

July 21, 1997

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

SUBJECT: ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT
RELATED TO ISSUANCE OF EXEMPTION TO 10 CFR 70.24 - OCONEE NUCLEAR
STATION, UNITS 1, 2, AND 3 (TAC NOS. M97865, M97866, AND M97867)

Dear Mr. Tuckman:

Enclosed for your information is a copy of an "Environmental Assessment and Finding of No Significant Impact." This assessment relates to your request dated February 4, 1997, as supplemented by letter dated March 19, 1997, which requested an exemption from certain requirements of 10 CFR 70.24, "Criticality Accident Requirements."

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

Sincerely,

ORIGINAL SIGNED BY:

David E. LaBarge, Senior Project Manager
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-269, 50-270, and 50-287

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, appearing to read "D. LaBarge".

David E. LaBarge, Senior Project Manager
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-269, 50-270, and 50-287

Enclosure: Environmental Assessment

cc w/encl: See next page

Oconee Nuclear Station
Units 1, 2, and 3

cc:

Mr. Paul R. Newton
Duke Power Company, PB05E
422 South Church Street
Charlotte, North Carolina 28242-0001

J. Michael McGarry, III, Esquire
Winston and Strawn
1400 L Street, NW.
Washington, DC 20005

Mr. Robert B. Borsum
Framatome Technologies
Suite 525
1700 Rockville Pike
Rockville, Maryland 20852

Manager, LIS
NUS Corporation
2650 McCormick Drive, 3rd Floor
Clearwater, Florida 34619-1035

Senior Resident Inspector
U.S. Nuclear Regulatory Commission
Route 2, Box 610
Seneca, South Carolina 29678

Regional Administrator, Region II
U. S. Nuclear Regulatory Commission
Atlanta Federal Center
61 Forsyth Street, S.W., Suite 23T85
Atlanta, Georgia 30303

Max Batavia, Chief
Bureau of Radiological Health
South Carolina Department of Health
and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

County Supervisor of Oconee County
Walhalla, South Carolina 29621

Mr. Ed Burchfield
Compliance
Duke Power Company
Oconee Nuclear Site
P. O. Box 1439
Seneca, South Carolina 29679

Ms. Karen E. Long
Assistant Attorney General
North Carolina Department of
Justice
P. O. Box 629
Raleigh, North Carolina 27602

Mr. G. A. Copp
Licensing - EC050
Duke Power Company
526 South Church Street
Charlotte, North Carolina 28242-0001

Richard Fry, Director
Division of Radiation Protection
North Carolina Department of
Environment, Health, and
Natural Resources
P. O. Box 27687
Raleigh, North Carolina 27611-7687

Mr. J. W. Hampton
Vice President, Oconee Site
Duke Power Company
P. O. Box 1439
Seneca, South Carolina 29679

Heinz Mueller (5)
Environmental Review Coordinator
345 Courtland Street, NE
Atlanta, Georgia 30365

UNITED STATES NUCLEAR REGULATORY COMMISSIONDUKE POWER COMPANYDOCKET NOS. 50-269, 50-270, AND 50-287OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3ENVIRONMENTAL ASSESSMENT ANDFINDING OF NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an exemption from certain requirements of its regulations for Facility Operating License Nos. DPR-38, DPR-47, and DPR-55 issued to Duke Power Company (the licensee), for operation of the Oconee Nuclear Station Units 1, 2, and 3, located in Oconee 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 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. The proposed exemption is needed, however, for Oconee to continue to operate in accordance with its license and Commission regulations.

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 Oconee 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 Oconee, as identified in the Technical Specification Section 3.8 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 effluent 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 nonradiological 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 that 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 request 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 Related to the Operation of Oconee Nuclear Station Units 1, 2, and 3" dated March 1972.

Agencies and Persons Consulted:

In accordance with its stated policy, on July 17, 1997, the staff consulted with the South Carolina State official, Mr. Henry Porter 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 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 4, 1997, and supplement 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 local public document room located at the Oconee County Library, 501 West South Broad Street, Walhalla, South Carolina.

Dated at Rockville, Maryland, this 21st 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