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Docket Nos.: 50-348
50-364

NL-04-0384

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Joseph M. Farley Nuclear Plant Units 1 and 2
Application for License Renewal –
March 2, 2004 Requests for Additional Information

Ladies and Gentlemen:

This letter is in response to your letter dated March 2, 2004 requesting additional information for the review of the Joseph M. Farley Nuclear Plant, Units 1 and 2, License Renewal Application. These responses are provided in Enclosure 1.

In addition, in a teleconference of February 5, 2004, the NRC requested that SNC clarify the response to RAI 2.1-2. This response is provided in Enclosure 2.

Finally, in a teleconference of March 18, 2004, the NRC requested that SNC clarify the response to RAI 2.1-1 subpart F. In response to that request, SNC hereby confirms that the "attached piping" downstream of valve Q1P16V0791B is in the scope of 10CFR54.4(a)(2).

Mr. L. M. Stinson states he is a vice president of Southern Nuclear Operating Company, is authorized to execute this oath on behalf of Southern Nuclear Operating Company and to the best of his knowledge and belief, the facts set forth in this letter are true.

If you have any questions, please contact Charles Pierce at 205-992-7872.

A099

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY



L. M. Stinson
Vice President, Farley

Sworn to and subscribed before me this 31 day of March, 2004.



Notary Public

My commission expires: 4-28-07

LMS/GMC/slb

- Enclosures: 1. Responses to March 2, 2004 Requests for Additional Information, Joseph M. Farley Nuclear Plant, Units 1 and 2
2. Clarification to SNC Response to RAI 2.1-2, Joseph M. Farley Nuclear Plant Units 1 and 2

cc: Southern Nuclear Operating Company
Mr. J. B. Beasley Jr., Executive Vice President
Mr. D. E. Grissette, General Manager – Plant Farley
Document Services RTYPE: CFA04.054; LC# 13978

U. S. Nuclear Regulatory Commission
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Mr. L. A. Reyes, Regional Administrator
Mr. S. E. Peters, NRR Project Manager – Farley
Mr. C. A. Patterson, Senior Resident Inspector – Farley

Alabama Department of Public Health
Dr. D. E. Williamson, State Health Officer

ENCLOSURE 1

Joseph M. Farley Nuclear Plant Units 1 and 2

Application for License Renewal

Responses to March 2, 2004 Requests for Additional Information

RAI 2.0-1

The following questions are CONFIRMATORY and CLARIFICATION (C/C) in nature. The corresponding draft RAI number associated with each question is indicated in parenthesis.

A. (D-RAI 2.3.1.1-1)

Please provide justifications for the exclusions or submit an AMR for each of the stated component:

- (a) Verify whether the component group "Head Vent Penetration" listed in LRA Table 2.3.1.1 includes head vent piping, which serves as a pressure boundary. In accordance with 10 CFR 54.4(a)(2), the piping should be within the scope of license renewal.

Response:

Both the RPV head vent penetration and the associated stainless steel head vent piping are included in the scope of license renewal. However, the component group "Head Vent Penetration" listed in LRA Table 2.3.1.1 does not address the associated head vent piping. The "Head Vent Penetration" line item addresses only the NiCrFe penetration tube that penetrates the RPV head. Stainless steel head vent piping components extending from the head vent penetration tube are included in LRA Table 2.3.1.3, component group "Piping, Class 1 (Piping Components < NPS 4)." This piping is shown on FNP boundary drawings D175037L sheet 1 and D205037L sheet 1 for Units 1 and 2 respectively.

RAI 2.0.1 (continued)

The following questions are CONFIRMATORY and CLARIFICATION (C/C) in nature. The corresponding draft RAI number associated with each question is indicated in parenthesis.

A. (D-RAI 2.3.1.1-1)

Please provide justifications for the exclusions or submit an AMR for each of the stated component:

- (b) Verify whether the component group "Leakage Monitoring Tube Assembly" listed in LRA Table 2.3.1.1 includes O-Ring leak monitor tubes, which serves as a pressure boundary. In accordance with 10 CFR 54.4(a)(2), O-Ring leak monitor tubes should be within the scope of license renewal.

Response

SNC confirms that the component group "Leakage Monitoring Tube Assembly" listed in LRA Table 2.3.1.1 describes "O-ring leak monitor tubes." The assembly listed in Table 2.3.1.1 addresses the NiCrFe Alloy leakage monitoring components supplied with the Reactor Vessel. Stainless steel piping components extending from the leakage monitoring tube assembly are included in LRA Table 2.3.1.3, component group "Piping, Class 1 (Piping Components < NPS 4)." This piping is shown on FNP boundary drawings D175037L sheet 1 and D205037L sheet 1 for Units 1 and 2 respectively. Both the NiCrFe leakage monitoring tubes and the associated stainless steel piping components are included in the scope of license renewal.

