated water. The program activities include sampling, analysis, and replacement of coolant for control room and relay room chilled water system, security generator jacket cooling water, auxiliary boiler heating water, decay heat removal cooling water, and the stator cooling water system to minimize component exposure to aggressive environments.

The Water Chemistry Control Programs are administered in accordance with the Boiling Water Reactor Vessel and Internals Project (BWRVIP) guidelines BWRVIP-130 and EPRI report 1007820 (TR 107396, Rev. 1). The inspectors reviewed chemistry procedures, condition reports generated within the past 3 years related to chemistry activities, the June 2004 Assessment of Chemistry Activities, and chemistry data for operating cycle 16. In addition, the inspectors interviewed FitzPatrick water chemistry specialists.

For the Water Chemistry Control Programs, the inspectors concluded Entergy had performed adequate evaluations, as well as industry experience and plant historical reviews, to determine appropriate aging effects. Entergy provided adequate guidance to ensure aging effects are appropriately identified and addressed.

Fatigue Monitoring Program

The Fatigue Monitoring Program is an existing program credited with managing the fatigue cracking of metal components of the reactor coolant pressure boundary. The aging effects are managed by tracking transient cycles to ensure reactor coolant system components remain within their design fatigue usage limits.

The inspector reviewed program basis documents, plant procedures, and calculations, and interviewed personnel responsible for development and implementation of the program. The inspector also reviewed recent thermal cycle monitoring reports to confirm that the fatigue monitoring program effectively manages aging effects.

For the Fatigue Monitoring Program, the inspectors concluded Entergy had performed adequate evaluations, as well as industry experience and historical reviews, to determine appropriate aging effects. Entergy provided adequate guidance to ensure aging effects are appropriately identified and addressed.

Bolting Integrity Program

The Bolting Integrity Program is an existing program credited with managing the aging effects of bolting. The aging effects are managed by periodic inspections for leakage, loss of material, cracking, and loss of preload/loss of prestress.

The inspectors reviewed program basis documents, and plant procedures, and interviewed applicable personnel. The inspector also performed walkdowns of various systems to determine the effectiveness of the bolting integrity program.

For the Bolting Integrity Program, the inspectors concluded Entergy had performed adequate evaluations, as well as industry experience and historical reviews, to determine appropriate aging effects. Entergy provided adequate guidance to ensure aging effects are appropriately identified and addressed.

Diesel Fuel Monitoring Program

The Diesel Fuel Monitoring Program is an existing program credited with managing the loss of material due to general, pitting, crevice, microbologically-influenced corrosion and fouling aging effects in components exposed to fuel oil. The aging effects are managed by sampling to ensure that adequate diesel fuel quality is maintained to prevent loss of material in fuel systems.

The inspectors reviewed program basis documents, plant procedures, and recent diesel fuel oil analysis results, and interviewed personnel. The inspectors also performed walkdowns of the diesel fuel oil storage tanks, emergency diesel generators, and diesel driven fire pump. During the walkdown of the diesel-driven fire pump, the inspectors noted a small portion of a diesel fuel line was a different material than the materials which had been identified in the license renewal application. Entergy corrected this omission in License Renewal Application, Amendment 11, dated May 17, 2007, by including the additional material for the fuel oil component.

For the Diesel Fuel Monitoring Program, the inspectors concluded Entergy had performed adequate evaluations, as well as industry experience and historical reviews, to determine appropriate aging effects. As amended, Entergy provided adequate guidance to ensure aging effects are appropriately identified and addressed.

Oil Analysis Program

The Oil Analysis Program is an existing program credited with managing the loss of material, cracking, and fouling aging affects in lubricating oil systems. The aging effects are managed by maintaining oil systems free of contaminants.

The inspector reviewed program basis documents, plant procedures, and recent oil analysis results, and interviewed personnel. The inspector also performed walkdowns of various lubricating oil systems.

For the Oil Analysis Program, the inspectors concluded Entergy had performed adequate evaluations, as well as industry experience and historical reviews, to determine appropriate aging effects. Entergy provided adequate guidance to ensure aging effects will be appropriately identified and addressed.

