

April 17, 1998

Mr. D. N. Morey
Vice President - Farley Project
Southern Nuclear Operating
Company, Inc.
Post Office Box 1295
Birmingham, Alabama 35201-1295

SUBJECT: ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT
REGARDING POWER UPRATE - JOSEPH M. FARLEY NUCLEAR PLANT, UNITS
1 AND 2 (TAC NOS. M98120 AND M98121)

Dear Mr. Morey:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your application for amendments dated February 14, 1997, as supplemented on June 20, August 5, September 22, November 19, December 9, December 17, and December 31, 1997, January 23, February 12, February 26, March 3, March 6, March 16, April 3, April 13, and two letters on April 17, 1998. The proposed amendments would change the maximum reactor core power level for facility operation from 2652 megawatts-thermal (MWt) to 2775 MWt for the Joseph M. Farley Nuclear Plant, Units 1 and 2.

The assessment is being forwarded to the Office of the Federal Register for publication.

Sincerely,
ORIGINAL SIGNED BY:
Jacob I. Zimmerman, Project Manager
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-348 and 50-364

Enclosure: Environmental Assessment

cc w/encl: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

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A handwritten signature in cursive script that reads "Jacob I. Zimmerman".

Jacob I. Zimmerman, Project Manager
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-348 and 50-364

Enclosure: Environmental Assessment

cc w/encl: See next page

Joseph M. Farley Nuclear Plant

cc:

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UNITED STATES NUCLEAR REGULATORY COMMISSION

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

ALABAMA POWER COMPANY

DOCKET NOS. 50-348 AND 50-364

JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2

ENVIRONMENTAL ASSESSMENT AND FINDING OF

NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of amendments to Facility Operating License Nos. NPF-2 and NPF-8, issued to Southern Nuclear Operating Company, Inc. (SNC), et al. (the licensee), for operation of the Joseph M. Farley Nuclear Plant, Units 1 and 2, located in Houston County, Alabama.

ENVIRONMENTAL ASSESSMENT

Identification of the Proposed Action:

The proposed action would allow SNC to increase the maximum reactor core power level for facility operation from 2652 megawatts-thermal (MWt) to 2775 MWt, which is approximately a 4.6 percent increase in rated core power.

The proposed action is in accordance with SNC's application for amendments dated February 14, 1997, as supplemented by letters dated June 20, August 5, September 22, November 19, December 9, December 17, and December 31, 1997, January 23, February 12, February 26, March 3, March 6, March 16, April 3, April 13, and two letters on April 17, 1998.

The Need for the Proposed Action:

The proposed action is needed to allow SNC to increase the electrical output of each Farley unit by approximately 25 megawatts-electric and, thus, provide additional electrical power to service domestic and commercial areas of the licensee's grid.

Environmental Impacts of the Proposed Action:

The Commission has completed its evaluation of the proposed action and concludes that no significant change in the environmental impact can be expected for the proposed increase in power.

The original Final Environmental Statement (FES) considered a maximum thermal output of 2774 MWt for each Farley unit. The proposed power uprate will increase the maximum thermal output to 2775 MWt, which represents 0.036 percent increase over the original FES. The staff considers this increase over that previously assessed in the FES to be of minimal impact.

As part of the Farley power uprate review, SNC performed and completed an environmental impact evaluation in January 1997, as required by Section 3.1 of the Farley Nuclear Plant Environmental Protection Plan (EPP). Section 3.1 requires that the licensee prepare and record an evaluation of activities that may significantly affect the environment and determine if an unreviewed environmental question exists prior to engaging in additional construction or operational activities. SNC compared the proposed power uprate values and the values in the FES, June 1972, and the current operating conditions in order to assess environmental impact. This evaluation identified discrepancies between the current cooling tower operating parameters and the original design parameters, upon which the conclusions of

the FES, June 1972, are based. An administrative noncompliance with Section 3.1 of the EPP was identified and reported in the 1996 Annual Environmental Operating Report. The staff's review of SNC's evaluation of environmental impacts is discussed below.

Radiological Environmental Assessment:

SNC evaluated the impact of the proposed power uprate amendments to show that the applicable regulatory acceptance criteria relative to radiological environmental impacts will continue to be satisfied for the uprated power conditions. In conducting this evaluation, SNC considered the effect of the higher power level on source terms, onsite and offsite doses, and control room habitability during both normal operation and accident conditions.