RAI 2.0.1 (continued)

The following questions are CONFIRMATORY and CLARIFICATION (C/C) in nature. The corresponding draft RAI number associated with each question is indicated in parenthesis.

B. (D-RAI 2.3.1.1-2)

Instrumentation tubes and safe ends were not identified in the LRA (Table 2.3.1.1) as within the scope of license renewal. The subject components perform a pressure boundary function, and therefore, should be within scope. The staff requests the applicant to confirm that there are no instrumentation tubes and safe ends at Farley. However, if instrumentation tubes and safe ends do exist, then the applicant should identify them within scope, and submit an AMR for them.

Response:

FNP uses instrumentation tubes to guide incore instrumentation. Furthermore, these instrumentation tubes are within the scope of license renewal. FNP LRA Table 2.3.1.1 Component Group "Bottom Mounted Instrumentation Guide Tubes" describes the stainless steel tubing external to the Reactor Vessel that is used to guide the incore flux detectors into the Reactor Vessel.

The bottom mounted instrumentation penetrations at FNP include stainless steel extension pieces. These extension pieces are welded to the bottom mounted instrumentation guide tubes and are included with these stainless steel guide tubes for the purposes of aging management review.

FNP LRA Table 2.3.1.1 component group "Bottom Mounted Instrumentation Penetrations" describes the NiCrFe alloy tubing which penetrates the bottom head of the Reactor Vessel.

RAI 2.0-1 (continued)

The following questions are CONFIRMATORY and CLARIFICATION (C/C) in nature. The corresponding draft RAI number associated with each question is indicated in parenthesis.

C. (D-RAI 2.3.1.2-2)

Please clarify whether the following list of bolts are included in LRA Table 2.3.1.1 as part of the component group, "Baffle Bolts."

- Lower and Upper Support Column Bolts
- Baffle/Former Bolts
- Barrel/Former Bolts
- Guide Tube Bolts
- Clevis Insert Bolts

The above list usually provides structural support of the reactor core as well as flow distribution of reactor coolant to the reactor core. The above items meet the criteria identified in 10 CFR 54.4(a)(2), and therefore, should be within the scope of license renewal. If the above items are not included in component group "Baffle Bolts" and exist at Farley, please provide justification for the exclusion or submit an AMR for the stated components.

Response

The FNP lower and upper support column bolts, baffle / former bolts, barrel / former bolts, guide tube bolts, and clevis insert bolts are included within the scope of license renewal and are subject to aging management review.

The correct table reference for FNP reactor internals components subject to an aging management review is LRA Table 2.3.1.2, not 2.3.1.1 as described in the Staff question. Within this LRA Table, the subject components are addressed as follows:

- The Component group "Baffle Bolts" includes both the Baffle to Former bolts and the Barrel to Former bolts.
- Lower and upper support column bolts are addressed as sub-components of Table 2.3.1.2 component groups "Lower Support Columns" and "Upper Support Columns" respectively. LRA Table 3.1.2-2, which describes aging management for these assemblies, provides the clarification that associated fasteners are included.
- Guide tube bolts are addressed as sub-components of LRA Table 2.3.1.2 component group item "Control Rod Guide Tube Assemblies." LRA Table 3.1.2-2, which describes aging management for these assemblies, provides the clarification that associated fasteners are included.
- Clevis Insert Bolts are addressed as sub-components of LRA Table 2.3.1.2 component group item "Clevis Inserts and Fasteners."

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RAI 2.0-1 (continued)

The following questions are CONFIRMATORY and CLARIFICATION (C/C) in nature. The corresponding draft RAI number associated with each question is indicated in parenthesis.

D. (D-RAI 2.3.1.2-3)

Diffuser plates were not identified in the LRA (Table 2.3.1.2) as within the scope of license renewal. The above component provides flow distribution of reactor coolant to the reactor core and meets the criteria identified in 10 CFR 54.4(a)(2). Therefore, diffuser plates should be within the scope of license renewal. Please provide justification for the exclusion or submit an AMR for the stated component.

Response

The design of the reactor vessel for FNP Units 1 and 2 does not include diffuser plates.

RAI 2.0-1 (continued)

The following questions are CONFIRMATORY and CLARIFICATION (C/C) in nature. The corresponding draft RAI number associated with each question is indicated in parenthesis.