External Surfaces Monitoring Program

The External Surfaces Monitoring Program is an existing program that will be enhanced for the purpose of aging management. The program entails inspections by system engineers of external surfaces of components subject to aging management. The program is also credited with managing loss of material from internal surfaces for situations in which internal and external material and environment combinations are the same, such that external surface condition is representative of internal surface condition. External Surfaces Monitoring Program guidance documents will be enhanced to include inspections of areas surrounding the subject systems to identify hazards to those systems.

The inspectors interviewed a system engineering manager and two system engineers regarding system walkdowns. In addition, the inspectors reviewed station procedures, results of system walkdowns, and condition reports generated as a result of system walkdowns, and performed a walkdown of the standby gas treatment system with the system engineer.

For the External Surfaces Monitoring Program, the inspectors concluded Entergy had performed adequate evaluations, including reviews of industry experience and plant history, to determine appropriate aging effects. Entergy provided adequate guidance to ensure aging effects are appropriately identified and addressed.

b.3. System Review

High Pressure Coolant Injection System Review

The FitzPatrick license renewal application lists a number of plant systems within the scope of license renewal. From this list the inspectors selected the high pressure coolant injection (HPCI) system for a focused review to determine whether FitzPatrick's aging management programs were adequate to effectively manage aging effects related to this system. The aging effects requiring management for the HPCI system are loss of material, cracking-fatigue, fouling, cracking, and loss of material due to wear. The following aging management programs are credited with managing aging effects of the HPCI system: bolting integrity; buried piping and tanks inspection; external surfaces monitoring; heat exchanger monitoring; oil analysis; one-time inspection; periodic surveillance and preventive maintenance; and water chemistry control – BWR.

The inspectors interviewed the HPCI system engineer, performed walkdowns, and reviewed various documents to verify that programs credited with managing the effects of aging in the HPCI system will be effective. Specifically, the inspectors evaluated a sample of the aging management programs by reviewing HPCI system health reports, condition reports, and data from periodic surveillance tests.

For the various aging management programs associated with the HPCI system, the inspectors concluded that Entergy had performed adequate evaluations, including industry experience and historical reviews, of the HPCI system to determine the appropriate aging effects and that aging management programs properly covered the various aging effects. Entergy provided adequate guidance to ensure aging effects are appropriately identified and addressed.

Reactor Building Closed Loop Cooling Water System Review

The FitzPatrick license renewal application listed a number of plant systems within the scope of license renewal. From this list the inspectors selected the reactor building closed loop cooling water (RBCLC) system for a focused review to determine whether FitzPatrick's aging management programs were adequate to effectively manage aging effects related to this system. The aging effects requiring management for the RBCLC system are cracking, cracking-fatigue, fouling, loss of material, and loss of material due to wear. The following existing aging management programs are credited for managing aging effects of the RBCLC system: bolting integrity, external surfaces monitoring, and closed cooling water chemistry.

The inspectors interviewed the RBCLC system engineer, performed walkdowns, and reviewed various documents to verify that the programs to manage aging effects, associated with the RBCLC system, have been comprehensive and effective. Specifically, the inspectors evaluated a sample of the aging management programs by reviewing condition reports generated over the last 3 years related to the RBCLC system, system health reports, maintenance history, and the oxygen injection modification package.

For the various aging management programs associated with the RBCLC system, the inspectors concluded that Entergy had performed adequate evaluations, including industry experience and historical reviews, of the RBCLC system to determine the appropriate aging effects and that aging management programs properly covered the various aging effects. Entergy provided adequate guidance to ensure aging effects are appropriately identified and addressed.

c. Overall Conclusions

Overall, the inspection results support a conclusion that the proposed activities will reasonably manage the effects of aging in the systems, structures, and components identified in the application and that the intended functions of these systems, structures, and components will be maintained in the period of extended operation. The inspection concluded that the documentation supporting the application was in an auditable and retrievable form.

40A6 Meetings, Including Exit

The inspectors presented the inspection results to Mr. Peter Dietrich, Site Vice President, FitzPatrick, and other members of his staff in an exit meeting that was open for public observation on June 21, 2007. Entergy had no objections to the NRC observations. Slides from the exit meeting are located in ADAMS under ML072140566. No proprietary information was provided to the inspectors during this inspection.

