

UNITED STATES NUCLEAR REGULATORY COMMISSION

SOUTH CAROLINA ELECTRIC & GAS COMPANY

SOUTH CAROLINA PUBLIC SERVICE AUTHORITY

DOCKET NO. 50-395

VIRGIL C. SUMMER NUCLEAR STATION, UNIT NO. 1

ENVIRONMENTAL ASSESSMENT AND FINDING OF

NO SIGNIFICANT IMPACT

The U.S. 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 licensee), for operation of the Virgil C. Summer Nuclear Station, Unit No. 1 (VCSNS), located in Fairfield County, South Carolina.

ENVIRONMENTAL ASSESSMENT

Identification of the Proposed Action:

The proposed action would allow the licensee to increase allowed core power level from 2775 Megawatts thermal (MWt) to 2900 MWt which is a 4.5% increase in rated core power.

The proposed action is in accordance with the licensee's application for amendment dated August 18, 1995, as supplemented on November 1, 1995, February 14, March 14 (there are two supplemental letters dated March 14), and March 25, 1996.

The Need for the Proposed Action:

The proposed action is needed to allow the licensee to increase the electrical output of VCSNS by approximately 64 MW and thus provide additional electrical power to the grid which serves commercial and domestic areas in the State of South Carolina.

Environmental Impacts of the Proposed Action:

The Commission has completed its evaluation of the proposed action and concludes that a slight change in the environmental impact can be expected for the proposed increase in power. The proposed core uprate is projected to increase the heat rejected to the environment by approximately 3 percent to a maximum of 6.4 ( $10^9$ ) British thermal units per hour (Btu/hr).

In the Final Environmental Statement (FES) related to the operation of Virgil C. Summer Nuclear Station, Unit No. 1 (NUREG-0719), the staff evaluated a heat rejection rate of 6.7 ( $10^9$ ) Btu/hr. Thus, the additional thermal rejection resulting from the power uprate is bounded by the heat rejection rate evaluated and found acceptable in the FES.

Additionally, the licensee stated they will not exceed the 113°F maximum circulating water discharge temperature as specified in their National Pollutant Discharge Elimination System (NPDES) permit. The licensee has administrative procedures in place to reduce power as necessary to ensure the temperature limit is not exceeded. Also, to limit the heat load rejected to the Monticello Reservoir, the licensee will be installing a closed cycle cooling water system that will reject heat to the atmosphere via a mechanical draft cooling tower. The total circulating water system flow rate is predicted to decrease slightly (from approximately 538,000 gallons per minute (gpm) to approximately 530,000 gpm) due to the addition of the cooling tower. Therefore, water velocity at the intake structure will continue to remain below the velocity of 0.5 feet per second that was assumed in the Federal Water Pollution Control Act, Section 316(b), entrainment and impingement study performed by the licensee for initial plant licensing.

The licensee also concluded that the increased heat load rejected to the Monticello Reservoir will not cause the thermal component of the effluent to exceed the NPDES condition for maximum surface temperature or maximum plume temperature rise.

The heatload rejected by the cooling tower was calculated by the licensee to be 60.66 MBtu/hr at 100% capacity. The cooling tower effluents, including salt drift and chemical discharges, have been determined by the licensee to have a negligible effect on all VCSNS structures and systems. The dispersant and anti-fouling chemicals added to the cooling tower raw water will be sufficiently diluted to preclude any significant environmental impact. Limits on the release of these chemicals will be determined by the South Carolina Department of Health and Environmental Control, and will be included in the licensee's NPDES permit. Since circulating water flow is critical for adequate dilution, the licensee will establish procedures to control the release of these chemicals. The required controls are listed in the licensee's March 25, 1996 letter. The cooling tower will be constructed outside the protected area fence in an empty field at the northwest corner of the site. Any environmental effects of the cooling tower construction will be confined to onsite areas previously disturbed during initial plant construction.

The staff previously evaluated the radiological impact of operating at 2900 Mwt in a November 18, 1994 safety evaluation (SE) supporting issuance of License Amendment No. 119. This amendment was requested to support the licensee's steam generator (SG) replacement project. The majority of the licensee's SG replacement analyses were written for the planned uprate power of 2900 Mwt. The staff discussed the radiological considerations of operation

at the uprated power in Section 2.5 of the SE. The staff concluded that "...the doses would not exceed the dose guidelines presently contained in the Standard Review Plans, 10 CFR Part 100 or GDC 19 of 10 CFR Part 50, Appendix A for either offsite locations or control room operators." Therefore, the radiological consequences of the proposed uprate have been previously evaluated by the staff.

The uprate conditions will also result in storage of spent fuel with a higher irradiation. By letter dated, December 13, 1993, as supplemented February 2, and March 11, 1994, the licensee requested a license amendment to allow the use and subsequent storage of fuel with an initial enrichment to 5.0 weight percent Uranium-235. This request was made, in part, to support the core power uprate to 2900 MWt. On August 15, 1994, (59 FR 41799) the staff published its "Environmental Assessment and Finding of No Significant Impact," which concluded the proposed action will not have a significant effect on the quality of the human environment. Therefore, the environmental impacts of this aspect of the licensee's power uprate proposal has been previously evaluated by the Commission.

The change will not increase the probability or consequences of accidents, 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.

Except for heat load, which is bounded by previous analysis as discussed above, the amendment does not significantly 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 significant 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. The environmental impacts of the proposed action and the alternative action are similar.

Alternative Use of Resources:

This action does not involve the use of any resources not previously considered in the Final Environmental Statement for the Virgil C. Summer Nuclear Station, Unit 1.

Agencies and Persons Consulted:

In accordance with its stated policy, on February 26, 1996, the staff consulted with the South Carolina State official, Mr. Virgil Autry of the Bureau of Solid and Hazardous Waste Management, Department of Health and Environmental Control, 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 letters dated August 18, 1995, as supplemented on November 1, 1995 February 14, March 14 (the licensee submitted two supplemental letters dated March 14, 1996) and March 25, 1996, 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 Fairfield County Library, 300 Washington Street, Winnsboro, SC.

Dated at Rockville, Maryland, this 8th day of April 1996.

FOR THE NUCLEAR REGULATORY COMMISSION



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