UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

October 1, 2003

LICENSEE: Southern Nuclear Operating Company

FACILITY: Joseph M. Farley Nuclear Plant

SUBJECT: SUMMARY OF MEETING BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION (NRC) STAFF AND SOUTHERN NUCLEAR OPERATING COMPANY (SNC) REPRESENTATIVES TO DISCUSS THE JOSEPH M. FARLEY NUCLEAR PLANT LICENSE RENEWAL APPLICATION

On September 23, 2003, the NRC staff met with members of Southern Nuclear Operating Company (SNC or the applicant) in a public meeting to discuss the license renewal application (LRA) for the Joseph M. Farley Nuclear Plant (FNP). The list of attendees is provided in Enclosure 1, and the meeting agenda is provided in Enclosure 2.

By letter dated September 12, 2003, the SNC submitted the application for the renewal of Operating Licenses NPF-2 and NPF-8 for Joseph M. Farley Nuclear Plant, Units 1 and 2. The NRC received the subject application on September 15, 2003. Copies of the application are available for public inspection at the Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland, or electronically from the Publicly Available Records component of the NRC's Agencywide Documents Access and Management System (ADAMS) under Accession Number ML032721356. The license renewal application for the Farley Nuclear Plant is also available at the Houston Love Memorial Library, 212 West Burdeshaw Street, Dothan, Alabama.

Messrs. Richard Hill, Charles Pierce, Jan Fridrichsen, and Michael Macfarlane of SNC provided an overview of the LRA. The applicant discussed the features of FNP, LRA format, and its approach in applying "NUREG-1801, Generic Aging Lessons Learned (GALL) Report," for the identification of plant components consistent with GALL programs. Enclosures 3 and 4 include the presentation materials provided by the applicant for the purpose of this meeting.

A draft copy of this summary was provided to the applicant to allow it the opportunity to comment prior to the summary being issued.

Tilda Liu, Project Manager /RA/
License Renewal Section A
License Renewal and Environmental Impacts Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket Nos.: 50-348 and 50-364

Enclosures: As stated

cc w/encl: See next page

Joseph M. Farley Nuclear Plant

cc:

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Meeting Attendance List - September 23, 2003

Name	Organization
Bob Kalinowski	AEP/D. C. Cook
Richard Grumbir	American Electric Power/Indian Michigan Power
Jacque Lingenfelter	Entergy Nuclear
Garry Young	Entergy Nuclear
Mark Hagar	Framatome/ANP
Mark Rinkee	Framatome/ANP
Kenneth Jungan	ISL
Harvey Abelson	ISL
Ben Gitnick	ISL
Shazia Faridi	ISL
Farideh Saba	ISL
Stewart Bailey	NRC
Ken Chang	NRC
Pei-Ying Chen	NRC
Stephanie Coffin	NRC
Mario Cora	NRC
Kurt Cozens	NRC
Richard Dipert	NRC
Noel Dudley	NRC
Johnny Eads	NRC
John Fair	NRC
Rani Franovich	NRC
Frank Gillespie	NRC
T. J. Kim	NRC
P. T. Kuo	NRC
Carolyn Lauron	NRC
Samson Lee	NRC
Chang-Yang Li	NRC
Yueh-Li (Renee) Li	NRC
Tilda Liu	NRC
Louise Lund	NRC
Kamal Manoly	NRC
James Medoff	NRC
George Morris	NRC
Cliff Munson	NRC
Duc Nguyen	NRC
Jim Strinisha	NRC
Angelo Stubbs	NRC
Joe Terrell	NRC
Steven West	NRC
Leon Whitney	NRC
Ron Young	NRC
Jan Fridrichsen	SNC
Richard Hill	SNC
Charles Pierce	SNC
Michael Mcfarlane	SNC

MEETING BETWEEN THE NRC AND THE SOUTHERN NUCLEAR COMPANY
LICENSE RENEWAL APPLICATION FOR FARLEY NUCLEAR PLANT, UNITS 1 AND 2
ROCKVILLE, MARYLAND
ROOM O-13B4
AGENDA
(Times were approximate)

September 23, 2003

I.	Introduction/Opening remarks	1:00 pm - 1:10 pm
II.	Presentation of license renewal application contents	1:10 pm - 1:20 pm
III.	Explanation of methodology used in determining consistency with Generic Aging Lessons Learned Report	1:20 pm - 2:50 pm
IV.	Public comments	2:50 pm - 3:00 pm
V.	Adjourn	3:00 pm

Enclosure 2

NRC-SNC
Plant Farley License Renewal
Working Session

September 23, 2003

SOUTHERN COMPANY
Energy to Serve Your World™

1

Farley License Renewal

SOUTHERN COMPANY
Energy to Serve Your World™

- Opening Remarks and Introduction
- Orientation to Farley Nuclear Plant
- Farley License Renewal Application
- Consistent with GALL Interpretation and Application

Farley Design Basics

SOUTHERN COMPANY
Energy to Serve Your World

- Three-loop, Westinghouse PWR
- Began Operation: Unit 1-1977, Unit 2-1981
- Construction Architect/Engineers
  - Westinghouse NSSS
  - Bechtel Power Corporation
    - » Class 1 Structures and ESF Systems
  - Southern Company Services
    - » SWIS, Turbine Building and remaining Plant
- SNC has current responsibility for engineering

Farley Plant Features

SOUTHERN COMPANY
Energy to Serve Your World

- 2775 MW thermal/910 MW electric
- Common Control Room in Aux Bldg
- Pre-stressed/post-tensioned dry CTMT
- Separate Spent Fuel Pools
- Five Emergency Diesel Generators

Farley Plant Features (cont.)

SOUTHERN COMPANY
Energy to Serve Your World

- Separate SW and RW Structures
- Ultimate Heat Sink: Service Water Pond
- Water Source: Chattahoochee River
- Unit 1 230-kV, Unit 2 500-kV
- Onsite Switchyard
- Site is Certified Wildlife Habitat

Long Term Operation

SOUTHERN COMPANY
Energy to Serve Your World

- SGs replaced in 2000/2001
- RV Head replacement planned 2004/2005
- Mechanical Draft Cooling Towers undergoing replacement
- Onsite Dry Cask Storage project in progress

Farley LRA

SOUTHERN COMPANY
Energy to Serve Your World

- Standard LRA Format for Sections 2 and 3
- Overall Format-NEI 95-10 Rev 3
- ISGs Addressed in Section 2.1.5
- Apr 1, 2003 Source Document Cut-Off
- Jul 1, 2003 ISG Cut-Off

Philosophy with GALL

SOUTHERN COMPANY
Energy to Serve Your World

- Two locations for consistency
  - Aging Management Review
  - Aging Management Programs
- Minor differences are still consistent
  - Aging mechanisms or environment descriptors
  - Key programmatic attributes remain
- Larger differences are consistent with exceptions
  - One or more key attributes

SNC Approach to GALL

SOUTHERN COMPANY
Energy to Serve Your World

- Seek as much consistency as possible
- Seek similarities with materials, environment, and aging effects
- Seek Component Type (CT) matchups to GALL CTs, where possible
- Seek similarities to GALL aging management strategies

Issues Encountered

SOUTHERN COMPANY
Energy to Serve Your World

- Exact matches difficult to make for FNP CT, Material, Environment, Aging Effect, and Program
- More FNP items to age-manage than identified in GALL
- Some FNP Material/Environment combinations not in GALL

Issues Encountered (cont.)

SOUTHERN COMPANY
Energy to Serve Your World™

- OE has demonstrated that some GALL aging effects are more appropriately managed by programs other than those identified by GALL (e.g. carbon steel bolting)
- One FNP program captures several GALL programs (e.g. ISI)
- Recent RAIs are beyond the SLRA level of detail

CONSISTENT with GALL Determination:

RESULTS OF SNC's AGING MANAGEMENT REVIEW

EXAMPLE

Reactor Coolant Systems, Reactor Coolant System and Connected Lines – Summary of Aging Management Review

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Valves Bodies, Class 1	Pressure Boundary	Stainless Steel	Borated Water	Cracking	Inservice Inspection Program Water Chemistry Control Program			
				Loss of Material	Water Chemistry Control Program			
			Inside	None	None Required			

---------- Results of SNC Aging Management Review ----------	----- GALL Consistency Results ------

Enclosure 4

C2. REACTOR COOLANT SYSTEM AND CONNECTED LINES (PRESSURIZED WATER REACTOR)

C2.1 Reactor Coolant System Piping and Fittings

- C2.1.1 Cold Leg
- C2.1.2 Hot Leg
- C2.1.3 Surge Line
- C2.1.4 Spray Line
- C2.1.5 Small-Bore RCS Piping, Fittings, and Branch Connections Less than NPS 4

C2.2 Connected Systems Piping and Fittings

- C2.2.1 Residual Heat Removal (RHR) or Low Pressure Injection System (Decay Heat Removal [DHR]/ Shutdown System)
- C2.2.2 Core Flood System (CFS)
- C2.2.3 High Pressure Injection System (Makeup & Letdown Functions)
- C2.2.4 Chemical and Volume Control System
- C2.2.5 Sampling System
- C2.2.6 Drains and Instrument Lines
- C2.2.7 Nozzles and Safe Ends
- C2.2.8 Small-Bore Piping, Fittings, and Branch Connections Less than NPS 4 in Connected Systems

C2.3 Reactor Coolant Pump

- C2.3.1 Casing
- C2.3.2 Cover
- C2.3.3 Closure Bolting

C2.4 Valves (Check, Control, Hand, Motor-Operated, Relief, and Containment Isolation)

- C2.4.1 Body
- C2.4.2 Bonnet
- C2.4.3 Closure Bolting

C2.5 Pressurizer

- C2.5.1 Shell/Heads
- C2.5.2 Spray Line Nozzle
- C2.5.3 Surge Line Nozzle
- C2.5.4 Spray Head
- C2.5.5 Thermal Sleeves
- C2.5.6 Instrument Penetrations
- C2.5.7 Safe Ends
- C2.5.8 Manway and Flanges
- C2.5.9 Manway and Flange Bolting
- C2.5.10 Heater Sheaths and Sleeves
- C2.5.11 Support Keys, Skirt, and Shear Lugs
- C2.5.12 Integral Support

IV Reactor Vessel, Internals, and Reactor Coolant System
C2. Reactor Coolant System and Connected Lines (Pressurized Water Reactor)

Item	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
C2.4-a C2.4.1 C2.4.2	Valves (check, control, hand, motor operated, relief, and containment isolation) Body Bonnet	Cast austenitic stainless steel CF-8M, SA182 F316, SA582 Type 416	Chemically treated borated water up to 340°C (644°F)	Cumulative fatigue damage/ Fatigue	Fatigue is a time-limited aging analysis (TLAA) to be performed for the period of extended operation. See the Standard Review Plan, Section 4.3 "Metal Fatigue," for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1)(i) and (ii). See Chapter X.M1 of this report, for meeting the requirements of 10 CFR 54.21(c)(1)(iii).	Yes, TLAA
C2.4-b C2.4.1	Valves (check, control, hand, motor operated, relief, and containment isolation) Body	Cast austenitic stainless steel CF-8M	Chemically treated borated water up to 340°C (644°F)	Crack initiation and growth/ Stress corrosion cracking	Monitoring and control of primary water chemistry in accordance with the guidelines in EPRI TR-105714 (Rev. 3 or later revisions or update) minimize the potential of SCC, and material selection according to the NUREG-0313, Rev. 2 guidelines of ≤0.035% C and ≥7.5% ferrite has reduced susceptibility to SCC. For CASS components that do not meet either one of the above guidelines, see Chapter XI.M1, "ASME Section XI, Subsections IWB, IWC, and IWD."	No
C2.4-c C2.4.1	Valves (check, control, hand, motor operated, relief, and containment isolation) Body	Cast austenitic stainless steel CF-8M	Chemically treated borated water up to 340°C (644°F)	Loss of fracture toughness/ Thermal aging embrittlement	Chapter XI.M1, "ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD," for Class 1 components For valve body, screening for susceptibility to thermal aging is not required.	No

Consistent with GALL Determination:

Component-Match Method

EXAMPLE

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Valves Bodies, Class 1	Pressure Boundary	Stainless Steel	Borated Water	Cracking	Inservice Inspection Program Water Chemistry Control Program	IV.C2.4-a	3.1.1-36	H
				Loss of Material	Water Chemistry Control Program	IV.C2.4-a	3.1.1-36	H
			Inside	None	None Required	IV.C2.4-a	3.1.1-36	G

IV Reactor Vessel, Internals, and Reactor Coolant System

C2. Reactor Coolant System and Connected Lines (Pressurized Water Reactor)

Item	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
C2.1-c C2.1.1 C2.1.2 C2.1.3 C2.1.4	Reactor coolant system piping and fittings Cold leg Hot leg Surge line Spray line	Stainless steel, stainless steel cladding on carbon steel	Chemically treated borated water up to 340°C (644°F)	Crack initiation and growth/ Stress corrosion cracking (stainless steel piping), cyclic loading	Chapter XI.M1, "ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD," for Class 1 components and Chapter XI.M2, "Water Chemistry," for PWR primary water in EPRI TR-105714	No
C2.1-d C2.1.1 C2.1.2	Reactor coolant system piping and fittings Cold leg Hot leg (external surfaces)	Carbon steel	Air, leaking chemically treated borated water	Loss of material/ Boric acid corrosion of external surfaces	Chapter XI.M10, "Boric Acid Corrosion"	No
C2.1-e C2.1.1 C2.1.2 C2.1.3	Reactor coolant system piping and fittings Cold leg Hot leg Surge line	Cast austenitic stainless steel	Chemically treated borated water up to 340°C (644°F)	Crack initiation and growth/ Stress corrosion cracking	Monitoring and control of primary water chemistry in accordance with the guidelines in EPRI TR-105714 (Rev. 3 or later revisions or update) minimize the potential of SCC, and material selection according to the NUREG-0313, Rev. 2 guidelines of ≤0.035% C and ≥7.5% ferrite has reduced susceptibility to SCC. For CASS components that do not meet either one of the above guidelines, a plant-specific aging management program is to be evaluated. The program is to include (a) adequate inspection methods to ensure detection of cracks, and (b) flaw evaluation methodology for CASS components that are susceptible to thermal aging embrittlement.	Yes, plant specific
C2.1-f C2.1.1 C2.1.2 C2.1.3	Reactor coolant system piping and fittings Cold-leg Hot-leg Surge line	Cast austenitic stainless steel	Chemically treated borated water up to 340°C (644°F)	Loss of fracture toughness/ Thermal aging embrittlement	Chapter XI.M12, "Thermal Aging Embrittlement of Cast Austenitic Stainless Steel (CASS)"	No

Consistent with GALL Determination:

AMR-Match Method (SNC Approach)

Excerpt from Table 3.1.2-3
Reactor Coolant Systems, Reactor Coolant System and Connected Lines – Summary of Aging Management Review

Component Type *GALL Reference*	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Valves Bodies, Class 1 *IV.C2.4.1* *IV.C2.4.2*	Pressure Boundary	Stainless Steel	Borated Water	Cracking	Inservice Inspection Program Water Chemistry Control Program	IV.C2.1-c	3.1.1-36	C
				Loss of Material	Water Chemistry Control Program			H
			Inside	None	None Required			G

Standard Notes

A. Consistent with NUREG-1801 item for component, material, environment, and aging effect. AMP is consistent with NUREG-1801 AMP.

B. Consistent with NUREG-1801 item for component, material, environment, and aging effect. AMP takes some exceptions to NUREG-1801 AMP.

C. Component is different, but consistent with NUREG-1801 item for material, environment, and aging effect. AMP is consistent with NUREG-1801 AMP.

D. Component is different, but consistent with NUREG-1801 item for material, environment, and aging effect. AMP takes some exceptions to NUREG-1801 AMP.

E. Consistent with NUREG-1801 for material, environment, and aging effect, but a different aging management program is credited.

F. Material not in NUREG-1801 for this component.

G. Environment not in NUREG-1801 for this component and material.

H. Aging effect not in NUREG-1801 for this component, material, and environment combination.

I. Aging effect in NUREG-1801 for this component, material, and environment combination is not applicable.

J. Neither the component, nor the material and environment combination is evaluated in NUREG-1801.

October 1, 2003

LICENSEE: Southern Nuclear Operating Company

FACILITY: Joseph M. Farley Nuclear Plant

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/RA/
Tilda Liu, Project Manager
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License Renewal and Environmental Impacts Program
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Docket Nos.: 50-348 and 50-364
Enclosures: As stated
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