UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
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ATLANTA, GEORGIA 30303-8931

June 22, 2004

Southern Nuclear Operating Company
Mr. L. M. Stinson
Vice President - Farley Project
Post Office Box 1295
Birmingham, Alabama 35201

SUBJECT: J. M. FARLEY NUCLEAR PLANT - INSPECTION REPORT 50-348/2004-007, 50-364/2004-007

Dear Mr. Stinson:

On May 14, 2004, the NRC completed an inspection regarding the application for license renewal for your Farley facility. The enclosed report documents the inspection findings, which were discussed on May 14, 2004, with members of your staff in an exit meeting open for public observation at your Birmingham offices.

The purpose of this inspection was an examination of activities that support the application for a renewed license for the Farley facility. The inspection consisted of a selected examination of procedures and representative records, and interviews with personnel regarding the process of scoping and screening plant equipment to select equipment subject to an aging management review. For a sample of plant systems, inspectors performed visual examination of accessible portions of the systems to observe any effects of equipment aging.

The inspection concluded that the scoping and screening portion of the license renewal activities were conducted as described in the License Renewal Application and that documentation supporting the application is in an auditable and retrievable form. With the exception of the items identified in this report, your scoping and screening process was successful in identifying those systems, structures, and components required to be considered for aging management.

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

Should you have any questions concerning this meeting, please contact Caudle A. Julian at (404) 562-4603.

Sincerely,

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Charles A. Casto, Director
Division of Reactor Safety

Docket Nos:. 50-348, 50-364
License Nos:. NPF-2, NPF-8

Enclosure: NRC Inspection Report Nos.50-348/2004-007, 50-364/2004-007
w/Attachment: Supplemental Information

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	50-348, 50-364
License Nos.:	NPF-2, NPF-8
Report Nos.:	05000348/2004007 and 05000364/2004007
Licensee:	Southern Nuclear Operating Company, Inc.
Facility:	Farley Nuclear Plant
Location:	7388 N. State Highway 95 Columbia, AL 36319
Dates:	May 10-14, 2004
Inspectors:	Caudle Julian, Team Leader R. Moore, Senior Reactor Inspector M. Scott, Senior Reactor Inspector K. VanDoorn, Senior Reactor Inspector
Approved by:	Charles A. Casto, Director Division of Reactor Safety

INSPECTION SUMMARY

IR 05000348-04-07,05000364-04-07; 5/10-14/2004; Southern Nuclear Operating Company; J. M. Farley Nuclear Plant; License Renewal Inspection Program, Scoping and Screening.

This inspection of License Renewal (LR) activities was performed by four regional office engineering inspectors. The inspection program followed was NRC Manual Chapter 2516 and NRC Inspection Procedure 71002. This inspection did not identify any "findings" as defined in NRC Manual Chapter 0612.

The inspectors concluded that the applicant had successfully performed scoping and screening and identified the structures and components subject to aging management in accordance with the methodology described in the LRA and the rule with the following exception.

The inspectors noted that on the safety injection boundary drawings, the RWSTs' atmospheric vents were not shown to be in scope. The boundary drawings were inconsistent on various drawings in depicting the atmospheric vents for the refueling water storage, condensate storage, and the reactor makeup water storage tanks as in or out of LR scope. The applicant stated that this was an omission and would be corrected and tracked by the applicant as their license renewal open item number 2004-011.

In walking down plant systems and examining plant equipment the inspectors found no significant adverse conditions and it appears plant equipment was being maintained adequately.

Attachment 1 to this report contains a partial list of persons contacted and a list of documents reviewed. The systems and structures selected for review during this inspection are listed in Attachment 2 to this report. Attachment 3 is a list of acronyms used in this report.

Report Details

I. Inspection Scope

This inspection was conducted by NRC Region II inspectors to interview applicant personnel and to examine a sample of documentation which supports the license renewal application (LRA). The inspectors reviewed the results of the applicant's scoping of plant systems and screening of components within those systems to identify the list of components that need evaluation for aging management. The team selected a sample of systems, structures, and components (SSCs) from the LRA scoping results to verify the adequacy of the applicant's scoping and screening documentation and implementation activities. For the selected in scope systems/structures, the associated license renewal boundary drawings, and the active/passive and short/long-lived determinations were reviewed to confirm the accuracy of the applicant's results. In addition to the in scope systems and structures, some systems that the applicant had determined not to be in scope for license renewal were selected for inspection. The inspectors reviewed supporting documentation and interviewed applicant personnel to confirm the accuracy of the LRA conclusions. The SSCs selected for review during this inspection are listed in Attachment 2 to this report.

A. Evaluation of Scoping and Screening of Mechanical Systems

a. Scope

The applicant performed scoping at the system level by first identifying an extensive list of potential functions (required actions of a system or structure) for mechanical systems via review of plant information such as the Updated Final Safety Analysis Report (UFSAR), Technical Specifications, plant drawings, Functional System Descriptions, Maintenance Rule information, Operations lesson plans, the PRA model, and docketed correspondence, etc. These potential functions were subsequently consolidated into broader plant functions as final functions. These were then evaluated against the 10 CFR 54 criteria to determine if these were intended functions for LR. For each system, the applicant developed a system evaluation boundary to identify the set of components necessary to perform the intended function. The scoping results were entered into an electronic database and the boundaries were highlighted on LR boundary drawings. After system scoping, screening was accomplished by evaluating the component types against the active/passive and long-lived/short-lived 10 CFR 54 criteria and determining materials and environments for each.

The inspectors also examined the applicant's scoping and screening implementation for the potential adverse affects of non-safety-related (NSR) equipment on safety-related equipment (SR). The results of that inspection are addressed in section I.B below.

The following mechanical systems were reviewed:

1. Reactor Coolant System (RCS) (including Reactor Vessel, Reactor Vessel Internals, Incore Instrumentation, Pressurizer, and Steam Generators)

This system and associated components are designed to contain and support the nuclear fuel, contain the reactor coolant, circulate reactor coolant, and transfer heat produced in the reactor to the steam and power conversion systems for the production of electricity. The applicant essentially considered all of these system passive components to be in scope of LR. The inspectors reviewed LR boundary drawings, the UFSAR, and system design information to determine if scoping and screening was adequately performed.

