

July 22, 1997

Mr. M. S. Tuckman  
Senior Vice President  
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Duke Power Company  
P. O. Box 1006  
Charlotte, NC 28201

SUBJECT: CATAWBA NUCLEAR STATION - ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT RELATED TO ISSUANCE OF EXEMPTION TO 10 CFR 70.24 (TAC M97861 AND M97862)

Dear Mr. Tuckman:

Enclosed is a copy of an "Environmental Assessment and Finding of No Significant Impact" related to your request dated February 4, 1997, and supplemented by letter dated March 19, 1997, for an exemption from the requirements of 10 CFR 70.24 regarding criticality accident requirements for the Catawba Nuclear Station, Units 1 and 2. This assessment has been forwarded to the Office of the Federal Register for publication.

Sincerely,

ORIGINAL SIGNED BY:

Peter S. Tam, Senior Project Manager  
Project Directorate II-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket Nos. 50-413 and 50-414

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 black ink that reads "Peter S. Tam".

Peter S. Tam, Senior Project Manager  
Project Directorate II-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket Nos. 50-413 and 50-414

Enclosure: Environmental Assessment

cc w/encl: See next page

Catawba Nuclear Station  
Units 1 and 2

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UNITED STATES NUCLEAR REGULATORY COMMISSIONDUKE POWER COMPANY, ET AL.DOCKET NOS. 50-413 AND 50-414CATAWBA NUCLEAR STATION, UNITS 1 AND 2ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an exemption from certain requirements of its regulations to Facility Operating License Nos. NPF-35 and NPF-52, issued to Duke Power Company, et al. (the licensee), for operation of the Catawba Nuclear Station, Units 1 and 2, located in York County, South Carolina.

ENVIRONMENTAL ASSESSMENTIdentification of Proposed Action:

The proposed action would exempt the licensee from the requirements of 10 CFR 70.24, which requires a monitoring system that will energize clear audible alarms if accidental criticality occurs in each area in which special nuclear material is handled, used, or stored. The proposed action would also exempt the licensee from the requirements to maintain emergency procedures for each area in which this licensed special nuclear material is handled, used, or stored to ensure that all personnel withdraw to an area of safety upon the sounding of the alarm, to familiarize personnel with the evacuation plan, and to designate responsible individuals for determining the cause of the alarm, and to place radiation survey instruments in accessible locations for use in such an emergency.

The proposed action is in response to the licensee's application dated February 4, 1997, as supplemented by letter on March 19, 1997.

The Need for the Proposed Action:

The purpose of 10 CFR 70.24 is to ensure that if a criticality were to occur during the handling of special nuclear material, personnel would be alerted to that fact and would take appropriate action. At a commercial nuclear power plant the inadvertent criticality with which 10 CFR 70.24 is concerned could occur during fuel handling operations. The special nuclear material that could be assembled into a critical mass at a commercial nuclear power plant is in the form of nuclear fuel; the quantity of other forms of special nuclear material that is stored on site is small enough to preclude achieving a critical mass. Because the fuel is not enriched beyond 5.0 weight percent Uranium-235 and because commercial nuclear plant licensees have procedures and features designed to prevent inadvertent criticality, the staff has determined that it is unlikely that an inadvertent criticality could occur due to the handling of special nuclear material at a commercial power reactor. The requirements of 10 CFR 70.24, therefore, are not necessary to ensure the safety of personnel during the handling of special nuclear materials at commercial power reactors.

Environmental Impacts of the Proposed Action:

The Commission has completed its evaluation of the proposed action and concludes that there is no significant environmental impact if the exemption is granted. Inadvertent or accidental criticality will be precluded through compliance with the Catawba Nuclear Station Technical Specifications, the design of the fuel storage racks providing geometric spacing of fuel assemblies in their storage locations, and administrative controls imposed on fuel handling procedures. Technical Specifications requirements specify reactivity limits for the fuel storage racks and minimum spacing between the fuel assemblies in the storage racks.

Appendix A of 10 CFR Part 50, "General Design Criteria for Nuclear Power Plants," Criterion 62, requires the criticality in the fuel storage and handling system to be prevented by physical systems or processes, preferably by use of geometrically safe configurations. This is met at Catawba, as identified in the Technical Specification Section 3.9 and in the Updated Final Safety Analysis Report (UFSAR) Section 9.1, by detailed procedures that must be available for use by refueling personnel. Therefore, as stated in the Technical Specifications, these procedures, the Technical Specifications requirements, and the design of the fuel handling equipment with built-in interlocks and safety features, provide assurance that no incident could occur during refueling operations that would result in a hazard to public health and safety. In addition, the design of the facility does not include provisions for storage of fuel in a dry location.

UFSAR Section 9.1.1, New Fuel Storage, states that new fuel will normally be stored in the spent fuel pool serving the respective unit and that it may be also be stored in the fuel transfer canal. The fuel assemblies are stored in five racks in a row having a nominal center-to-center distance of 2 feet 1-3/4 inches. New fuel may also be stored in shipping containers. (Note that in none of these locations would criticality be possible.)

The proposed exemption would not result in any significant radiological impacts. The proposed exemption would not affect radiological plant effluents nor cause any significant occupational exposures since the Technical Specifications, design controls (including geometric spacing and design of fuel assembly storage spaces) and administrative controls preclude inadvertent criticality. The amount of radioactive waste would not be changed by the proposed exemption.

The proposed exemption does not result in any significant non-radiological environmental impacts. The proposed exemption involves 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 exemption, the staff considered denial of the requested exemption. Denial of the exemption would result in no change in current environmental impacts. The environmental impacts of the proposed action and this alternative action are similar.

Alternative Use of Resources:

This exemption does not involve the use of any resources not previously considered in the Final Environmental Statement related to the Catawba Nuclear Station.

Agencies and Persons Contacted:

In accordance with its stated policy, on July 7, 1997, the staff consulted with the South Carolina State official, Virgil Autrey of the Bureau of Radiological Health, South Carolina Department of Health and Environmental Control, regarding the environmental impact of the proposed exemption. The State official had no comments.

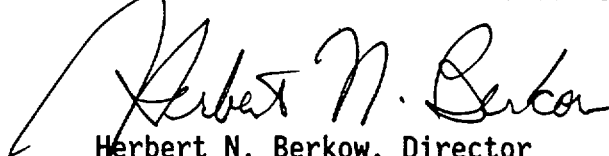
FINDING OF NO SIGNIFICANT IMPACT

Based upon the foregoing environmental assessment, the Commission concludes that the proposed exemption 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 exemption.

For further details with respect to the proposed action, see the licensee's request for the exemption dated February 4, 1997, as supplemented by letter dated March 19, 1997, 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 York County Library, 138 East Black Street, Rock Hill, South Carolina.

Dated at Rockville, Maryland, this 22nd day of July 1997.

FOR THE NUCLEAR REGULATORY COMMISSION



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