

September 30, 88

Docket No. 50-327

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Mr. S. A. White  
Senior Vice President, Nuclear Power  
Tennessee Valley Authority  
6N 38A Lookout Place  
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Chattanooga, Tennessee 37402-2801

Dear Mr. White:

SUBJECT: ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT FOR  
A TEMPORARY EXEMPTION FROM 10 CFR PART 50, SECTION 50.46(a)(1) -  
SEQUOYAH NUCLEAR PLANT, UNIT 1

Enclosed is a copy of an "Environmental Assessment and Finding of No Significant Impact" related to your September 19, 1988 request for a temporary exemption from Section 50.46(a)(1) to 10 CFR Part 50. The exemption pertains to the requirements for a plant-specific calculated Emergency Core Cooling System (ECCS) cooling performance with an approved Upper Head Injection calculation model. The temporary exemption is requested until approved plant-specific calculations are submitted to NRC for Unit 1 but no later than May 31, 1989. The Assessment has been forwarded to the Office of the Federal Register for publication.

Sincerely,

Original signed by  
Suzanne Black, Assistant Director  
for Projects  
TVA Projects Division  
Office of Special Projects

Enclosure:  
As stated

cc w/enclosure:  
See next page

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Mr. S. A. White

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Sequoyah Nuclear Plant

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UNITED STATES NUCLEAR REGULATORY COMMISSIONTENNESSEE VALLEY AUTHORITYDOCKET NO. 50-327ENVIRONMENTAL ASSESSMENT AND  
FINDING OF NO SIGNIFICANT IMPACT

The U. S. Nuclear Regulatory Commission (the Commission) is considering issuance of a temporary exemption from the requirements of Section 50.46(a)(1) to 10 CFR Part 50 to the Tennessee Valley Authority (the licensee) for the Sequoyah Nuclear Plant, Unit 1. The unit is located at the licensee's site in Hamilton County, Tennessee. The exemption was requested by the licensee in its letter dated September 19, 1988.

ENVIRONMENTAL ASSESSMENT

Identification of Proposed Action: The exemption would allow the licensee a temporary relief from the provisions of 50.46(a)(1) with respect to the requirement that the Emergency Core Cooling System (ECCS) cooling performance be calculated on a plant specific basis using an approved ECCS evaluation model. The current calculated ECCS performance including the approved Upper Head Injection (UHI) Calculation Model for the facility, as referenced in Section 15.4 of the Sequoyah Final Safety Analysis Report (FSAR), is not based on the actual operating conditions for the facility and there are corrections needed to the UHI calculation model. The temporary relief would allow continued operation of Sequoyah Unit 1 until a revised calculated ECCS cooling performance has been completed using an approved ECCS model and actual facility operating conditions, but not later than May 31, 1989. During the duration of the

temporary relief granted by the exemption the heat flux hot channel factor,  $F_Q$ , will be limited to a value of 2.15 as compared to the value of 2.237 in the Sequoyah Unit 1 Technical Specifications.

The Need For The Proposed Action: The proposed exemption is required to permit the licensee to continue operation of the facility.

Environmental Impacts of the Proposed Action: With respect to the requested exemption, the temporary relief from the above requirement of 10 CFR 50.46(a)(1) would permit the licensee to use evaluations based on sensitivity studies to demonstrate that the calculated peak cladding temperatures (PCTs) remain below the acceptance criterion (2,200°F) of 10 CFR 50.46. Provisions of 10 CFR 50.46(a)(1) require that ECCS performance be calculated with an acceptable calculation model. An Appendix K evaluation using an approved UHI calculation model will not be completed by Westinghouse to support the current Unit 1 restart schedule in October 1988. Therefore, a temporary exemption is needed by the licensee from 10 CFR 50.46(a)(1) until the UHI calculation model analysis can be completed. The licensee states that this will be submitted to NRC not later than May 31, 1989.

The intent of the requirement is to ensure that the PCTs during a postulated accident do not exceed 2,200°F. TVA has submitted the results on calculations with PCT penalties that demonstrate that the limiting PCT resulting from the reduced minimum delivered UHI water volume is below the regulatory limit. Also, the licensee has accepted operating restrictions to provide an additional PCT margin of greater than 100°F. This margin offsets any uncertainties of the licensee's sensitivity studies and ensures compliance with the 10 CFR 50.46 PCT acceptance criterion. Consequently, neither the probability of accidents nor the radiological releases from accidents will be increased. With regard to other potential radiological

environmental impacts, the proposed exemption does not increase the radiological effluents from the facility and does not increase the occupational exposure at the facility. Therefore, the Commission concludes that there are no significant radiological impacts associated with the proposed exemption.

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

Therefore, the proposed exemption does not significantly change the conclusions in the "Final Environmental Statement Related to the Operation of Sequoyah Nuclear Plant Units 1 and 2," (FES) dated July 1974.

Alternative to the Proposed Action: Because the staff has concluded that there is no measurable environmental impact associated with the proposed exemption, any alternative to this exemption will have either no significantly different environmental impact or greater environmental impact.

The principal alternative would be to deny the requested exemption. This would not reduce environmental impacts as a result of plant operations.

Alternative Use of Resources: This action does not involve the use of resources not previously considered in connection with the "Final Environmental Statement Related to the Operation of the Sequoyah Nuclear Plant, Units 1 and 2," dated July 1974.

Agencies and Persons Consulted: The NRC staff has reviewed the licensee's request that supports the proposed exemption. The NRC staff did not consult other agencies or persons.

FINDING OF NO SIGNIFICANT IMPACT

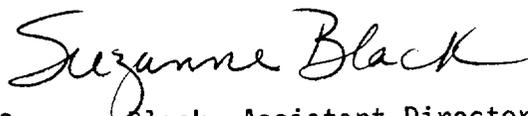
The Commission has determined not to prepare an environmental impact statement for the proposed exemption.

Based upon the foregoing environmental assessment, we conclude that the proposed action will not have a significant effect on the quality of the human environment.

For details with respect to this action, see the licensee's request for an exemption dated September 19, 1988, which is available for public inspection at the Commission's Public Document Room, Gelman Building, 2120 L Street, N.W., Washington, D.C., and at the Chattanooga-Hamilton County Bicentennial Library, 1001 Broad Street, Chattanooga, Tennessee 37402.

Dated at Rockville, Maryland, this 30th day of September 1988.

FOR THE NUCLEAR REGULATORY COMMISSION



Suzanne Black, Assistant Director  
for Projects  
TVA Projects Division  
Office of Special Projects