ATTACHMENT

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

P. Dietrich	Site Vice President
K. Mulligan	General Manager, Plant Operations
C. Adner	Manager, operations
J. Bishop	System engineer
B. Bock	Chemistry specialist
J. Costedio	Manager, regulatory compliance
A. Cox	License renewal team, Entergy corporate
M. Dooley	System engineer
W. Drews	Superintendent, reactor engineering
M. Durr	Manager, system engineering
B. Finn	Director, nuclear safety assurance
D. Fronabarger	License renewal team, Entergy corporate
D. Gerber	Erosion/corrosion specialist
S. Glover	Engineer
P. Guardado	System engineer
B. Horning	System engineering supervisor
T. Ivy	License renewal team, Entergy corporate
D. Johnson	Manager, training
J. Kronenbitter	Reactor analyst
D. Lach	License renewal project manager
L. Leiter	Site engineering lead for license renewal
J. Lona	Engineer
T. Moskalyk	Senior staff engineer, civil design
J. Pechacek	Manager, programs and components engineering
R. Penny	Manager of programs and components, White Plains
R. Plasse	Lead engineer, licensing
W. Rheume	Director, nuclear safety assurance
A. Smith	ISI engineer
D. Stokes	Fire protection design engineer
M. Stroud	License renewal team, Entergy corporate
A. Taylor	License renewal team, Entergy corporate
J. Tolbert	System engineer

LIST OF DOCUMENTS REVIEWEDLRA DrawingsComplete Set of License Renewal Drawings:

LRA-FB-8A-0, Reactor Bldg Vent & Cooling System 66, Rev 0
LRA-FB-10H-0, Reactor Bldg Service Water System 66, Rev 0
LRA-FB-16A-0, Turbine Area Heating, Ventilation & Cooling System 67, Rev 0
LRA-FB-16B-0, Piping and Cable Tunnel Heating, Vent & Cooling Systems 67 & 69, Rev 0
LRA-FB-16C-0, Emergency Generator Bldg Ventilation & Heating Cooling System 92, Rev 0
LRA-FB-35E-0, Control Room Area Service and Chilled Water System 70, Rev 0
LRA-FB-45A-0, Control and Relay Rooms Heating and Ventilation System 70, Rev 0
LRA-FB-45C-0, Admin and Control Room Heating, Ventilation & Air Cond System 72, Rev 0
LRA-FB-45E-0, Screenhouse Ventilation and Cooling System 73, Rev 0
LRA-FB-48A-0, Fire Protection Piping System 76, Rev 0
LRA-FB-49A-0, Fire Protection Piping System 76, Rev 0
LRA-FB-49B-0, Fire Protection Piping System 76, Rev 0
LRA-FB-56A-0, CO2 and Foam Fire Extinguishing System, Rev 0
LRA-FB-60A-0, Ventilation RCIC Area & Safety Related Pump Rooms, Rev 0
LRA-FM-15B-0, Reactor Bldg Cooling Water System 15, Rev 0
LRA-FM-16A-0, Off Gas System 01-107, Rev 0
LRA-FM-17A-0, Radwaste System 20, Rev 0
LRA-FM-18A-0, Drywell Inerting CAD and Purge System 27, Rev 0
LRA-FM-18B-0, Drywell Inerting CAD Purge And Containment Diff Press.System 27, Rev 0
LRA-FM-18C-0, NUREG 0578 Implementation and Post Accident Sampling System 27, Rev 0
LRA-FM-18D-0, Containment Hydrogen and Oxygen Sampling System 27, Rev 0
LRA-FM-19A-0, Fuel Pool Cooling and Cleanup System 19, Rev 0
LRA-FM-20A-0, Residual Heat Removal System 10, Rev 0
LRA-FM-20B-0, Residual Heat Removal System 10, Rev 0
LRA-FM-21A-0, Standby Liquid Control System 11, Rev 0
LRA-FM-22A-0, Reactor Core Isolation Cooling System 13, Rev 0
LRA-FM-22B-0, RCIC Turbine Lube Oil System 13, Rev 0
LRA-FM-23A-0, Core Spray System 14, Rev 0
LRA-FM-24A-0, Reactor Water Cleanup System 12, Rev 0
LRA-FM-25A-0, High Pressure Coolant Injection System 23, Rev 0
LRA-FM-25B-0, High Pressure Coolant Injection Lube Oil System 23, Rev 0
LRA-FM-26A-0, Reactor Water Recirculation System 02-2, Rev 0
LRA-FM-27A-0, Control Rod Drive System 3, Rev 0
LRA-FM-27B-0, Control Rod Drive System 3, Rev 0
LRA-FM-29A-0, Main Steam System 29, Rev 0
LRA-FM-33D-0, Condensate System 33, Rev 0
LRA-FM-34A-0, Feedwater System 34, Rev 0
LRA-FM-38A-0, Vacuum Priming and Air Removal System 38, Rev 0
LRA-FM-39A-0, Breathing, Instrument, and Service Air System 39, Rev 0
LRA-FM-39B-0, Service Air System 39, Rev 0
LRA-FM-39C-0, Instrument Air Reactor Bldg & Drywell System 39, Rev 0