2. Containment Isolation System

The Containment Isolation System functions to allow process fluids to pass through the containment boundary during normal and accident conditions and to provide for containment isolation when necessary. This system is not a completely independent system but includes portions of various systems which penetrate the containment boundary. For LR purposes the applicant assigned this system designator to portions of systems not otherwise captured for LR, which include several penetrations (54, 55, and 70), narrow and extended range containment pressure monitoring, and the Containment Leak Rate Test System. The applicant considered the pressure boundary components to be in scope. The inspectors reviewed LR boundary drawings, the UFSAR, and system design information to determine if scoping and screening was adequately performed.

3. Open Cycle Cooling Water System

For LR purposes the applicant included the Service Water (SW) System and portions of the River Water System needed for the SW functions under this system designator. The SW provides cooling water to various plant equipment during normal and accident conditions including the Component Cooling Water (CCW) System, room coolers, containment coolers, emergency diesel generators, and certain turbine building loads. The applicant included those portions of the system which cool equipment needed to perform LR functions in scope. The inspectors reviewed LR boundary drawings, the UFSAR, and system design information to determine if scoping and screening was adequately performed.

4. Component Cooling Water System

The CCW System functions to transfer heat to the SW System from various SR components in systems which contain radioactive fluid. The applicant included all of the portions of this system required to cool components which perform a LR function in scope. The inspectors reviewed LR boundary drawings, the UFSAR, and system design information to determine if scoping and screening was adequately performed.

5. Sampling System

The Sampling System provides sampling capability for RCS and containment atmosphere and maintains pressure boundary and containment integrity. The applicant included the portions of the system which support pressure boundary of the system being sampled, provide for containment isolation, and provide cold shutdown sampling for Appendix R safe shutdown in scope. The inspectors reviewed LR boundary drawings, the UFSAR, and system design information to determine if scoping and screening was adequately performed.

6. Steam Generator Blowdown System (SGBD)

The SGBD funtions to provide continuous blowdown from the lower portion of the SGs to remove solids and chemical contaminates during normal operations and is not needed during accident conditions. The applicant included portions of the system which penetrate containment and provide for SG pressure boundary in scope. The inspectors reviewed LR boundary drawings, the UFSAR, and system design information to determine if scoping and screening was adequately performed.

7. Emergency Core Cooling Systems (ECCS): High Head Safety Injection (HHSI), Low Head

Safety Injection/Residual Heat Remove System (LHSI/RHR), and Refueling Water Storage Tank (RWST)

The ECCS is available for mitigation of loss of reactor coolant system integrity accidents to provide core cooling and reactivity control. The RWST is the large, stored volume of borated water available for safety injection into the RCS during a postulated loss-of-coolant accident. The HHSI and LHSI Systems that injects borated water include the piping and valves which provide the discharge flow path from RWST after a postulated accident. The HHSI will pump water into the RCS at a relatively low volume and high pressures. The LHSI operates at lower pressures and a higher rate of injection. Many of the same components in the LHSI system are used in RHR mode of operation where the system functions to remove residual heat from the RCS during normal plant shutdown conditions. In an accident, as water is depleted from the RWST, the HHSI and LPSI systems can utilize containment sump water in a recirculation mode moving accident leakage water from the containment sump through heat exchangers back into the RCS. The inspectors reviewed LR boundary drawings, normal plant system drawings, the UFSAR, Functional System Descriptions (FSD), and LR computer database records developed and maintained by the applicant.

8. Containment Spray System (CS)

Like the above ECCS, the CS is available for accident mitigation. The CS pumps either RWST water or recirculated containment sump water through piping that ends in rings of nozzles inside the containment near its dome/ceiling. The flow from this system is to suppress containment pressure during a large RCS or main steam line break accident. The containment sump screening and trisodium phosphate baskets (which dissolve in the spray for pH control) are included in the LRA as civil structures. The inspectors reviewed LR boundary drawings, normal plant system drawings, UFSAR, FSD, and computer database records developed and maintained by the applicant.

9. New Fuel and Spent Fuel Storage

The new fuel and spent fuel storage are considered by the applicant to be in scope structures within the auxiliary building. The new fuel storage area is a mainly concrete structure that houses new fuel for receipt inspection prior to transfer to the spent fuel pool (SFP) and subsequently to be installed in the core. Adjacent to the new fuel storage, is the spent fuel storage pool with its installed racks that hold the spent and new fuel. Fuel is subsequently passed into the containment via the in scope transfer tube. The in scope pool liner has external leakage collection points that can be monitored for possible liner leakage and the pool liner is surrounded by supporting concrete. The inspectors reviewed the available LR information and discussed with the applicant the details of the cranes used for new fuel movement and the attachment of the cooling and chemistry maintenance equipment to the SFP.

10. Spent Fuel Cooling and Cleanup System (SFCS)

The SFCS removes spent fuel decay heat from the SFP and can be used to maintain the chemistry in the pool, transfer canal, and the RWST. This two train system has purification and skimmer cleanup features. Heat is removed via heat exchangers that interact with the in scope CCW system. The inspectors reviewed LR drawings, the UFSAR, equipment list (total plant numbering system identifiers), the listing of maintenance rule functions, FSD, and available LR material on this system.

11. Overhead Heavy and Refueling Load Handling System.

Overhead Heavy and Refueling Load Handling equipment moves nuclear fuel assemblies or reactor related components for the refueling outages. The major handling equipment includes the polar, reactor cavity manipulator, and spent fuel bridge cranes. This system includes special tools and adapters used for the special lifts. The passive components in LR scope for the system includes: baseplates and anchors for attachment to structures; retaining clips; cranes including bridge and trolley; structural girders, and rails. The inspectors reviewed the available LR material, UFSAR, and discussed the selected major components with the applicant.

12. Compressed Air System

The Compressed Air system is comprised of the Instrument and Service Air Systems (IA and SA) and a portion of the river water system. The IA provides motive air for pneumatic instruments and valves, and supply for the SA system. Safety-related air operated components that are required to operate for design basis events, including Appendix R safe shutdown events, have a normal supply of IA and then have back-up air reservoirs or nitrogen bottles to complete their mission times upon loss of normal air supply. SA, which is largely not in scope, routes air to equipment and tool plug-in locations throughout the plant. The portion of SA in scope is at the containment isolation boundary. The in scope portions of the river water system are the nitrogen bottles that back up IA at the service water pond level instruments. The pond is the ultimate heat sink for emergency plant cooling. The inspectors reviewed LR drawings, system drawings, UFSAR, equipment list (total plant numbering system identifiers), and the listing of maintenance rule functions.

13. Chemical and Volume Control System (CVCS)

The CVCS interfaces with numerous systems and provides the following functions:

1. A portion of the system provides the ECCS injection flow path for postulated accidents.
2. Maintains the inventory in the RCS via programmed RCS pressurizer level controls.
3. Bleeds and feeds the RCS to maintain proper chemistry and specific activity levels.
4. Provides seal water injection to the reactor coolant pumps for cooling of the pump's seal package.
5. Provides shutdown margin capability by having high concentrations of borated water available for use.
6. Interfaces with the boron thermal regeneration system to assist in maintaining desired core power levels.

The inspectors reviewed LR drawings, system drawings, UFSAR, FSD, equipment list (total plant numbering system identifiers), computer database records developed and maintained by the applicant, and the listing of maintenance rule functions.

14. High Energy Line Break Detection (HELBD) System

The HELBD system monitors certain areas' and rooms' pressures or liquid levels to detect high energy line breaks. The sensors initiate alarms and in most cases provide isolation of certain

systems that may have ruptured. Specific pressure sensors monitor boron thermal recovery, liquid waste disposal, and steam generator blowdown systems providing alarm and system isolation signals. Penetration room filtration and auxiliary steam system pressure sensors provide alarm only to the control room. Level sensors in the main steam valve room detect potential flooding by the condensate and feedwater system and their actuation isolates feedwater and trips the main feedwater pumps. The inspectors reviewed LR drawings, UFSAR, equipment list (total plant numbering system identifiers), and computer database records developed and maintained by the applicant.

15. Reactor Water Makeup System (RWMS)

The RWMS provides a non-borated source of water to the RCS via the CVCS and provides flush and makeup water to other systems. The LR function of the system is to be an assured makeup source to the component cooling water surge tank. The inspectors reviewed LR boundary drawings, normal plant system drawings, FSD, UFSAR, and computer database records developed and maintained by the applicant.

16. Main Steam (MS) System

The MS system pipes steam from the steam generators (SG) to the main turbine generator and other secondary power production components. Importantly, the MS provides motive force for the safety-related turbine driven auxiliary feedwater (AFW) pump. The major in scope components are: SG level and pressure instrumentation; steam supply piping for the AFW pump; piping to the MS isolation valves; and, the main turbine first stage impulse pressure lines. The instruments and sensing lines provide input to reactor protection and other protective circuits. The MS isolation valves insure a steam source for the AFW pump. The inspectors reviewed LR drawings, UFSAR, equipment list (total plant numbering system identifiers), and the listing of maintenance rule functions.

17. Main Feedwater (MFW) System

The condensate and feedwater systems returns condensed steam that has passed through the main turbine to preheated state and then to the SGs for further re-energization. The feedwater piping from the MFW isolation valves to the SG are in scope. The AFW and the chemical addition systems attach to the MFW piping and their isolation valves are the LR scoping boundaries for those respective systems. The inspectors reviewed available LR material, FSAR, and discussed the selected major components with the applicant.

18. Refueling Water Surface Ventilation System (RWSVS)

The RWSVS is a system that supports refueling efforts. Forced air blows through a series of vents just over the surface of the SFP. Suction vents are on the opposite side of the pool. The air flow path improves visibility by clearing away water vapor over the pool's surface. It also removes some portion of the heat coming off the pool surface thus making the refueling space more habitable. The applicant had determined that the system was not in scope. The inspectors reviewed the available LR information, system drawing, and the UFSAR and agreed with that conclusion.

19. Diesel Fuel Oil System

This system supplies fuel oil to the emergency diesel generators (EDGs) including the Alternate AC designated diesel (SBO). The LR function is to supply adequate fuel oil for seven day operation of two EDGs. The components included in scope for aging management review (AMR) are identified in Table 2.3.3.14 of the application. The inspectors reviewed the system scoping and screening documents, design basis information, applicable UFSAR sections, and boundary drawings.

20. Emergency Diesel Generator System

This system includes the EDGs and the systems providing mechanical support functions. The support systems include the lube oil system, intercooler water system, air coolant system, jacket water system, air start system, and the air intake and exhaust system. The LR function of the EDG system is to provide emergency power to the onsite electrical distribution system to assure the capability for a safe shutdown in the event of a loss of offsite power. The system components included in the LR scope for AMR are identified in Table 2.3.3.15 of the application. The inspectors reviewed the system scoping and screening documents, design basis information, applicable UFSAR sections, and boundary drawings.

21. Control Room Area Ventilation System

This system provides ventilation, heating, cooling, filtration and air intake and exhaust isolation during normal operation and following a design basis accident. The LR function is to maintain the control room environment within design limits and ensure compliance with control room dose requirements of 10 CFR 50 Appendix A, General Design Criterion 19. The system components included in the LR scope for AMR are identified in Table 2.3.3.9 of the application. The inspectors reviewed the system scoping and screening documents, design basis information, applicable UFSAR sections, and boundary drawings.

22. Liquid Waste and Drains System

This system collects, segregates, and processes reactor grade and non-reactor grade liquid wastes produced during plant operation and, refueling and maintenance activities. The system also included the equipment and floor drainage system. The LR function is to detect leakage in certain equipment rooms and minimize releases of radioactivity to the environment. Portions of the system are in scope due to 10 CFR 54.4 criteria for non-safety related equipment impact on safety related equipment. The system components included in LR scope are identified in Table 2.3.3.19 of the application and boundary drawing D-506447L, Farley - Units 1&2, 10 CFR 54.4 (a)(2) Scoping Summary for Mechanical Components. The inspectors reviewed the system scoping and screening documents, design basis information, applicable UFSAR sections, and boundary drawings.

RAI 2.3.19-4 addressed drain piping which was identified as in scope but screened out as not requiring an AMR without adequate justification regarding applicable aging mechanism and environmental conditions. The inspectors reviewed the RAI response and field verified the environmental conditions and concluded that due to the normally dry conditions of the piping there was no credible aging effects, as stated in the applicant's response to the RAI.