E. (D-RAI 2.3.1.3-2)

The following components were not identified in the LRA (Table 2.3.1.3) as within the scope of license renewal:

(a) Primary loop elbows

These components provide pressure boundaries and meet the criteria identified in 10 CFR 54.4(a)(2). Therefore, these components should be within the scope of license renewal. Please provide justification for the exclusion or submit an AMR for each of the stated components.

Response

The primary loop elbows are included in LRA Table 2.3.1.3, under the Component Type "Piping, Class I (Reactor Coolant Loop)," and are included within the scope of license renewal for FNP.

RAI 2.0-1 (continued)

The following questions are CONFIRMATORY and CLARIFICATION (C/C) in nature. The corresponding draft RAI number associated with each question is indicated in parenthesis.

E. (D-RAI 2.3.1.3-2)

The following components were not identified in the LRA (Table 2.3.1.3) as within the scope of license renewal:

- (b) Reactor coolant pump lugs

These components provide pressure boundaries and meet the criteria identified in 10 CFR 54.4(a)(2). Therefore, these components should be within the scope of license renewal. Please provide justification for the exclusion or submit an AMR for each of the stated components.

Response:

The reactor coolant pump support lugs are included in LRA Table 2.3.1.3, under the Component Type ; "RCP – Pump Casing." These support lugs are integral attachments to the reactor coolant pump casings and are included in the scope of license renewal for FNP.

RAI 2.0-1 (continued)

The following questions are CONFIRMATORY and CLARIFICATION (C/C) in nature. The corresponding draft RAI number associated with each question is indicated in parenthesis.

F. (D-RAI 2.3.1.4-3)

The following components were not identified in the LRA (Table 2.3.1.4) as within the scope of license renewal:

- (a) Internal shroud

The above components provide structural support functions and meet the criteria identified in 10 CFR 54.4(a)(2). Therefore, these components should be within the scope of license renewal. Please provide justification for the exclusion or submit an AMR for each of the stated component.

Response:

The FNP replacement steam generators do not include a subcomponent with the name, "Internal Shroud." The most similar FNP steam generator subcomponent is the "Tube Bundle Wrapper and Support Assembly," listed in LRA Table 2.3.1.4.

The Tube bundle and Wrapper Support Assemblies are included in the scope of license renewal for FNP.

RAI 2.0-1 (continued)

The following questions are CONFIRMATORY and CLARIFICATION (C/C) in nature. The corresponding draft RAI number associated with each question is indicated in parenthesis.

F. (D-RAI 2.3.1.4-3)

The following components were not identified in the LRA (Table 2.3.1.4) as within the scope of license renewal:

- (b) Lattice grid tube supports

The above components provide structural support functions and meet the criteria identified in 10 CFR 54.4(a)(2). Therefore, these components should be within the scope of license renewal. Please provide justification for the exclusion or submit an AMR for each of the stated component.

Response:

The Westinghouse designed replacement steam generators for FNP do not include lattice grid tube supports. The most similar FNP steam generator subcomponents are the "Tube Support Plates, Flow Distribution Baffles, and Antivibration Bars," listed in LRA Table 2.3.1.4. See LRA Section 3.1.2.2.12 for further information.

The Tube Support Plates, Flow Distribution Baffles, and Antivibration Bars are included in the scope of license renewal for FNP.

RAI 2.0-1 (continued)

The following questions are CONFIRMATORY and CLARIFICATION (C/C) in nature. The corresponding draft RAI number associated with each question is indicated in parenthesis.

F. (D-RAI 2.3.1.4-3)

The following components were not identified in the LRA (Table 2.3.1.4) as within the scope of license renewal:

(c) U-Bend restraints

The above components provide structural support functions and meet the criteria identified in 10 CFR 54.4(a)(2). Therefore, these components should be within the scope of license renewal. Please provide justification for the exclusion or submit an AMR for each of the stated component.

Response:

The FNP replacement steam generators do not include a subcomponent with the name, "U bend Restraints." The most similar FNP steam generator subcomponent are the antivibration bars included in the LRA Table 2.3.1.4 component type item "Tube Support Plates, Flow Distribution Baffles, and Antivibration Bars."

The Antivibration Bars are included in the scope of license renewal for FNP.

RAI 2.0-1 (continued)

The following questions are CONFIRMATORY and CLARIFICATION (C/C) in nature. The corresponding draft RAI number associated with each question is indicated in parenthesis.

F. (D-RAI 2.3.1.4-3)

The following components were not identified in the LRA (Table 2.3.1.4) as within the scope of license renewal:

- (d) Support pad

The above components provide structural support functions and meet the criteria identified in 10 CFR 54.4(a)(2). Therefore, these components should be within the scope of license renewal. Please provide justification for the exclusion or submit an AMR for each of the stated component.