LRA-FM-44A-0, Nuclear Equipment Drains System 44, Rev 0
 LRA-FM-46A-0, Service Water System 46, Rev 0
 LRA-FM-46B-0, Emergency Service Water System 46 & 15, Rev 0
 LRA-FM-46C-0, Service Water System 46, Rev 0
 LRA-FM-47A-0, Nuclear Boiler Vessel Instruments System 02-3, Rev 0
 LRA-FM-48A-0, Standby Gas Treatment System 01-125, Rev 0
 LRA-FM-49A-0, Drywell / Torus Leak-Rate Analyzer System 16-1, Rev 0
 LRA-FM-93A-0, Fuel Oil Lines - Emergency Diesel Generators System 93, Rev 0
 LRA-FM-93C-0, Engine Cooling and Lubrication Oil - Diesel Generators System 93, Rev 0

Other Drawings

FB-4A, Reactor Bldg. Floor Drainage, El. 227'6" and 256'6, Rev 17
 FB-48A, Fire Protection Water P&ID, Rev 33
 FB-49A, Flow Diagram Fire Protection Water Piping, Sheet 1, Rev 40
 FB-49B, Flow Diagram Fire Protection Water Piping, Sheet 1, Rev 9
 FB-56A, Flow Diagram CO2 and Foam Fire Extinguishing System, Sheet 1, Rev 12
 FE-1B, Station Service Transformers, Sheet 2, Rev 12
 FE-1D, 115kV Switchyard, Sheet 4, Rev 10
 FE-34Q, Cable Tray Arrangement, Rev 11
 FE-46AC, Cable Arrangement, Rev 2
 FM-7A, Rev 31, Machine Location Screenwell & Water Treating Plant & Section
 FM-7C, Rev 10, Machine Location Screenwell & Water Treating Plant & Section Sheet 3
 FM-17A, Rev 37, Flow Diagram Radwaste System 20
 FM-19A, Rev 42, Sheet 1 of 1; Flow Diagram Fuel Pool Cooling and Cleanup, System 19
 FM-20B, Rev 63; Flow Diagram Residual Heat Removal System 10
 FM-25A, High Pressure Coolant Injection System P&ID, Rev 68
 FM-25B, HPCI Lube Oil System P&ID, Rev 31
 FM-36A, Rev 36, Sheet 1 of 1; Flow Diagram Circulating Water System No. 36
 FM-46A, Rev 82, Sheet 1 of 1; Flow Diagram Service Water System No. 46
 FM-46B, Rev 49, Sheet 1 of 1; Flow Diagram Service Water System No. 46 & 15
 FM-46C, Rev 17, Sheet 1 of 1; Flow Diagram Service Water System No. 46
 FM-93A, Fuel Oil Lines Emergency Diesel Generators P&ID, Rev 22
 FP-22J, Rev 14; Nuclear Equipment Drains Reactor Bldg. El. 227'6", Sheet 9
 FP-22K, Rev 14; Nuclear Equipment Drains Reactor Bldg. Drywell, Sheet 10
 FP-22L, Rev 17; Nuclear Equipment Drains Reactor Bldg. Drywell, Sheet 11
 FP-22M, Rev 18; Nuclear Equipment Drains Reactor Bldg. Drywell, Sheet 12
 FV-1A, Rev 19; Drywell & Suppression Chamber Penetrations, Locations & Details

11825-5.14-1A; enlarged detail "E" (F-11)
 11825-FC-20A, Rev 5; Reactor Bldg. Fdn Mat & Details El. 227'6" Outline & Reinf. Sheet 1
 11825-FC-20B, Rev 6; Reactor Bldg. Fdn Mat & Details El. 227'6" Outline & Reinf. Sheet 2
 11825-FC-20C, Rev 5; Reactor Bldg. Fdn Mat & Details El. 227'6" Outline & Reinf. Sheet 3
 11825-FC-42A, Rev 4; Intake & Discharge Tunnels Plan & Profile
 11825-FM-1G, Rev 11; Mach. Location - Reactor Bldg. - Sheet 7, Section 1-1
 11825-FM-1H, Rev 12; Mach. Location - Reactor Bldg. - Sheet 8, Section 2-2
 11825-FP-22H, Rev 7; Nuclear Equipment Drains Reactor Bldg. Floor El. 344'6" & 326'9", Sht 8

11825-FV-1C, Rev 6; Drywell & Suppression Chamber Penetrations Loc. and Details, Sheet 3
11825-FV-12A, Rev 1; Reactor Bldg. Drain Sumo Liners, Sheet 1
11825-1000-43A, Fire Pump Diesel Engine Drive Fuel Flow Diagram, 03/18/71
47-6707D, Rev B; 22' Diameter Refueling Bellows

4.95-13, Heat Exchanger Tube Plugging Map 15E-1A RBCLC, Rev 2
4.95-14, Heat Exchanger Tube Plugging Map 15E-1B RBCLC, Rev 1
4.95-15, Heat Exchanger Tube Plugging Map 15E-1C RBCLC, Rev 1
4.95-44, Heat Exchanger Tube Plugging Map 37E-3A TBCLC, Rev 2
4.95-45, Heat Exchanger Tube Plugging Map 37E-3B TBCLC, Rev 3
4.95-46, Heat Exchanger Tube Plugging Map 37E-3C TBCLC, Rev 4

MSK-116C1, Rev 4, Isometric of SLC piping
MSK-309B1, Isometric of containment atmospheric purge piping
11825-6.25-48-INST-FF-170, 175, 187 - 189, Piping isometrics

License Renewal Program and Procedures

LRPD-01, System and Structure Scoping Report, Rev 1
LRPD-02, Aging Management Program Evaluation Results, Rev 2
LRPD-03, LR Time-Limited Aging Analysis and Exemption Evaluations, Rev 0
LRPD-05, Operating Experience Review Report, Rev 0
LRPD-06, LR Time-Limited Aging Analysis - Mechanical Fatigue, Rev 0
LRPG-03, System and Structure Scoping Methodology, Rev 2
LRPG-05, Electrical System Scoping, Screening, and Aging Management Reviews, Rev 2

License Renewal Program Basis Documents (all within JAF-RPT-05-LRD02, Aging Management Program Evaluation Report, Rev 4)

3.1, Buried Piping and Tanks Inspection Program
3.2, Heat Exchanger Monitoring Program
3.3, Metal-Enclosed Bus Inspection Program
3.5, Non-EQ Insulated Cables and Connections Program
3.6, One-Time Inspection Program
3.7, Selective Leaching Program
4.4, BWR Stress Corrosion Cracking Program
4.7, Containment Leak Rate Program
4.8, Diesel Fuel Monitoring Program
4.10, External Surfaces Monitoring Program
4.11, Fatigue Monitoring Program
4.12.1, Fire Protection Program
4.12.2, Fire Water System Program
4.13, Flow Accelerated Corrosion Program
4.14.2, Containment Inservice Inspection
4.16, Oil Analysis Program
4.19, Reactor Vessel Surveillance Program
4.20, Service Water Integrity Program

- 4.21.1, Structures Monitoring Program
- 4.21.2, Masonry Wall Program
- 4.22.1, Water Chemistry Control - Auxiliary Systems Program
- 4.22.2, Water Chemistry Control - BWR Program
- 4.22.3, Water Chemistry Control - Closed Cooling Water Program
- 4.23, Bolting Integrity Program

Aging Management Review Technical Basis Documents

(all preceded by JAF-RPT-05-):

- AMC04, Bulk Commodities, Rev 1
- AMM01, Standby Liquid Control System, Rev 2
- AMM05, High Pressure Coolant Injection System, Rev 2
- AMM07, Standby Gas Treatment System, Rev 3
- AMM13, Fuel Oil System, Rev 1
- AMM21, RBCLC System, Rev 2
- AMM23, Security Generator, Rev 1
- AMM30, Nonsafety-Related Systems & Components Affecting Safety-Related Systems, Rev 4

- JAF-RPT-04-00309, Flow Accelerated Corrosion Program Basis Document, Rev 0
- JAF-RPT-05-LRD04, TLAA – Metal Fatigue, Rev 1
- JAF-RPT-BYM-02306, Rev 2, Maintenance Rule Basis Document for System 052, Structures
- JAF-RPT-BYM-03399, Rev 1: Monitoring Report: Structures (System 052) for 10CFR50.65.

Plant Procedures

- AM-02.36, Water and Sediment Analysis of Fuel Oil, Rev 2
- AOP-49, Station Blackout , Rev 13
- AP-15.12, Receiving Inspection for Dedication of No. 2 Diesel Fuel Oil, Rev 1
- AP-19.04, ISI System Pressure Test Program, Rev 4
- AP-19.12, Service Water Inspection Program, Rev 5
- AP-19.14, Eddy Current Testing of Heat Exchanger Tubes, Rev 9
- ARP 09-3-1-9, Rev 9; Alarm Response Fuel Pool Cooling & Clean Up Trouble (F-61 and F-62)
- CTID-04-006, Chemistry Strategic Plan, Rev 3
- DESO-12, Maintenance Rule Structural Assessment and Monitoring Program, Rev 3
- EN-CY-106, Hydrogen Water Chemistry, Rev 0
- EN-DC-178, System Walkdowns, Rev 1
- EN-DC-310, Predictive Maintenance Program, Rev 0
- EN-EP-S-001, IWE General Visual Containment Inspection, Rev 0;
- EN-MA-101, Conduct of Maintenance, Rev 4
- EN-MS-S-011-Multi, Conduct of System Engineering, Rev 3
- ENN-CS-S-008, Pipe Wall Thinning Structural Evaluation Rev 1
- ENN-DC-150: Condition Monitoring of Maintenance Rule Structures, Rev 1
- ENN-DC-315, Flow Accelerated Corrosion Program, Rev 0
- ENN-DC-324, Preventive Maintenance Process, Rev 0
- ENN-EP-S-005, Flow Accelerated Corrosion Component Scanning & Gridding Standard, Rev 0
- ENN-NDE-9.05, Ultrasonic Thickness Examination, Rev 0