The solid, liquid, and gaseous radwaste activity is influenced by the reactor coolant activity, which is a function of the reactor core power. The licensee performed evaluations of the existing design of the radwaste systems and concluded that plant operations at the proposed uprated power level will not have a significant impact on the radwaste systems.

The licensee performed calculations of the anticipated offsite releases at the proposed power uprate of 2775 MWt. The results of these calculations were then utilized to evaluate conformance with 10 CFR Part 20 and Appendix I of 10 CFR Part 50. The licensee concluded that there exists sufficient radwaste equipment to maintain releases within the limits of 10 CFR Part 20, Appendix B and the resulting offsite doses to the most exposed individual meet the limits of Appendix I of 10 CFR Part 50 and docket RM-50-2. Consequently, the licensee concluded that the power uprate requires no changes to the radwaste system design and/or operation and that no significant changes in actual offsite gaseous and liquid releases and doses are expected. The staff reviewed the licensee's assessment and concluded that the power uprate would have a small impact upon the quantity of offsite releases. The staff also concluded, based upon past plant effluent release reports, that the existing radwaste equipment

should be sufficient to maintain offsite releases within the requirements of Appendix B to 10 CFR Part 20 and Appendix I to 10 CFR Part 50.

SNC has concluded that no changes or additions to structures, equipment, or procedures are necessary to provide adequate radiation protection for the operators and for the public during normal or post-accident operations to support the uprate. The existing structures, systems, and components can safely handle the changes in post-accident source terms and releases from the uprate conditions, and resulting onsite and offsite doses are less than the guidelines in 10 CFR 100.11 and are within the Standard Review Plan guidelines.

The staff has assessed those accidents for which the power uprate would have an impact upon the offsite and control room operator doses contained in Chapter 15 of the Final Safety Analysis Report. The staff's results demonstrate that, for those accidents that are impacted by the power uprate, the doses would not exceed the dose guidelines presently contained in the Standard Review Plan, 10 CFR Part 100 or General Design Criterion 19 of 10 CFR Part 50, Appendix A for either offsite locations or control room operators. Therefore, the staff finds there are no significant adverse impacts on the environment.

The change will not increase the probability or consequences of accidents or normal effluents, no changes are being made in the types of any effluents that may be released offsite, and there is no significant increase in the allowable individual or cumulative occupational radiation exposure. Accordingly, the Commission concludes that there are no significant radiological environmental impacts associated with the proposed action.

Nonradiological Environmental Assessment:

The proposed power uprate will result in an increase in cooling tower duty of approximately 381 MMBtu/hr over the current operating condition, with a corresponding increase in evaporation, makeup, and cooling tower blowdown temperature. The power uprate

will result in an increase in cooling tower blowdown temperature of approximately 0.2°F over the current operating condition. This increase in discharge temperature from 96.4°F to 96.6°F will produce an increase in river temperature of approximately 0.56°F above ambient river temperature during extreme temperature and flow conditions. The FES concluded that the approximately 0.5°F increase in river temperature associated with operation of Farley at extreme temperature and flow conditions did not result in significant adverse environmental impact. SNC concluded that the additional heat load to the Chattahoochee River associated with power uprate does not significantly impact the conclusions of the FES relative to thermal impact. Cooling tower makeup, which comes from the service water pond, has increased from 17,077 gallons per minute (gpm) to 18,093 gpm. This represents an approximate 1.6 percent increase over the FES value of 17,800 gpm. This corresponds to a increase in river water withdrawal for both units from 67,504 gpm to 69,536 gpm, which is bounded by the two-unit river water withdrawal of 90,000 gpm in the FES. Cooling tower evaporation has increased from 12,808 gpm to 13,570 gpm. This represents an approximate 20 percent increase over the FES value of 11,340 gpm and approximately a 6 percent increase over the present operating condition. The FES concluded that the potential for fogging associated with cooling tower operation was not significant and should merely augment the normal fogging situation by a relatively small amount. SNC has stated that studies conducted during the first year of operation confirmed this conclusion. No fogging problems have been noted to date and no significant impact associated with fogging is expected for the uprated condition. The staff expects that operation of the plant at uprated condition will result in only a minimal increase in the natural fog over that discussed in the FES. Cooling tower flowrate (692,000 gpm) does not change as a result of power uprate. However, the flowrate is approximately 9 percent higher than the FES value (635,000 gpm). This increase was a result of pump modifications to