Response:

The support pads for the FNP steam generators are integral to the channel head forging. The "Channel Head (with Integral Primary Inlet and Outlet Nozzles and Manways)," is listed in LRA Table 2.3.1.4.

The Channel Head for each steam generator is included in the scope of license renewal for FNP.

RAI 2.0-1 (continued)

The following questions are CONFIRMATORY and CLARIFICATION (C/C) in nature. The corresponding draft RAI number associated with each question is indicated in parenthesis.

F. (D-RAI 2.3.1.4-3)

The following components were not identified in the LRA (Table 2.3.1.4) as within the scope of license renewal:

- (e) Seismic lugs

The above components provide structural support functions and meet the criteria identified in 10 CFR 54.4(a)(2). Therefore, these components should be within the scope of license renewal. Please provide justification for the exclusion or submit an AMR for each of the stated component.

Response:

The FNP Steam generators do not include a subcomponent with the name, "Seismic Lugs." SNC confirms the seismic support features for the steam generators are included in scope. Features integral to the steam generators are included in the component types listed in LRA Table 2.3.1.4. Attached structural support features for the steam generator are included in the component types listed in LRA Table 2.4.3.

The components that provide structural support functions for the steam generators are included in the scope of license renewal for FNP.

RAI 2.0-1 (continued)

The following questions are CONFIRMATORY and CLARIFICATION (C/C) in nature. The corresponding draft RAI number associated with each question is indicated in parenthesis.

G. (D-RAI 2.3.1.4-5)

Steam generator (SG) tube plugs were not identified in the LRA (Table 2.3.1.4) as within the scope of license renewal. The subject components perform a pressure boundary function, and therefore, should be within scope. The staff requests the applicant to confirm that there are no SG tube plugs inside the SGs at Farley. If there are tube plugs inside the SGs, then the applicant should identify them within scope, and submit an AMR for them.

Response:

Tube plugs have not been installed in the Replacement Steam Generators at FNP. As stated in LRA Section 3.1.2.2.11, the current material of choice for any plugs is thermally treated Alloy 690. Use of this material for any future installation of tube plugs will cause the FNP configuration to remain consistent with NUREG-1801. See LRA Section 3.1.2.2.11 and LRA Table 3.1.1 (item 3.1.1-18) for further discussion.

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RAI 2.0-1 (continued)

The following questions are CONFIRMATORY and CLARIFICATION (C/C) in nature. The corresponding draft RAI number associated with each question is indicated in parenthesis.

H. (D-RAI 2.3.3.8-1c) – With agreement from the NRC Staff, this question is no longer being treated as CONFIRMATORY and CLARIFICATION and is being renumbered to RAI 2.3.3.8-1C. The response is being supplied as part of this letter.

RAI 2.0-1 (continued)

The following questions are CONFIRMATORY and CLARIFICATION (C/C) in nature. The corresponding draft RAI number associated with each question is indicated in parenthesis.

I. (D-RAI 2.4-2)

Based on its review of LRA Sections 2.1, 2.2, 2.3, 2.4, and 2.5, the staff identified a number of cross-references between the mechanical and structural scoping and screening, that require clarification and/or additional information:

LRA Table 2.3.1.3 identifies "Pressurizer -Support Lugs" and "Pressurizer -Support Skirt and Flange", with a "Structural Support" intended function. These component types appear to be the ASME Class 1 component support for the pressurizer. However, LRA Section 2.4.1.4 "Containment Internal Structures" states "RCS supports are addressed in Section 2.4.3, "Component Supports". LRA Section 2.4.3.1 "Supports for ASME and Non-ASME Piping and Components" describes the supports for the reactor vessel, steam generator, reactor coolant pumps, and pressurizer.

In order to clarify the treatment of pressurizer supports in the LRA,

- (a) Verify that the ASME Class 1 component supports for the reactor vessel, steam generators, reactor coolant pumps, and pressurizer are included in the Structures scope, under Component Supports. In LRA Table 2.4.3, only "RPV Supports" are explicitly identified.

Response:

SNC has verified that the ASME Class 1 component supports for the reactor vessel, steam generators, reactor coolant pumps, and pressurizer are included in the Structures scope, under Component Supports in Section 2.4.3.1 of the LRA. RPV Supports are listed in Table 2.4.3 as a unique component type because of its importance and its separate listing in NUREG-1801 (GALL). Other items e.g., support for steam generators, reactor coolant pumps, and pressurizers are included in scope under the component type "ASME & Non-ASME Piping and Component Support Members."

