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SOUTHERN COMPANY
Energy to Serve Your World℠

March 5, 2004

NL-04-0344

Docket Nos.: 50-348
50-364

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

Joseph M. Farley Nuclear Plant
Response to Request for Additional Information (RAI) on Relief Request RR-53 –
Use of Alternate Code Case for
New Construction of Replacement Reactor Vessel Head Adapters

Ladies and Gentlemen:

In accordance with 10 CFR 50.55a, on December 19, 2003, Southern Nuclear Operating Company (SNC) requested NRC approval for relief request RR-53 for Farley Units 1 and 2, which would allow use of the design stress intensity values of Code Case N-698.

On February 17, 2004, the NRC issued a RAI to support review of RR-53. The text of the NRC RAI is included in Enclosure 1, along with SNC's response. Enclosure 2 provides a copy of Code Case N-698.

SNC requests NRC approval of RR-53 by May 14, 2004 in order to support reactor vessel head replacement during the Farley Nuclear Plant Unit 1 maintenance / refueling outage scheduled to begin in the fall of 2004 (1R19).

This letter contains no NRC commitments. If you have any questions, please advise.

Sincerely,

L. M. Stinson

LMS/DWD/sdl

Enclosures: 1. NRC RAI and SNC Response
2. Code Case N-698

A047

cc: Southern Nuclear Operating Company
Mr. J. B. Beasley, Jr., Executive Vice President
Ms. C. D. Collins, General Manager - Farley
Mr. D. E. Grissette, General Manager - Plant Farley
RTYPE: CFA04.054; LC# 13972

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

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Enclosure 1

NRC RAI

The Nuclear Regulatory Commission (NRC) staff has reviewed the licensee's submittal dated December 19, 2003, regarding use the design stress intensity values of Code Case N-698 for the new construction of replacement reactor vessel head adapters at Farley Nuclear Plant, Units 1 and 2. The NRC staff has identified the following information that is needed to enable the continuation of its review.

The relief request states that, "Based on evaluation of hot-worked UNS N06690 SB-167, Code Case N-698 adjusts the yield strength values for hot-worked UNS N06690 to the evaluated value of 35 ksi minimum and provides associated design stress intensity values that coincide with those of Section II, Part D, Subpart 1 of the 1999 addenda." The request also states that, "The design stress intensities and yield strength of Code Case N-474-2 were incorporated into the 1999 agenda." However, your request does not state the design stress intensities values for hot-worked UNS N06690 tubing that you propose to use in the fabrication of the replacement reactor vessel head. Provide a copy of the pending Code Case N-698 and state the design stress intensity values for the proposed hot-worked UNS N06690 tubing material. These values are needed for the NRC staff to determine whether the proposed stress intensity values are appropriate for the material identified in the relief request.

SNC Response

The design stress intensity values for the hot-worked UNS N06690 tubing to be used in the fabrication of the replacement reactor vessel heads for the Farley units are 23.3 ksi for all temperatures, as cited in Table 1 of Code Case N-698 (see Enclosure 2).

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Enclosure 2

Code Case N-698

Approval Date: November 18, 2003
Expiration Date: November 18, 2006

Case N-698
Design Stress Intensities and Yield Strength Values for UNS N06690 With a Minimum Specified Yield Strength of 35 ksi (240 MPa), Class 1 Components
Section III, Division 1

Inquiry: Is it permissible in the construction of Class 1 components conforming to the requirements of Section III, Division 1, to use a nickel-chromium-iron UNS N06690 hot-worked and annealed condition with minimum yield strength of 35 ksi (240 MPa) otherwise conforming to material Specification SB-167?

Reply: It is the opinion of the Committee that the material specified in the Inquiry may be used in the construction of Class 1 components under the rules of Section III, Division 1, provided the following additional requirements are met.

(a) The design stress intensity and yield strength values shall be as shown in Table 1.

(b) The outer diameter is equal to or less than NPS 5 (DN 125).

TABLE 1
DESIGN STRESS INTENSITY AND YIELD STRENGTH VALUES

Temperature °F	Design Stress Intensity Values, S_m ksi (MPa)	Yield Strength, ksi (MPa)
100	23.3 (161.5)	35.0 (240.0)
200	23.3 (161.5)	31.6 (216.2)
300	23.3 (161.5)	29.8 (204.0)
400	23.3 (161.5)	28.7 (198.5)
500	23.3 (161.5)	27.8 (193.0)
600	23.3 (161.5)	27.6 (191.0)
700	23.3 (161.5)	27.6 (191.0)
800	23.3 (161.5)	27.6 (191.0)

(c) For external pressure the required thickness shall be determined in accordance with NB-3133 using Fig. NFN-4 in Section II, Part D, Subpart 3.

(d) Welding procedures and performance qualification shall be in accordance with Section IX and this Code Case. The material shall be considered to be P-No. 43.

(e) This Case number shall be shown on the Data Report for the component and the marking and certification of the material.