

February 10, 2004

LICENSEE: Southern Nuclear Operating Company  
FACILITY: Joseph M. Farley Nuclear Plant, Units 1 and 2  
SUBJECT: SUMMARY OF DECEMBER 11, 2003 AND JANUARY 22, 2004 TELEPHONE CONFERENCES BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND THE SOUTHERN NUCLEAR OPERATING COMPANY CONCERNING DRAFT REQUESTS FOR ADDITIONAL INFORMATION ON JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2, LICENSE RENEWAL APPLICATION (TAC NOS. MC0774 AND MC0775)

The U.S. Nuclear Regulatory Commission staff and representatives of Southern Nuclear Operating Company (SNC or the applicant) held a telephone conference on December 11, 2003, and a follow-up telephone conference on January 22, 2004, to discuss the draft requests for additional information (D-RAIs) concerning the Joseph M. Farley Nuclear Plant (FNP) license renewal application.

The conference calls were useful in clarifying the intent of the staff's D-RAIs. On the basis of the discussion, the applicant was able to better understand the staff's questions. No staff decisions were made during the conference calls. In some cases, the applicant agreed to provide information for clarification.

Enclosure 1 provides a list of the telephone conference participants. Enclosure 2 contains a listing of the D-RAIs discussed with the applicant, including a brief description on the status of the items. The applicant has had an opportunity to review and comment on this summary.

*/RA/*

Tilda Y. Liu, Project Manager  
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

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License Renewal Section A  
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RLEP RF  
T. Liu (PM)  
K. Martin  
H. Ashar  
D. Jeng  
J. Fair

**E-MAIL:**

PUBLIC  
J. Craig  
D. Matthews  
F. Gillespie  
C. Grimes  
RidsNrrDe  
E. Imbro  
G. Bagchi  
K. Manoly  
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J. Calvo  
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C. Li  
J. Moore  
R. Weisman  
M. Mayfield  
A. Murphy  
S. Smith (srs3)  
S. Duraiswamy  
Y. L. (Renee) Li  
RLEP Staff  
-----  
C. Julian (R-II)  
C. Patterson (R-II)  
R. Fanner (R-II)  
D. Cummings (OGC)  
J. Cushing  
OPA  
B. Jain  
L. Whitney  
R. Pichumani

**LIST OF PARTICIPANTS FOR TELEPHONE CONFERENCE ON  
DRAFT REQUESTS FOR ADDITIONAL INFORMATION**

**December 11, 2003**

<b><u>Participants</u></b>	<b><u>Affiliation</u></b>
Hans Ashar	NRC
John Fair	NRC
Tilda Liu	NRC
Kamishan Martin	NRC
Raman Pichumani	NRC
William P. Evans	SNC
Jan E. Fridrichsen	SNC
Partha Ghosal	SNC
Jon E. Hornbuckle	SNC
Michael A. Macfarlane	SNC
Charles R. Pierce	SNC
David Gerber	Structural Integrity Associates
Tim Gillman	Structural Integrity Associates
Gary Stevens	Structural Integrity Associates

**January 22, 2004**

<b><u>Participants</u></b>	<b><u>Affiliation</u></b>
Tilda Liu	NRC
David Jeng	NRC
Hans Ashar	NRC
Jan E. Fridrichsen	SNC
Louis Bohn	SNC
Michael Macfarlane	SNC
Partha Ghosal	SNC

## REVIEW OF LICENSE RENEWAL APPLICATION (LRA) FOR FARLEY UNITS 1 AND 2 DRAFT REQUESTS FOR ADDITIONAL INFORMATION (D-RAIs)

### Section 4.3.1: Fatigue of ASME Class 1 Components

#### D-RAI 4.3.1-1

Table 4.3.1 of the LRA provides the current cycle counts and estimated cycle counts at 60 years of plant operation for transients used in the design of Class 1 components. Note 5 of the table indicates that step load change transients were not counted prior to the installation of fatigue monitoring software, and that the number of these prior transients would be estimated using the current fatigue monitoring software. Describe the method that will be used to estimate the number of transient cycles that occurred prior to the installation of the fatigue monitoring software. Provide a list of the transients that will be monitored by the fatigue monitoring program.

**Response:** The applicant stated that it will provide the information requested by the staff. The applicant indicated that the question is clear.

#### D-RAI 4.3.1-2

The Westinghouse Owners Group issued Topical Report WCAP-14577, Revision 1-A, "Aging Management for Reactor Internals," to address the aging management of the reactor vessel internals. Section 2.3.1 of the LRA indicates that WCAP-14577, Revision 1-A was reviewed as a source of input information for FNP. The staff's review of WCAP-14577, Revision 1-A identified a number of issues that should be addressed on a plant specific basis. Renewal Applicant Action Item 11 specified in WCAP-14577, Revision 1-A indicates that the fatigue TLAA of the reactor vessel internals should be addressed on a plant specific basis. Discuss the design basis for the components listed in Table 3-3 of WCAP-14577, Revision 1-A. Indicate how fatigue of these components is managed.

**Response:** The applicant indicated that the question is clear.

#### D-RAI 4.3.1-3

The Westinghouse Owners Group has issued the generic Topical Report WCAP-14574-A to address aging management of pressurizers. Section 2.3.1 of the LRA indicates that WCAP-14577, Revision 1-A was reviewed as a source of input information for floating nuclear plant (FNP). The staff's review of WCAP-14574-A identified a number of issues that should be addressed on a plant specific basis. Renewal Applicant Action Item 1 requests the applicant to demonstrate that the pressurizer sub-component CUFs remain below 1.0 for the period of extended operation. Table 2-10 of WCAP-14574-A indicates that the American Society of Mechanical Engineers (ASME) Section III Class 1 fatigue cumulative usage factor (CUF) criterion could be exceeded at several pressurizer sub-component locations during the period of extended operation. WCAP-14574-A also identified recent unanticipated transients that were not considered in the original ASME Section III Class 1 fatigue analyses, including inflow/outflow thermal transients. Provide the following information:

- a. Confirm that the additional transients discussed in WCAP-14574-A, are not considered in the original design, have been addressed at FNP.
- b. Show the ASME Section III Class 1 current licensing basis (CLB) CUFs for the applicable sub-components of the FNP pressurizers specified in Table 2-10 of WCAP-14574-A and the corresponding CUFs for the extended period of operation.
- c. Discuss the impact of the environmental fatigue correlations provided in NUREG/CR-6583, "Effects of LWR Coolant Environments on Fatigue Design Curves of Carbon and Low-Alloy Steels," and NUREG/CR-5704, "Effects of LWR Coolant Environments on Fatigue Design Curves of Austenitic Stainless Steels," on the above results.

**Response:** The applicant indicated that the question is clear.

#### D-RAI 4.3.1-4

Section 4.3.1 of the LRA indicates that the fatigue usage for the surge line is not expected to exceed 1.0 during the period of extended operation. The LRA also indicates that stress based fatigue monitoring software was used to analyze the fatigue usage of the surge line hot leg nozzle. Describe the stress based fatigue monitoring of the surge line hot leg nozzle. Indicate whether there were any changes in the plant operations since the startup of Units 1 and 2 that could affect the fatigue usage of the surge line hot leg nozzle. Provide a copy of Reference 11.

**Response:** The applicant will check with Structural Integrity Associates before considering submittal of Reference 11. The applicant indicated that the question is clear.

#### **Section 4.3.3: Fatigue of ASME Non-Class 1 Components**

##### D-RAI 4.3.3-1

Section 4.3.3 of the LRA indicates that the number of thermal cycles for the emergency diesel generator (EDG) air start subsystem may exceed 7,000 during the period of extended operation. The LRA also indicates that the equivalent number of full-temperature cycles will be less than 7,000 cycles. Describe the method used to calculate the equivalent number of full-temperature cycles.

**Response:** The applicant indicated that the question is clear.

#### **Section 4.3.4 Containment Tendon Pre-Stress**

##### D-RAI 4.3.4-1

10 CFR 54.21(c)(1)(ii) requires that the applicant demonstrate the adequacy of the analysis projected for the extended period of operation. In order for the staff to make a reasonable assurance conclusion, the applicant is requested to provide the following information:

- a. Minimum required pre-stressing forces for each group of tendons;

- b. A tabulation of measured pre-stressing forces (non-normalized) obtained during the tendon lift-offs performed to-date for each group of tendons;
- c. Trend lines of the projected pre-stressing forces for each group of tendons based on the regression analysis of the measured pre-stressing forces (see NRC Information Notice 99-10 for more information);
- d. Plots showing comparisons of pre-stressing forces projected to the end of the extended period of operation with the minimum required prestress for each group of tendons.

**Response:** The applicant indicated that the question is clear. During a separate teleconference with the applicant on January 22, 2004, the staff indicated that the response to item (b) is not needed because the staff will not be using the information for its review. The formal RAI will not include item (b).

#### D-RAI 4.3.4-2

In Section A.4.3 in the updated final safety analysis report (UFSAR) Supplement of the LRA, the applicant states, "The calculation indicates that acceptable containment pre-stress will continue to exist throughout the extended period of operation." In order for the summary to be meaningful, as a minimum, the applicant should provide a Table showing the minimum required pre-stressing forces and the projected (to 60 years) pre-stressing forces for each group of tendons which would demonstrate the validity of the analysis results. The applicant is requested to supplement this information in Section A.4.3 of the UFSAR Supplement.

**Response:** During the teleconference held on December 11, 2003, the applicant did not agree to include the information in the UFSAR supplement. The applicant stated the request was beyond the required level of detail for the UFSAR Supplement and that it would review how other prior applicants handled this area to determine its position as to whether or not the UFSAR Supplement will be included. During a separate teleconference with the applicant on January 22, 2004, the applicant stated that it will place the sought information in the "Administrative Procedure" part of the plant technical specification (TS) and reference the TS in the UFSAR Supplement.

#### **Section 4.5.1: Ultimate Heat Sink Silting**

##### D-RAI 4.5.1-1

Section 4.5.1 "Ultimate Heat Sink Silting" of the FNP License Renewal Application states that you have updated the design calculations pertaining to the surveillance of the Ultimate Heat Sink (UHS) silting problem. You have stated further that this update addresses the UHS silting issue for the additional 20 years of operations in the extended term in accordance with 10 CFR 54.21(c)(1)(ii). In order to complete the review of the UHS silting issue at FNP site, the staff needs the following additional information:

- a. Provide the details of the ultimate heat sink (UHS) surveillance program including the actual (periodic) measurements of silting in the past and the projected rate of silting in the future at FNP.

- b. Provide the updated calculations to show that the UHS will perform its intended function for the extended period of 20 years of operation of the Farley Nuclear Plant.

**Response:** SNC agreed to provide the calculations to staff for review. The applicant indicated that the question is clear.

Joseph M. Farley Nuclear Plant

cc:

Mr. Don E. Grissette  
General Manager - Plant Farley  
Southern Nuclear Operating Company  
Post Office Box 470  
Ashford, AL 36312

Mr. B. D. McKinney  
Licensing Manager  
Southern Nuclear Operating Company  
40 Inverness Center Parkway  
Post Office Box 1295  
Birmingham, AL 35201-1295

Mr. Stanford M. Blanton, esq.  
Balch and Bingham Law Firm  
Post Office Box 306  
1710 Sixth Avenue North  
Birmingham, AL 35201

Mr. J. B. Beasley, Jr.  
Executive Vice President  
Southern Nuclear Operating Company  
40 Inverness Center Parkway  
Post Office Box 1295  
Birmingham, AL 35201

Dr. D. E. Williamson  
State Health Officer  
Alabama Department of Public Health  
The RSA Tower  
201 Monroe Street, Suite 1500  
Montgomery, AL 36130-1701

Chairman  
Houston County Commission  
Post Office Box 6406  
Dothan, AL 36302

Mr. William D. Oldfield  
SAER Supervisor  
Southern Nuclear Operating Company  
Post Office Box 470  
Ashford, AL 36312

Mr. Charles R. Pierce  
Manager - License Renewal  
Southern Nuclear Operating Company  
40 Inverness Center Parkway  
Post Office Box 1295  
Birmingham, AL 35201

Mr. Fred Emerson  
Nuclear Energy Institute  
1776 I Street, NW, Suite 400  
Washington, DC 20006-3708

Resident Inspector  
U.S. Nuclear Regulatory Commission  
7388 N. State Highway 95  
Columbia, AL 36319

Mr. L. M. Stinson, Jr.  
Vice President - Farley Project  
Southern Nuclear Operating Company  
40 Inverness Center Parkway  
Post Office Box 1295  
Birmingham, AL 35201