improve efficiency. Cooling tower drift, which is a function of flowrate, also does not change. SNC uses a chemical treatment program for the cooling towers in order to minimize microbial and fungal attacks. The bulk water is sampled for microbiological activity on a periodic basis to evaluate the effectiveness of the program. SNC has stated that no environmental problems associated with microorganisms have been noted since the beginning of plant operation. In addition, the effects of airborne pathogens in the cooling towers has been reviewed and a program is in place to ensure protection of workers performing work in the cooling towers. The change in heat load to the cooling towers associated with power uprate is not expected to have significant impact relative to environmental effects from microorganisms or airborne organisms.

In addition to the FES, SNC evaluated the thermal impact associated with power uprate relative to the Farley Nuclear Plant National Pollutant Discharge Elimination System (NPDES) permit issued by the Alabama Department of Environmental Management. A renewed permit was issued in 1995 based on a 1990 thermal study conducted in support of the renewal, and contains no limits for temperature. The slight increase in final discharge falls within the acceptance range determined in the 1990 study. No additional monitoring requirements or other changes relative to the NPDES permit are required as a result of power uprate. SNC has also indicated that implementation of the power uprate will not require laydown areas that would affect land use, erosion control, endangered species, or historic land sites.

SNC has concluded that, with the exception of the parameters mentioned above, the operating parameters evaluated with regard to potential for environmental impact associated with power uprate either retain the same values as the original values in the FES or are bounded by those values and do not result in significant adverse environmental impact.

With regard to potential nonradiological impacts, the proposed action does involve features located entirely within the restricted area as defined in 10 CFR Part 20. It does not

affect nonradiological plant effluents and has no other environmental impact. Accordingly, the Commission concludes that there are no significant nonradiological environmental impacts associated with the proposed action.

Alternatives to the Proposed Action:

Since the Commission has concluded there is no measurable environmental impact associated with the proposed action, any alternatives with equal or greater environmental impact need not be evaluated. As an alternative to the proposed action, the staff considered denial of the proposed action. Denial of the application would result in no change in current environmental impacts and would reduce the operational flexibility.

Alternative Use of Resources:

This action does not involve the use of any resources not previously considered in the Final Environmental Statement for the Joseph M. Farley Nuclear Plant, Units 1 and 2.

Agencies and Persons Consulted:

In accordance with its stated policy, on February 26, 1998, the staff consulted with the Alabama State official, Kirk Whatley of the Office of Radiation Control, Alabama Department of Public Health, regarding the environmental impact of the proposed action. The State official had no comments.

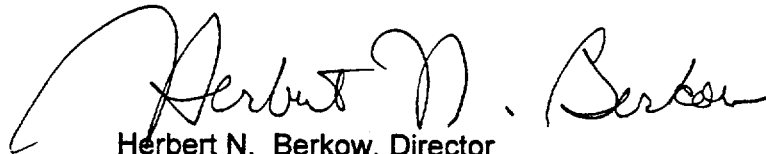
FINDING OF NO SIGNIFICANT IMPACT

Based upon the environmental assessment, the Commission concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the Commission has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's letter dated February 14, 1997, as supplemented on June 20, August 5, September 22, November 19, December 9, December 17, and December 31, 1997, January 23, February 12, February 26, March 3, March 6, March 16, April 3, April 13, and two letters on April 17, 1998, which are available for public inspection at the Commission's Public Document Room, The Gelman Building, 2120 L Street, NW., Washington, DC, and at the local public document room located at the Houston-Love Memorial Library, 212 W. Burdeshaw Street, Post Office Box 1369, Dothan, Alabama.

Dated at Rockville, Maryland, this 17th day of April 1998.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in cursive script that reads "Herbert N. Berkow". The signature is written in black ink and is positioned above the typed name and title.

Herbert N. Berkow, Director
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation