

August 12, 1986

Docket No. 50-395

Mr. D. A. Nauman
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Dear Mr. Nauman:

Subject: Environmental Assessment on Steam Generator Tube Repair Amendment

Re: Virgil C. Summer Nuclear Station, Unit 1

Enclosed is a copy of an "Environmental Assessment and Finding of No Significant Impact for your information. This assessment relates to your application for amendment dated January 16, 1986, as supplemented March 18, May 8, and July 22, 1986.

This assessment has been forwarded to the Office of the Federal Register for publication.

Sincerely,

/s/

Jon B. Hopkins, Project Manger
PWR Project Directorate #2
Division of PWR Licensing-A
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc: See next page

LA:PAD#2
DMiller
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Mr. D. A. Nauman
South Carolina Electric & Gas Company

Virgil C. Summer Nuclear Station

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UNITED STATES NUCLEAR REGULATORY COMMISSION
SOUTH CAROLINA ELECTRIC & GAS COMPANY
SOUTH CAROLINA PUBLIC SERVICE AUTHORITY
VIRGIL C. SUMMER NUCLEAR STATION, UNIT 1
DOCKET NO. 50-395
NOTICE OF ENVIRONMENTAL ASSESSMENT AND FINDING
OF NO SIGNIFICANT IMPACT

The United States Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License No. NPF-12, issued to South Carolina Electric & Gas Company and South Carolina Public Service Authority (the licensees), for operation of the Virgil C. Summer Nuclear Station, Unit 1, located in Fairfield County, South Carolina.

ENVIRONMENTAL ASSESSMENT

Identification of Proposed Action:

The amendment would revise Technical Specification 3/4.4.5, "Steam Generators" and its bases to allow for the repair of steam generator tubes. The licensee's application for amendment was dated January 16, 1986 as supplemented March 18, May 8, and July 22, 1986.

The Need for the Proposed Action:

During the last refueling outage, pure water stress corrosion cracking (PWSCC) was observed in some steam generator tubes and approximately 170 tubes were plugged as a result.

The licensee has pursued an aggressive program to limit the effects of PWSCC. During the last refueling outage, the Westinghouse rotopeening process was applied in the steam generator hot legs. Because of tooling problems, this process was only applied in the central region of the tube sheet. Current plans are to shotpeen the remaining peripheral region during the next refueling outage, if an acceptable process is available. In the interim, it is expected that some cracking may occur in this unpeened region.

Steam generator tube repair is needed to recover some tubes (approximately 71) previously plugged, and to keep from plugging new tubes with indications greater than 40% through the tube wall.

The plugging of steam generator tubes is undesirable because it reduces reactor coolant system flow, increases moisture carry-over in the steam lines, and shortens component life. The application of tube repair processes (e.g., by sleeving, brazing or partial tube replacement) allows the tubes to remain in service, thereby reducing, if not negating, the above mentioned effects. In addition, tube repair capability would allow the plant to maintain margin with respect to the limits assumed in the safety analysis.

Environmental Impacts of the Proposed Action:

The proposed amendment regarding steam generator tube repair would allow imperfect tubes to be returned to their original integrity. Accordingly, accident radiological releases will not be greater than previously determined.

Tube repair produces occupational radiation doses and solid radioactive wastes approximately in the same amount as that incurred by tube plugging. For the 71 tubes currently plugged that could be unplugged and have tube repair

performed, the estimated occupational radiation exposure to unplug and repair the tubes is 12.43 REM, which is less than 1% of the estimated annual occupational radiation exposure contained in the Final Environmental Statement, dated May 1981.

It is estimated that approximately 125 ft³ of solid radioactive waste would be created from unplugging and repairing these 71 tubes. This is less than 2.5% of the estimate for solid radioactive waste shipped annually contained in the Final Environmental Statement.

From the above evaluation of accidents, occupational radiation exposure, and radiological effluents, the Commission concludes that there are no significant radiological environmental impacts associated with granting of the proposed amendment.

With regard to potential non-radiological impacts, the proposed amendment involves systems located entirely within the restricted area as defined in 10 CFR Part 20. It does not affect non-radiological plant effluents and has no other environmental impact. Therefore, the Commission concludes that there are no significant non-radiological environmental impacts associated with the proposed amendment.

Alternatives to the Proposed Action:

Since the Commission has concluded that the environmental effects of the proposed action are not significant, any alternatives with equal or greater environmental impacts need not be evaluated.

The principal alternative would be to deny the requested amendment. This would not reduce the environmental impacts associated with correction of steam generator tube imperfections and would result in reduced reactor coolant system flow, potentially leading to derating of the plant.

Alternative Use of Resources:

This action does not involve the use of any resources not previously considered in the "Final Environmental Statement Related to the Operation of Virgil C. Summer Nuclear Station, Unit 1" (NUREG-0719), dated May 1981.

Agencies and Persons Consulted:

The NRC staff reviewed the licensee's request and did not consult other agencies or persons.

FINDING OF NO SIGNIFICANT IMPACT

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

For further details with respect to this action, see the request for amendment dated January 16, 1986, as supplemented March 18, May 8, and July 22, 1986, which is available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C., and at the Fairfield County Library, Garden and Washington Streets, Winnsboro, South Carolina 29810.

Dated at Bethesda, Maryland this 12th day of August, 1986.

FOR THE NUCLEAR REGULATORY COMMISSION



Lester S. Rubenstein, Director
PWR Project Directorate #2
Division of PWR Licensing-A
Office of Nuclear Reactor Regulation