23. Auxiliary Steam and Condensate Recovery System

This system supplies steam for various heating and system loads in the Auxiliary and Turbine buildings, and provides a method of collection and pumping the condensate from these steam loads back to the Turbine building. The system is in scope for LR due to 10 CFR 54.4(a)(2). The system components included in the LR scope are identified in Table 2.3.4.5 of the application and boundary drawing D-506447L, Farley - Units 1&2, 10 CFR 54.4 (a)(2) Scoping Summary for Mechanical Components. The inspectors reviewed the system scoping and screening documents, design basis information, applicable UFSAR sections, and boundary drawings.

24. Turbine and Turbine Auxiliaries

These systems provide mechanical support for the main generator turbine and include the digital hydraulic electro-hydraulic (EH) system, the turbine lube oil system, moisture reheaters, extraction and reheat steam system, gland seal system, and the turning gear. The LR function for this system is the main turbine trip function required for the anticipated transients without scram (ATWS) event which includes components in the EH system and the Turbine Lube Oil system. The components required for this function are active components and were therefore screened out as not requiring an AMR. The inspectors reviewed the system scoping and screening documents, design basis information, applicable UFSAR sections, boundary drawings and system schematics .

RAI 2.3.4.6-1 requested additional verification that the Turbine and Turbine Auxiliaries components required for the LR function included no passive components requiring AMR. The inspectors reviewed the applicant's RAI response, the schematics for the EH systems and the Turbine Lube Oil system and field reviewed the accessible components and identified no passive components subject to LR scope.

25. Demineralized Water System

This system provides demineralized water for units 1 and 2 during all phases of plant operations. There are no safety related functions for this system, however, portions of the system are included in LR scope due to the containment isolation function and application of 10 CFR 54.4(a)(2) of the rule for NSR/SR component interaction. The system components included in the LR scope are identified in Table 2.3.3.16 of the application and boundary drawing D-506447L, Farley - Units 1&2, 10 CFR 54.4 (a)(2) Scoping Summary for Mechanical Components. The inspectors reviewed the system scoping and screening documents, design basis information, applicable UFSAR sections, and boundary drawings.

RAI 2.3.3.16-1 addressed an apparent inconsistency in the applicant's determination of system filter components included in LR scope and filter units not included in scope. Additionally, the in scope filters were not identified in the boundary drawing as in scope components. The inspectors reviewed the applicant's response and field verified the filters referenced in the RAI. The in scope filters were included due to 10 CFR 54.4(a)(2) spatial criteria which did not apply to the referenced filter which was not indicated in scope. Filters F001, F003 and F004 were included in scope due to 54.4(a)(2). Filter F005 was not included in scope as it is in a line to a abandoned component and is therefore a dry line. The applicant's mechanism for identification of 10 CFR 54.4(a)(2) is to identify these components in drawing D-506447L and not to highlight the boundary drawing for this group of in scope components. The inspectors concluded the applicant had appropriately identified these filter components for LR scope.

26. Yard Structures Ventilation System

This system included the heating, ventilation and air conditioning (HVAC) systems servicing various yard structures of the plant. The portions of the system in the LR scope included those HVACs servicing the Service Water Intake Structure (SWIS) and the EDG building. The LR function of these HVAC systems is to provide a suitable environment for personnel and equipment operation during normal and emergency conditions. Additionally, the SWIS HVAC minimizes hydrogen concentration in the SR battery rooms in the SWIS. The components within LR scope are identified in Table 2.3.3.12 of the application. The inspectors reviewed the system scoping and screening documents, design basis information, applicable UFSAR sections, and boundary drawings.

27. Auxiliary Feedwater System

This system supplies feedwater to the steam generators during startup, cool down, and emergency conditions. The Auxiliary Feedwater system includes the condensate storage tank (CST). The LR function is to provide a source of feedwater to the SGs to maintain a secondary heat sink for design basis event mitigation. The components included in the LR scope are identified in Table 2.3.4.4 of the application. The inspectors reviewed the system scoping and screening documents, design basis information, applicable UFSAR sections, and boundary drawings.

28. Auxiliary and Radwaste Area Ventilation

This system includes the following systems: Penetration Room Filtration System, Engineered Safeguards Room Air Cooling, Radioactive Waste Ventilation & Filtration, Non-radioactive Ventilation, and Spent Fuel Pool Ventilation & Filtration. The LR function for these systems includes limiting radioisotope release, maintaining ambient air in the spaces suitable for equipment important to safety and filtration and exhaust of spent fuel pool area and penetration room. Additionally, the Radioactive Waste Ventilation and Filtration system and Non-radioactive Ventilation System are in scope due to fire dampers in the system. Components included in the LR scope are identified in Table 2.3.3.10 of the application. The inspectors reviewed the system scoping and screening documents, design basis information, applicable UFSAR sections, and boundary drawings.

29. Primary Containment Ventilation

This system includes the Containment Cooling System and the Containment Purge System. The LR function for these systems includes containment post accident heat removal and containment isolation for the purge system. The components included in the LR scope are identified in Table 2.3.3.11 of the application. The inspectors reviewed the system scoping and screening documents, design basis information, applicable UFSAR sections, and boundary drawings.

30. Hydrogen Control System

This system includes several subsystems which jointly prevent hydrogen gas accumulations in containment. These subsystems include the Containment Hydrogen Recombiner System, Containment Post-Loss Of Coolant Accident (LOCA) Air Mixing System, the Reactor Cavity Hydrogen Dilution System, and the Post-Accident Containment Venting and Sampling System. The LR function of the system is to prevent the accumulation of flammable or explosive

concentrations of hydrogen in containment. The components included in the LR scope are identified in Table 2.3.3.18 of the application. The inspectors reviewed the system scoping and screening documents, design basis information, applicable UFSAR sections, and boundary drawings.

31. Turbine Bypass System

This system provided piping and components for bypassing the main generator turbine and directing main steam to the condenser during transient conditions of a load rejection and during startup and shut down. The Turbine Bypass System (steam dumps) is not safety related, not essential to the safe operation of the plant and is not an Engineered Safeguards feature. The inspectors reviewed the UFSAR Chapter 15 accident analysis, the applicant's LR system report for the Turbine Bypass System, system drawings, and discussed the system with the applicant staff. The inspectors concluded there was adequate basis for exclusion of this system from the LR scope.

32. Containment Recirculation System

This system includes several subsystems which provide for mixing of air in containment and the refueling canal area during normal operations. The subsystems include the Containment Recirculation System, Control Rod Drive Mechanism Cooling System, the Refueling Water Surface Ventilation System, and the Reactor Cavity Cooling System. The system has no safety related functions. There are no LR functions associated with this system. The inspectors reviewed UFSAR Chapter 15 Accident Analysis, the LR system report, Containment Recirculation System flow diagrams, and discussed the system with the applicant's staff. The inspectors concluded there was adequate basis for exclusion of this system from the LR scope.

b. Observations

The inspectors noted that on the safety injection boundary drawings, the RWSTs' atmospheric vents were not shown to be in scope. The boundary drawings were inconsistent on various drawings in depicting the atmospheric vents for the refueling water storage, condensate storage, and the reactor makeup water storage tanks as in or out of LR scope. The applicant stated that this was an omission and would be corrected and tracked by the applicant as their LR open item number 2004-011.

B. Implementation of the 10 CFR 54.4(a)(2) Methodology for Scoping and Screening of NSR Components

a. Scope

The inspectors performed a plant walkdown to review the implementation of the applicant's methodology as described in Section 2.1 of the application and applicable RAIs, for scoping and screening of 10 CFR 54.4(a)(2) components. These components included equipment in non-safety related (NSR) systems, structures, or components (SSCs) whose failure could affect the capability of safety related (SR) to accomplish their safety function. Five categories of 10 CFR 54.4 (a)(2) mechanical components were identified by the applicant as in scope for aging management review.

1. NSR piping attached to SR Piping
2. High energy NSR piping

3. Low energy piping that has a spatial relationship with SR SSCs
4. Piping that is used for relief valve flow paths or SR pump recirculation
5. Floor drain traps and plugs that support the maintenance of the penetration room filtration system pressure boundary.

The applicant's scoping of the (a)(2) components resulted in drawing D-506447L, 10 CFR 54.4(a)(2) Scoping Summary for Mechanical Components, which listed plant spaces/rooms containing systems with (a)(2) in scope components in that space. In developing drawing D-506447L, the applicant used piping composite drawings, electrical layout drawings, architectural equipment drawings and instrument location drawings to identify NSR "threat" equipment and SR "target" equipment. Field walk downs verified the spatial relationships identified from the drawing review.

The inspectors performed a plant walk down of a sample of spaces identified in D-506447L and reviewed the composite and layout drawings to assess the applicant's identification of 10 CFR 54.4(a)(2) components. The focus of the walk downs and drawing review was on category 3 components, low energy piping with spatial relationship to SR SSCs. The sample included the following spaces:

161	Corridor	162	Corridor
163	Corridor	172	Corridor (charging pump area)
185	Component Cooling Hx room	186	Boric Acid Batching room
192	AFW pump room	193	AFW pump room
70	Rear Hallway, EDG bldg.	229	Switchgear room
233	Switchgear room		

b. Observations

The inspectors concluded the applicant's identification of in scope10 CFR 54.4 (a)(2) components was consistent with the application and the Rule.

C. Evaluation of Scoping and Screening of Electrical Systems

For electrical and instrumentation & control (I&C) systems, a bounding approach as described in NEI 95-10 was used. Electrical/I&C component types used plant-wide were identified without regard to system. The listing provided by NEI 95-10 Appendix B was the basis for this list. Electrical component types were organized into commodity groups such as breakers, switches, and cables. Then the criterion of 10 CFR 54.21(a)(1)(i) was applied to identify component commodity groups that perform their intended functions without moving parts or without a change in configuration or properties, referred to as "passive" components. These components were identified utilizing the guidance of NEI 95-10 and the EPRI License Renewal Electrical Handbook.

10 CFR 54.21(a)(1)(ii) excludes those components or commodity groups that are subject to replacement based on a qualified life or specific time period from the requirements of an aging management review. The applicant concluded that electrical components included in the plant environmental qualification (EQ) program are replaced on a specified interval based on a qualified life. Therefore, components in the EQ program are not subject to an aging management review. For FNP the electrical component types that are in the scope of LR and require an AMR are electrical cables and connectors not subject to 10 CFR 50.49 EQ

requirements, fuse holders, high-voltage insulators, metal enclosed cable bus, oil-static cable, switchyard bus, and transmission conductors.

The applicant concluded that all of the other electrical and I&C commodities identified are either active, are subject to replacement based on a qualified life or specified time period, or do not perform any intended safety functions and are thus not subject to aging management review. The inspectors reviewed samples of electrical entries in the applicants electronic data base and reviewed boundary drawings D-169970L, sheets 1-3, and D-173096L, sheet 1 which highlighted the switchyard electrical supply path for recovery from a station blackout. The inspectors agreed with the applicant's conclusions.

D. Evaluation of Scoping and Screening of Structural Components

The applicant described its scoping and screening methodology and results in the LRA. Attachment 2 to this report lists the structures selected by the inspectors for evaluation during this inspection. The applicant conservatively concluded that all structures containing safety related equipment are in scope for license renewal. The inspectors reviewed a license renewal civil boundary drawing D-170084L Rev. A which is a structural layout for the Farley site. On that drawing all of the structures listed as being in LR scope in Attachment 2 where highlighted to signify they were in scope.

The inspectors examined four structural System Reports from the applicant's electronic data base. They were for System number T27 - Containment Equipment Hatch Access Enclosure, W37 - Circulating Water Pump Structure, and W24 - Cooling Towers. The documents described the basis for the applicant's conclusion that the Containment Equipment Hatch Access Enclosure, the Circulating Water Structures, and the Cooling Towers are not in scope for license renewal. The inspectors agreed with those conclusions.

E. Fire Protection

The rule states that SSCs relied upon in safety analyses or plant evaluations to perform a function that demonstrates compliance with 10 CFR 50.48, "Fire Protection", are within the scope of license renewal. Each nuclear plant has a unique fire protection (FP) program, and the licensing basis for meeting FP requirements is plant-specific. The LRA states that the plant-specific licensing basis documents applicable to the Farley FP Program, such as the UFSAR, SERs, and licensing correspondence, were reviewed to establish the FP scoping determinations. Based on that review, the applicant placed in scope for license renewal those SSCs that are relied upon in the event of a fire to perform a reactor plant safe shutdown, or to minimize radioactive releases to the environment.

The inspectors reviewed the boundary drawings provided for FP and discussed them with applicant engineers. The boundary drawings presented with the LRA are only a representative sample of plant fire protection equipment, but the inspectors concluded that the applicant was conservative in determining what equipment was in scope for LR. The inspectors agreed with the applicant's conclusions.

F. Visual Inspection of Plant Systems, Structures, and Components in Containment

As part of the license renewal inspection effort inspectors performed visual inspections of the interior of the Farley Unit 2 containment on March 24 and 25, 2004, during refueling outage 16. This included observation of accessible portions of plant systems, structures, components,

instrumentation lines, and electrical cables inside the containment to observe material condition and inspect for aging conditions that might not have been previously recognized and addressed in the License Renewal Application. The results of that inspection were documented in Farley Integrated Inspection report 2004 - 002 issued April 22, 2004. No adverse conditions of significance were identified. The material condition at Farley was good and no significant aging management issues were identified.

II. Conclusions

The inspectors concluded that the applicant had successfully performed scoping and screening and identified the structures and components subject to aging management in accordance with the methodology described in the LRA and the rule with the following exception.

The inspectors noted that boundary drawings were inconsistent on various drawings in depicting the atmospheric vents for the refueling water storage, condensate storage, and the reactor makeup water storage tanks as in or out of LR scope. The applicant stated that this was an omission and would be corrected and tracked by the applicant as their LR Open Item Number 2004-011.

Exit Meeting Summary

The results of this inspection were discussed on May 14, 2004, with members of the applicant staff in an exit meeting open for public observation at the Southern Nuclear Birmingham AL offices. The applicant acknowledged the results presented and presented no dissenting comments. The inspectors asked if any of the applicant materials reviewed were proprietary and were told none were proprietary.

ATTACHMENT 1

PARTIAL LIST OF PERSONS CONTACTED

Applicant

C. Collins, General Manager Support
M. Crisler, Senior Engineer
W. Evans, Senior Engineer
J. Fridrichsen, Programs and Licensing Manager
R. Hill, Special Projects Manager
J. Hornbuckle, Senior Engineer
M. MacFarlane, Technical Manager
D. McKinney, Senior Engineer
J. Mulvehill, Senior Engineer
C. Pierce, License Renewal Services Manager

NRC

T. Liu, Project Manager

LIST OF DOCUMENTS REVIEWED

License Renewal Boundary Drawings

A-170059L, SW Minimum Flow Control, Sheets 186-188
A-170059L, SW Lube & Cooling, Lube Water Pressure Control to SW, Sheets 199-203
A-170059L, SW Lube & Cooling, Cooling Water Pressure Control to SW Pumps, Sheets 204-208
A-200475L, Circulation Water System Make-Up, Sheet 47
A-200475L, By-Pass Control for SW, Sheets 48 & 49
A-200475L SW Minimum Flow Control, Sheets 87-89
A-200476L SW Lube & Cooling Water Pressure Control Valve, Sheets 1-10
A-200474L, Service Air Supply HDR Shut-Off Valve, Sheet 5
A-200474L, Instrument Air Dryer Bypass, Sheet 6
A-200474L, Essential Instrument Air Supply, Sheet 7
A-170058L, Equipment Diagram Service Water Pump, Sheets 39-43
A-170058L, Equipment Diagram Service Water Strainer, Sheets 44 & 45
A-170058L, Equipment Diagram Service Water Pumps Lube & Cooling Water Strainer, Sheets 64 & 65
B-170058L, Equipment Diagram - Refueling Water Storage Tank Q1F16T501, Sheets 72 and 72A
B-200219L, Service Water Pump, Sheets 39-43
B-200219L, Service Water Strainer, Sheets 44 & 45
B-200219L, Service Water Pump Lube & Cooling Water Strainer, Sheets 64 & 65
D-170113L, Service Water Pumps Cooling and Lube Water System, Sheet 1
D-170119L, Service Water System, Sheets 1 & 2
D-170119L, River Water, Service Water & Circulating Water System, Sheet 5
D-170119L, River Water System, Sheet 7

D-175002L, Component Cooling Water System, Sheets 1-3
D-175003L, Service Water System, Sheets 1-4
D-175009L, Sampling System, Sheets 1-3
D-175010L, Containment Cooling & Purge System, Sheets 1 & 2
D-175037L, Reactor Coolant System, Sheets 1 & 2
D-175042L, Waste Processing System, Sheet 1
D-175071L, Steam Generator Blowdown Process System, Sheet 1
D-200013L, River Water, Service Water & Circulating Water System, Sheets 2, 3, 5 & 8
D-200014L, Service Water Pumps, Cooling & Lube Water System, Sheet 1
D-205002L, Component Cooling Water System, Sheets 1-3
D-205009L, Sampling System, Sheets 1 & 2
D-205010L, Containment Cooling & Purge System, Sheets 1 & 2
D-205037L, Reactor Coolant System, Sheets 1 & 2
D-205042L, Waste Processing System, Sheet 1
D-205071L, Steam Generator Blowdown Processing System, Sheet 1
D-506447L, 10 CFR 54.4(a)(2) Scoping Summary for Mechanical Components, Units 1&2
D-170809L, Fuel Oil System for Diesel Gen 1-2C, Sheets 1 &2
D-170808L, Fuel Oil System for Diesel Gen 1-2A, Sheets 1 &2
D-200213L, Diesel Generator Fuel Oil System, Unit 2
D-170060L, Diesel Generator Fuel Oil System, Unit 1
D-175012L, HVAC & Filter Control & Computer Room, Sheets 1&2
D-175019L, Post Acc. Ctmt. Comb. Gas Cntrl. System
D-175004L, Drains & Vents Ctmt. & Aux. Bldg. - Rad
D-205004L, Drains & Vents Ctmt. & Aux. Bldg. - Rad
D-175005L, Aux. Bldg. Non-Rad RCP Oil Coll. System
D-205005L, Aux. Bldg. Non-Rad RCP Oil Coll. System
D-506445L, Service Water Intake Structure
D-506444L, Diesel Generator Building - HVAC
D-506446L, Diesel Generator Air Intake & Exhaust, Unit 1
D-170802L, Intrclr Water Sys. For Dsl Gen 1-2A, sheets 1&2
D-170803L, Air Coolant System for Diesel 1C
D-170801L, Lube Oil System for Diesel Gen. 2C
D-200210L, Intrclr Water Sys. For Diesel Gen 2B
D-170805L, Jacket Coolant Sys for DSL Gen 1C
D-200211L, Jacket Coolant Sys for Dsl Gen 2B
D-170800L, Lube Oil System for Diesel Gen 1B, Sheets 1&2
D-170807L, Air Start System for Diesel Gen 2C, Sheets 1&2
D-175010L, Containment Cooling & Purge Systems, Sheets 1&2
D-205010L, Containment Cooling & Purge Systems, Sheets 1&2
D-205019L, Post Acc. Ctmt. Comb. Gas Ctrl. System
D-205014L, HVAC Non-Rad Area & Elec. Equip Rm, Sheets 1&2
D-175014L, HVAC Non-Rad Area & Elec. Equip Rm, Sheets 1&2
D-175011L, Radwaste Area HVAC, Sheets 1,2&3
D-205011L, Radwaste Area HVAC, Sheets 1,2&3
D-175045L, HVAC Spent Fuel Pool Vent System Sheet 1
D-205045L, HVAC Spent Fuel Pool Vent System Sheet 1
D-175022L, HVAC Penetration Filtration System Sheet 1
D-175033L, Main Steam & Auxiliary Steam Systems Sheets 1&2
D-205033L, Main Steam & Auxiliary Steam Systems Sheets 1&2
D-175007L, Auxiliary Feedwater System Sheet 1
D-205007L, Auxiliary Feedwater System Sheet 1

D-170118L, Demin Wtr From Demineralizer to Stg. Tk Sheet 1
D-200011L, Condensate and Fdwtr System Sheet 1
D-506450L, License Renewal Drawing Legend
D-175047L, Demineralizer Water System Sheet 1
D-205047L, Demineralizer Water System Sheet 1
D-175073L, Main Feedwater System, Sheet 1
D-205073L, Main Feedwater System, Sheet 1
D-205036L, Reactor Make Up Water System, Sheet 1
D-175043L, Spent Fuel Pool Cooling system, Sheet 1
D-205039L, Chemical & Volume Control System, Sheet 1 to 7 excluding 5
D-175038L, Safety Injection System, Sheets 1 to 3
D-175036L, Reactor Water Make Up System, Sheet 1
D-205038L, Safety Injection System, Sheets 1 to 3
D-205041L, Residual Heat Removal System, Sheet 1
D-200219L, Refueling Water Storage Tank, Sheet 72
D-205034L, Inst. Air System, Sheet 3
D-175034L, Inst. Air System, Sheet 1
D-200007L, Main Steam System, Sheet 1
D-205033L, Main Steam and Auxiliary System, Sheet 1
D-170084L, License Renewal Civil Boundary, Sheet 1
D-170118L, Demineralized Water from Demineralizer to Storage Tank, Sheet 1
D-169970L, Electrical Boundary 230kv Single Line Diagram, Sheets 1-3
D-173096L, Electrical Boundary Loads Diagram, Sheet 1
D-170084L, License Renewal Civil Boundary, Sheet 1
D-170366L, Fire Protection Yard Mains, Sheets 1-2
D-170382L, Containment Stand Pipe, Sheet 1
D-170384L, Fire Protection Low Press. Carbon Dioxide, Sheets 1-5
D-170385L, Fire Protection High Press. Carbon Dioxide, Sheets 1&3
D-170386L, Fire Protection Halon 1301, Sheet 1
D-170811L, Turbine Generator Gas Diagram, Sheet 1
D-170870L, FP Piping Sprinkler System 1A-51, 1D-77, Sheet 1
D-170871L, FP Piping Sprinkler System 1A-59, 1A-23, Sheet 1
D-170891L, FP Piping Auxiliary Building, Sheet 1
D-200152L, Fire Protection Low Press. Carbon Dioxide, Sheet 1
D-205021L, Fire Protection Halon 1301 & Dry Chemical, Sheet 1
D-205048L, FP Piping Auxiliary Building, Sheets 1, 2, 5, 12, & 17
D-205049L, Fire Protection Low Press. Carbon Dioxide, Sheets 1 - 3
D-508562L, Diesel Eng. Driven Fire Pump Fuel Oil System, Sheet 1
D-205003L, Service Water, Sheet 1

License Renewal System Reports

Sampling System Rev. 0
High Head Safety Injection/CVCS System, E21, Rev 0
Spent Fuel Pool Cleaning and Clean-up System, Rev 0
Service Air, Rev 0
Containment Recirculation System, T40, Rev 0 (Refueling Water Surface Ventilation, T48 discussion)

License Renewal Procedures

SP-LR 2-0, License renewal Conduct of Operations, Ver. 1
SP-LR 2-2, Plant Farley Scoping Procedure, Ver. 2
SP-LR 2-4, Plant Farley Boundary Procedure, Ver. 2
SP-LR 2-5, Plant Farley Screening Procedure, Ver. 2
SP-LR 2-9, Plant Farley LR Database Control Procedure, Ver. 3

Functional System Descriptions

A181000, Component Cooling Water, Rev. 18
A181001, Service Water System, Rev. 45
A181002, Residual Heat Removal/Low Head Safety Injections System, Rev 27 A181003, Containment Isolation System, Rev. 15
A181008, Containment Spray, Rev 14
A181009, Chemical and Volume Control System, High Head Injection System, Accumulator and Reactor Water Makeup System, Rev 19
A181011, Post Accident Sample System, Rev. 4
A181012, Instrument Air, Rev 10
A181014, Spent Fuel Pool System, Rev 10

Plant Procedures

FNP-1-ARP-1.2, Main Control Board Annunciator Panel B, Rev 39 (HELBD)
FNP-1-ARP-1.5, Aux Building Pressure Switches, Rev 43 (HELBD)
FNP-1-ARP-20.0, SGFP Turbines Local Alarm Panel, Rev 6 (HELBD)

Plant Drawings

D-205039, Chemical & Volume Control System, Sheet 5, Rev 4
D-175039, Chemical and Volume Control System, Sheet 5, Rev 4
D-176507, Concrete - Auxilary Building, Sheet 1, Rev 12
B-175810, Logic Diagram, Sheet 126, Rev 2
D-177500, Elementary Diagram - Main Steam, Sheet 1, Rev 2
D-172886, Elementary Diagram - Steam Generator Feed Pump Turbine 1A-Trip, Reset & Limit SW Relay, Sheet 2
D-175022, Penetration Filtration System, Sheet 1, Rev 29
D-175033, Main Steam and Auxiliary Steam Systems, Sheet 2, Rev 24
D-175039, Chem. & Vol. Control System, Sheet 1, Rev 25
D-175071, Blown Processing System, Sheet 1, Rev 22
D-175073, Main Feedwater system, Sheet 1, Rev 16