RAI 2.0-1 (continued)

The following questions are CONFIRMATORY and CLARIFICATION (C/C) in nature. The corresponding draft RAI number associated with each question is indicated in parenthesis.

I. (D-RAI 2.4-2)

Based on its review of LRA Sections 2.1, 2.2, 2.3, 2.4, and 2.5, the staff identified a number of cross-references between the mechanical and structural scoping and screening, that require clarification and/or additional information:

LRA Table 2.3.1.3 identifies "Pressurizer -Support Lugs" and "Pressurizer -Support Skirt and Flange", with a "Structural Support" intended function. These component types appear to be the ASME Class 1 component support for the pressurizer. However, LRA Section 2.4.1.4 "Containment Internal Structures" states "RCS supports are addressed in Section 2.4.3, "Component Supports". LRA Section 2.4.3.1 "Supports for ASME and Non-ASME Piping and Components" describes the supports for the reactor vessel, steam generator, reactor coolant pumps, and pressurizer.

In order to clarify the treatment of pressurizer supports in the LRA,

- (b) explain the Pressurizer -Support Lugs and Pressurizer -Support Skirt and Flange entries in LRA Table 2.3.1.3.

Response:

The Pressurizer Support Skirt and Flange is welded to the bottom portion of the pressurizer vessel and the Pressurizer Support Lugs are welded to the upper head of the pressurizer and therefore both components are integral with the Pressurizer. These Pressurizer sub-components are evaluated with the Pressurizer in Section 2.3 of the FNP LRA. Structural support members interfacing with the Pressurizer Support Lugs and Support Skirt and Flange are included as structural components and evaluated in Section 2.4.3 of the FNP LRA.

RAI 2.0-1 (continued)

The following questions are CONFIRMATORY and CLARIFICATION (C/C) in nature. The corresponding draft RAI number associated with each question is indicated in parenthesis.

J. (D-RAI 2.4-4)

In LRA Section 2.4.2.6 "Steel Tank Structures (Foundations and Retaining Walls)", it states

The Emergency Diesel Generator Fuel Oil Storage Tanks are 40,000 gallon, seismic category I underground tanks. The tanks are supported by poured concrete and buried for protection.

LRA Table 2.4.2.6 does not specifically identify a component type to cover a buried concrete foundation. The staff requests the applicant to confirm that the subject buried concrete foundation is in the scope of license renewal, and to identify the component type in LRA Table 2.4.2.6 that includes this foundation.

Response:

SNC confirms that the Emergency Diesel Generator Fuel Oil Storage Tanks buried concrete foundations are in the scope of license renewal. Typically, component types in the LRA Section 2 tables do not include environmental descriptors, these are included in the corresponding table in Section 3 of the LRA. The component type "Concrete: Foundation" in LRA Table 2.4.2.6 is applicable to the Emergency Diesel Generator Fuel Oil Storage Tanks buried concrete foundation. The buried environment is identified in LRA Table 3.5.2-7 component type "Concrete: Foundation" with a corresponding environment of Below Grade, and is inclusive of the Emergency Diesel Generator Fuel Oil Storage Tanks buried concrete foundations.

RAI 2.0-1 (continued)

The following questions are CONFIRMATORY and CLARIFICATION (C/C) in nature. The corresponding draft RAI number associated with each question is indicated in parenthesis.

K. (D-RAI 2.4-6)

LRA Section 2.4.2.1 states that the Auxiliary Building is a reinforced concrete slab, bearing directly on the Lisbon foundation. However, FSAR Section 3.8.4.1A indicates that portions of the foundation consist of a reinforced concrete slab placed over 9 ft. 5 in. of concrete fill, which in turn bears on the Lisbon formation. FSAR Section 3.8.4.1A further indicates that another portion of the foundation consists of a reinforced concrete slab placed over 30 ft. of compacted fill, which in turn rests on a reinforced concrete mat bearing directly on the Lisbon formation. In addition, FSAR Section 3.8.5.1B indicates that the eastern section of the Auxiliary Building is supported on spread footings which bear on the Lisbon formation, and also states that loads are transmitted through cast-in place reinforced concrete columns. The applicant is requested to clarify whether all the concrete structural elements of the Auxiliary Building foundation (as described in the FSAR) are within the scope of license renewal. If not, provide the technical basis for their exclusion.

Response:

SNC confirms that all the concrete structural elements of the Auxiliary Building foundation (as described in the UFSAR) are within the scope of license renewal.