ENN-NDE-10.03, Rev 2; VT-3 Examination
ENN-NDE-10.03, Rev 1; VT-3 Examination
ENN-NDE-10.03, Rev 3; VT-3 Examination
ENN-NDE-10.01, Rev 3; VT-3 Examination
ENN-NDE-10.01, Rev 2; VT-3 Examination
JAF-RPT-MULTI-01267, Generic Letter 89-13 Program Plan, Rev 4
JAF-RPT-MULTI-003327, FAC Susceptibility Review & Small-Bore Monitoring Program, Rev 4
JAF-RPT-MULTI-01120, IGSCC Inspection Program, Rev 6
JAF-RPT-MULTI-01267, Generic Letter 89-13 Program Plan, Rev 4
JLP-ESP-5065CHG: Transition to EN Procedures
MDSO-02, Fastener Preload Requirements, Rev 13
MP-076.01, Diesel Fire Pump Engine 76P-1 (ENG)*, Rev 17
MP-076.15, Cardox Condensing Units 76C-5 and 76C-6 Maintenance, Rev 6
MP-076.16, Fire Door Maintenance, Rev 12
MP-076.20, Fire Damper Maintenance, Rev 1
MP-093.08, EDG Lube Oil Sampling, Rev 6
MP-101.41, Sampling of Lubricants for the Plant Lube Oil Analysis Program, Rev 16
MST-076.09, Fire Hose Inspection and Hydrostatic Test, Rev 10
MST-076.11, Fire Barrier Penetration Functional Integrity Surveillance Test, Rev 18
OP-40, Reactor Building Closed Loop Cooling System, Rev 46
OP-41, Turbine Building Closed Loop Cooling System, Rev 30
PC-01.01, Hydrogen Water Chemistry and Zinc Injection Program, Rev 6
POT-015D, Functional Test of the RBCLC Oxygen Injection Skid, Rev 0
RAP-7.4.10, Component Cyclic or Transient Limit Program, Rev 2
RT-01.15, Turbine Building Closed Loop Cooling Sampling and Analysis, Rev 9
SP-01.07, Diesel Fuel Oil Sampling and Analysis, Rev 7
SP-01.23, Diesel Fire Pump, EDG Coolant Corrosion Inhibitor Sampling and Analysis, Rev 6
SP-01.25, Reactor Building Closed Loop Cooling Sampling and Analysis, Rev 11
STP-93R, Drain, Clean, and Refill of Underground Fuel Oil Storage Tanks*, Rev 1
ST-Q8, Rev 35, 1/27/06: Testing Of The Emergency Service Water System (ISI)
ST-76Z, Fire Damper Operability Test", Rev 17
ST-76A, Fire Protection System Monthly Checks, Rev 19
ST-76Y, Fire Door Inspection and Operability Test, Rev 17
ST-40D, Daily Surveillance and Channel Check, Rev 103
ST-76D, High Pressure Water and Cardox FP System Valve Position Chk and Op Test, Rev 27
ST-76J23, West Diesel Fire Pump 76P-1 Performance Test, Rev 16
ST-76U, System Flow Test, Rev 11
ST-76X, Nozzle Air Flow Test for Water Curtain Spray Boundaries Number 1 through 8, Rev 6
ST-76E, Quarterly Fire Hose Station Inspections, Rev 16
ST-76F, Fire Hose Station Gasket Inspection and Hose Rerack Test, Rev 5
ST-76J4, West Cable Tunnel Smoke Detector and Sprinkler Test, Rev 17
ST-76K, Fire Header Integrity and Nozzle Inspection, Rev 7
ST-76Q, HPCI Foam System Header Integrity and Nozzle Inspection, Rev 0

Miscellaneous Documents

DBD-46, Design Basis Document for Service Water Systems, Revision 14
 DBD-71, Design Basis Document for the Electrical Distribution Systems
 DBD-76, Design Basis Document for Fire Protection
 SEP-AJP-007, Revision 0; James A. Fitzpatrick Nuclear Power Plant Primary Containment Leakage Rate Testing (Appendix J) Program Section
 JAF-RPT-NBS-01848, Revision 10; Reactor Vessel Integrity And In-Vessel Visual Inspection Program
 W-NYPA-78Q-301, Updated Cycle Counts and 60 Year Projections, Rev 1
 JENG-06-0004, Thermal Cycle Monitoring Report, July 2, 2005 - December 31, 2005
 JENG-06-0104, Thermal Cycle Monitoring Report, January 1, 2006 - June 30, 2006
 JENG-07-0005, Thermal Cycle Monitoring Report, July 1, 2006 - December 31, 2006
 High Pressure Coolant Injection System Oil Analysis Data Sheet Report, January 25, 2007
 JLPMT3QTR-2002, Maintenance Continuing Training, Bolting & Fastening for Joints, Rev 0
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*As a result of this inspection

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LIST OF ACRONYMS

ASME	American Society Mechanical Engineers
BWR	Boiling Water Reactor
BWRVIP	Boiling Water Reactor Vessel and Internals Project
EPRI	Electrical Power Research Institute
FAC	Flow Accelerated Corrosion
GALL	Generic Aging Lessons Learned Report
HPCI	High Pressure Coolant Injection
IGSCC	Intergranular Stress Corrosion Cracking
JAF	James A. Fitzpatrick Nuclear Power Plant
RBCLC	Reactor Building Closed Loop Cooling Water System
RCS	Reactor Coolant System
RFO	Refueling Outage
SBGT	Standby Gas Treatment
TBCLC	Turbine Building Closed Loop Cooling Water System