Miscellaneous

LR Functions Systems Report (from LR data base, dated May 12, 2004, “In Scope Only”
Boundary ID HELB, Rev 0 (from LR data base)
Technical Requirements Manual 13.3.2, HELB, Version 8
FNP-0-M-87, Maintenance Rule Scoping Manual, Version 13

ATTACHMENT 2

JOSEPH M. FARLEY NUCLEAR PLANT
LICENSE RENEWAL INSPECTION PLAN
MECHANICAL SYSTEMS

Plant System Name	System in License Renewal Scope ?
Reactor Vessel	Yes
Reactor Vessel Internals	Yes
Reactor Coolant System and Connected Lines	Yes
Steam Generators	Yes
Containment Spray	Yes
Containment Isolation	Yes
Emergency Core Cooling	Yes
New Fuel Storage	Yes
Spent Fuel Storage	Yes
Spent Fuel Cooling and Cleanup	Yes
Overhead Heavy & Refueling Load Handling	Yes
Service Water	Yes
River Water (SW pond level instr., N2 supply)	Yes
Component Cooling Water	Yes
Instrument Air	Yes
Service Air	Yes
Chemical and Volume Control	Yes
Control Room Area Ventilation	Yes
Auxiliary and Radwaste Area Ventilation	Yes
Primary Containment Ventilation	Yes
Yard Structures Ventilation	Yes
Fire Protection	Yes
Diesel Fuel Oil	Yes
Emergency Diesel Generator	Yes
Demineralized Water	Yes
High Energy Line Break Detection	Yes
Hydrogen Control	Yes
Reactor Makeup Water	Yes
Sampling System	Yes
Main Steam	Yes
Feedwater	Yes
Steam Generator Blowdown	Yes
Auxiliary Feedwater	Yes
Auxiliary Steam and Condensate Recovery	Yes
Turbine and Turbine Auxiliaries	Yes
Liquid Waste and Drains	Yes
Containment (Air) Recirculation System	No
Refueling Water Surface Ventilation System	No
Turbine Bypass System	No

JOSEPH M. FARLEY NUCLEAR PLANT
LICENSE RENEWAL INSPECTION PLAN
STRUCTURAL

Plant Structure Name	**Structure in License Renewal Scope ?**
Containment Structure	Yes
Auxiliary Building	Yes
Diesel Generator Building	Yes
Turbine Building	Yes
Utility/Piping Tunnels	Yes
Electrical Duct Banks and Pull Boxes	Yes
Service Water Intake Structure	Yes
Service Water Discharge Structure	Yes
Storage Pond (UHS) Earthen Embankment and Spillway Structure	Yes
Steel Tank Structures (Foundations, Retaining Walls)	Yes
Switchyard	Yes
Fire Protection Pump House	Yes
Plant Vent Stack	Yes
Low Level Radwaste Storage Building	Yes
Solidification and Dewatering Facility	Yes
Component Supports	Yes
Containment Equipment Hatch Access Enclosure	No
Circulating Water Structures and Cooling Towers	No

JOSEPH M. FARLEY NUCLEAR PLANT
LICENSE RENEWAL INSPECTION PLAN
ELECTRICAL SYSTEMS

Electrical System Name	**System in License Renewal Scope ?**
AC Power Systems: Station Transformers Non Segregated Buses 4160 Volt Switchgear Load Centers & Low Voltage	Yes
Switchgear (480V and 600V): Motor Control Centers Disconnect Switches AC Distribution Cabinets 120 Volt AC Vital Distribution System 120 Volt AC Regulated Distribution System Misc. 120/208 Volt AC Equipment	Yes
Cables – Instrumentation, Power, & Control: Communication Systems Containment Temperature Monitoring (includes dewpoint monitoring) Core Cooling Monitoring	Yes
D.C. Distribution System	Yes
Battery System	Yes
Electrical Containment Penetrations	Yes
Engineered Safeguard Protection System	Yes
Fire Protection Systems (detection and alarms)	Yes
Neutron Monitoring System	Yes
Nuclear Instrumentation System	Yes
Power Transmission & Switchyard Systems: Bus Work Breakers, Switches 230KV Pipe Type Cable Circuits (oil-static cables) Battery System Protection System	Yes
Radiation Monitoring System	Yes
Process Radiation Monitoring System	Yes
Area Radiation Monitoring System	Yes
Reactor Protection System (includes AMSAC)	Yes
Cathodic Protection Systems	No
Grounding Systems	No

ATTACHMENT 3
LIST OF ACRONYMS USED

AFW	Auxiliary Feedwater System
AMP	Aging Management Program
AMR	Aging Management Review
ATWS	Anticipated Transient Without a Scram
CCW	Component Cooling Water System
CS	Containment Spray
CST	Condensate Storage Tank
CVCS	Chemical and Volume Control System
ECCS	Emergency Core Cooling Systems
EDG	Emergency Diesel Generator
EH	Electro-Hydraulic Control System
EQ	Environmental Qualification Program
FNP	Farley Nuclear Plant
FP	Fire Protection
FSD	Functional System Description
HELB	High Energy Line Break
HELBD	High Energy Line Break Detection System
HHSI	High Head Safety Injection
HVAC	Heating, Ventilation & Air Conditioning
IA	Instrument Air
I&C	Instrumentation and Control
LHSI	Low Head Safety Injection
LOCA	Loss Of Coolant Accident
LR	License Renewal
LRA	License Renewal Application
MFW	Main Feedwater System
MS	Main Steam System
NRR	NRC Office of Nuclear Reactor Regulation
NSR	Non Safety Related
RAI	Request for Additional Information
RCS	Reactor Coolant System
RHR	Residual Heat Removal System
RWMS	Reactor Water Makeup System
RWST	Refueling Water Storage Tank
RWSVS	Refueling Water Surface Ventilation System
SA	Service Air System
SBO	Station Blackout Event
SFCS	Spent Fuel Cooling and Cleanup System
SFP	Spent Fuel Pool
SG	Steam Generator
SGBD	Steam Generator Blowdown
SR	Safety Related
SSC	Systems, Structures, and Components
SW	Service Water System
SWIS	Service Water Intake Structure
UFSAR	Updated Final Safety Analysis Report