RAI 2.3.3.8-1C [Formally issued as RAI 2.0-1 H (D-RAI 2.3.3.8-1c)]

Flow element was not identified in the LRA (Table 2.3.3.8) as within the scope of license renewal. This component provides pressure boundary functions and meets the criteria identified in 10 CFR 54.4(a)(2). Therefore, it should be within the scope of license renewal. Provide justification for the exclusion or submit an AMR for the stated component.

Response:

The SNC process should have included this component type as a separate line item in the LRA. These flow elements are constructed from stainless steel and are exposed to a borated water environment. The aging effects requiring management for these flow elements are loss of material and cracking. The FNP Water Chemistry Control Program is credited to manage these aging effects.

The "Flow Orifice/Element" component type should have been included in LRA Table 2.3.3.8 as follows:

Component Type	Intended Function
Flow Orifice/Element	Flow Restriction Pressure Boundary

Correspondingly, the aging management review summary in Table 3.3.2-8 should have included the following:

Component Type <i>GALL Reference</i>	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Flow Orifice/Element	Pressure Boundary Flow Restriction	Stainless Steel	Borated Water	Cracking	Water Chemistry Control Program	VII.E1.7-c	3.3.1-9	D
				Loss of Material	Water Chemistry Control Program			H, 39
	Inside		None	None Required			G	

RAI 2.4-7

LRA Section 2.4.1 "Containment Structure" contains the following discussion related to electrical penetrations through containment:

2.4.1.3 Penetrations

In general, a containment penetration consists of a sleeve embedded in the concrete wall or floor and welded to the containment liner plate. Loads on the penetration are transferred to the containment structure. The process pipe or cable feed-through assembly passes through the sleeve and is seal welded to the sleeve via an appropriate adapter. Additional detail is provided below.

Electrical Penetrations

Electrical penetrations consist of a sleeve that passes through the containment boundary. The sleeve is welded to the containment liner plate. A cable feed-through assembly is inserted in the sleeve and welded to the sleeve inside containment for Conax and GE type penetrations. The feed-through assembly is screwed to the clip angle for a Westinghouse type penetration.

LRA Table 2.2-1f "Systems and Structures within the Scope of License Renewal – Electrical Components" specifically lists "(Electrical) Containment Penetrations". However, LRA Table 2.5.1 "Electrical Component Types Subject to Aging Management Review and their Intended Functions" does not specifically identify the cable feed-through assembly.

LRA Table 2.4.1 "Containment Structure Component Types Subject to Aging Management Review and their Intended Functions" does not identify any component group that would obviously include the cable feed-through assembly.

From the information in the LRA, the staff cannot determine whether the applicant is treating the cable feed-through assembly as a component of the containment structure or as an electrical component. The staff requests the applicant to clarify its treatment of the cable feed-through assembly, and also to identify where the AMR is located in the LRA.

Response:

For the Farley LRA, the cable feed-through assembly is treated as an electrical component with the electrical connection function addressed in the electrical scoping and screening evaluations. However, the pressure-boundary and fission product barrier function of the assembly is included in the civil/structural scoping and screening for the containment structure.

The last paragraph of the system description subsection of LRA Section 2.3.2.2, "Containment Isolation System" outlines the division of responsibility for containment penetration assemblies between the various disciplines (mechanical, electrical, and civil), however some minor clarifications are needed. This paragraph should read as follows (changes are identified by bold italics and strikeouts):

"Note that the pressure boundary ~~(metallic)~~ portions of electrical penetrations, pipe sleeve assembly surrounding process penetrations,

and miscellaneous/spare mechanical penetrations that are not associated with a process system are included in the civil/structural screening described in Section 2.4 of this application. The ~~non-metallic and~~ conductor portions (*e.g., electrical cables and connections*) of electrical penetrations are included in the electrical/I&C screening described in Section 2.5 of this application.”

Pressure-Boundary And Fission Product Barrier Function:

LRA Tables 2.4.1 and 3.5.2-1 list Component Types “Penetration Sleeves, Penetration bellows” and “Seals, Gaskets, and Moisture Barriers”. The cable feed-through assemblies for electrical penetrations and the closure assemblies for the miscellaneous/spare mechanical penetrations are included in the “Penetration Sleeves, Penetration bellows” component type. The sealants and gaskets used in these electrical and mechanical penetration assemblies are included under the “Seals, Gaskets, and Moisture Barriers” component type.

Note that “Pressure Boundary” should have been included in the LRA as an Intended Function for the “Seals, Gaskets, and Moisture Barriers” component type (for consistency).

Electrical Connection Function:

FNP has both EQ and Non-EQ containment electrical penetrations. The cable feed-through assemblies for electrical penetrations that are subject to 10 CFR 50.49 environmental qualification (EQ) requirements are treated as TLAAs and addressed in Section 4.4 of the LRA (refer to Table 3.6.1 Item 3.6.1-1). The cable feed-through assemblies for Non-EQ containment electrical penetrations are included in the first two component types in LRA Tables 2.5.1 and 3.6.2-1:

- “Electrical cables and connections not subject to 10 CFR 50.49 EQ Requirements;” and
- “Electrical cables used in instrumentation circuits not subject to 10 CFR 50.49 EQ requirements that are sensitive to reduction in conductor insulation resistance.”

RAI 3.6.2-1

Table 3.6.2-1, Electrical Components - Summary of Aging Management Review, discusses the intended functions and aging effects and aging management programs associated with the oil-static cables. Under the "Pressure Boundary" function, the AMPs referenced are Buried Piping and Tank Inspection Program [B.5.4] and External Surfaces Monitoring Program [B.5.3]. These programs list the Oil-Static Cable Pressurization System. Under the "Provide Electrical Connections" function, it states that there is no aging effect and no AMP is required. The table does not address the effect of aging on the oil impregnated paper insulation system and the terminations at each end of the cable.

- A.** LR boundary drawing D-372816L does not appear to include the oil-static cable. Confirm that the boundary of the oil-static cable pressurization system includes the oil-static cable. If not, describe the AMP that covers the oil-static cable.

Response:

The "Pressure Boundary" function for the portion of the oil-static cables that is above ground will be age managed by the External Surfaces Monitoring Program. The "Pressure Boundary" function of the portion of the oil-static cables that is buried will be age managed by the Buried Piping and Tank Inspection Program. The boundary change is located where the oil supply pipe connects to the oil-static cables. The intent of the location of the boundary line on D372816L was to show that the piping which supplies the pressurized oil to the oil-static cables is in the Oil-Static Cable Pressurization System boundary (COS) and that the oil-static cables are in the Electrical Components boundary (EC). The oil-static cables are shown on the Electrical Components (EC) boundary drawings D169970L sheets 1, 2 & 3. The oil static cables are the feeder cables from the 230 kV (High Voltage) Switchyard to the starting station service transformers (described as start-up auxiliary transformers in LRA section 2.3.3.20) depicted on sheet 3 of D169970L.

RAI 3.6.2-1 (continued)

Table 3.6.2-1, Electrical Components - Summary of Aging Management Review, discusses the intended functions and aging effects and aging management programs associated with the oil-static cables. Under the "Pressure Boundary" function, the AMPs referenced are Buried Piping and Tank Inspection Program [B.5.4] and External Surfaces Monitoring Program [B.5.3]. These programs list the Oil-Static Cable Pressurization System. Under the "Provide Electrical Connections" function, it states that there is no aging effect and no AMP is required. The table does not address the effect of aging on the oil impregnated paper insulation system and the terminations at each end of the cable.

B. Describe how the aging effects on the oil-static cable insulation system is to be monitored. Provide operating experience with this cable system at FNP.

Response:

The SNC review determined there were no aging effects requiring management identified for the oil-static cable insulation system. Table 3.6.2-1 (page 3.6-11) should not have a horizontal grid line dividing the "Component Type" of Oil-Static Cables from the "Intended Function" of "Provide electrical connections." In addition, the component "Material" of "paper" was inadvertently omitted but, however has been addressed in the AMR for Oil-Static Cables.

Operating experience was reviewed by searching the FNP condition reports (CR) database and by interviews with knowledgeable personnel both within the Southern Electric System and industry consultants. No cases were identified where a failure of the oil impregnated paper insulation system occurred.

The oil-static cables are attached to vendor supplied terminals inside potheads at the cable ends. The other end of the terminals protrude through the potheads where vendor supplied lugs are attached in order to make connections to switchyard conductors. The connections between the oil-static cables and the conductors in the high and low voltage switchyards are included as part of the "Switchyard Bus" component type.

RAI 4.4-1

The FNP LRA, Table 4.4, List of EQ Packages, lists the Electrical Penetration Assemblies in a number of different packages (09B, 09C, 09E, 18 and 42). SNC stated during the Aging Management Program Audit conducted from November 3 to 7, 2003, and confirmed in its letter dated December 5, 2003, NL-03-2418, Enclosure 1, Electrical Question E2, that the 4160 kV power penetrations were not safety related and their electrical connection functions were covered under the Non-EQ Cables and Connections Program. The response did not identify any other non-EQ penetrations in low voltage power control or instrumentation applications. The response also did not address the pressure/ fission product boundary functions of the electrical penetrations.

- A.** Confirm that all electrical penetration assemblies (other than the 4160 Volt power penetrations described in your letter) are included in the different packages listed in Table 4.4 of the LRA.

Response:

Table 4.4 of the LRA only lists EQ penetrations. There are additional electrical penetration assemblies (other than the 4160 V power penetrations) that are not required to meet 10 CFR 50.49 because they do not have safety related circuits passing through them. See our response to RAI 2.4-7 for a detailed explanation of the treatment of EQ and Non-EQ electrical penetrations in the LRA.

RAI 4.4-1

The FNP LRA, Table 4.4, List of EQ Packages, lists the Electrical Penetration Assemblies in a number of different packages (09B, 09C, 09E, 18 and 42). SNC stated during the Aging Management Program Audit conducted from November 3 to 7, 2003, and confirmed in its letter dated December 5, 2003, NL-03-2418, Enclosure 1, Electrical Question E2, that the 4160 kV power penetrations were not safety related and their electrical connection functions were covered under the Non-EQ Cables and Connections Program. The response did not identify any other non-EQ penetrations in low voltage power control or instrumentation applications. The response also did not address the pressure/ fission product boundary functions of the electrical penetrations.

- B.** Identify where the pressure/ fission product boundary functions of the EQ and Non-EQ electrical penetrations assemblies are evaluated and how those functions will be maintained.

Response:

Please see our response to RAI 2.4-7.

RAI 4.4-1

The FNP LRA, Table 4.4, List of EQ Packages, lists the Electrical Penetration Assemblies in a number of different packages (09B, 09C, 09E, 18 and 42). SNC stated during the Aging Management Program Audit conducted from November 3 to 7, 2003, and confirmed in its letter dated December 5, 2003, NL-03-2418, Enclosure 1, Electrical Question E2, that the 4160 kV power penetrations were not safety related and their electrical connection functions were covered under the Non-EQ Cables and Connections Program. The response did not identify any other non-EQ penetrations in low voltage power control or instrumentation applications. The response also did not address the pressure/ fission product boundary functions of the electrical penetrations.

- C.** Confirm that the electrical penetrations assemblies associated with the personnel air locks, if any, are either included in one of the penetration items listed in Table 4.4 of the LRA or provide an evaluation that addresses the License Renewal requirements.

Response:

Electrical penetrations associated with the personnel air locks are in the LRA scope but not included in the FNP EQ program. Please see our response to RAI 2.4-7 for a detailed explanation of the treatment of EQ and Non-EQ electrical penetrations in the LRA.

ENCLOSURE 2

Joseph M. Farley Nuclear Plant Units 1 and 2

Application for License Renewal

Clarification to SNC Response to RAI 2.1-2

RAI 2.1-2

Quality Assurance Program Attributes in Appendix A, "Updated Safety Analysis Report (USAR) Supplement," and Appendix B, "Aging Management Activities"

The NRC staff reviewed the applicant's aging management programs described in Appendix A, "Final Safety Analysis Report (USAR) Supplement," and Appendix B, "Aging Management Activities," of the Joseph M. Farley license renewal application. The purpose of this review was to assure that the aging management activities were consistent with the staff's guidance described in NUREG-1800, Section A.2, "Quality Assurance for Aging Management Programs (Branch Technical Position IQMB-1)," regarding quality assurance attributes of aging management programs.

Based on the staff's evaluation, the quality attributes (corrective action, confirmation process, and administrative controls) described in Appendix B, Section B1.3, "Quality Assurance Program and Administrative Controls," of the LRA for all programs credited for managing aging effects were consistent with Branch Technical Position IQMB-1. However, the applicant has not sufficiently described the AMP quality attributes in Appendix A, "Final Safety Analysis Report Supplement." The staff requests that the applicant supplement the information provided in the Appendix A to include a description of the quality assurance program attributes, including references to pertinent implementing guidance as necessary, which are credited for the programs to manage aging effects described in Appendix A and Appendix B of the LRA. The description in Appendix A should provide sufficient information for the staff to determine if the quality attributes for the programs credited with managing aging effects are consistent with the review acceptance criteria contained in NUREG-1800, Section A.2, "Quality Assurance for Aging Management Programs (Branch Technical Position IQMB-1)."

Response (Clarification)

The FSAR section (Appendix A) will be updated to include the following information regarding the applicability of the FNP Quality Assurance Program to the aging management process for in-scope systems, structures and components:

The FNP Operations Quality Assurance Program will apply the quality assurance criteria of 10 CFR 50, Appendix B to the elements of corrective actions, confirmation process, and administrative controls for the aging management program activities and implementing documents during the period of extended operation. These criteria will be applied to all safety-related and non safety-related structures and components that perform an intended function for license renewal.