

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555



APR 22 1985

Docket No. 50-414

Mr. H. B. Tucker, Vice President  
Nuclear Production Department  
Duke Power Company  
422 South Church Street  
Charlotte, North Carolina 28242

Dear Mr. Tucker:

Subject: Environmental Assessment

Enclosed for your information is a copy of the "Notice of Environmental Assessment and Finding of No Significant Impact" related to your May 11, 1984, request for exemption from a portion of the requirements of General Design Criterion 4 to 10 CFR 50, Appendix A.

The Notice has been forwarded to the Office of the Federal Register for publication.

Sincerely,

*Elinor G. Adensam*

Elinor G. Adensam, Chief  
Licensing Branch No. 4  
Division of Licensing

Enclosure:  
As stated

cc: See next page

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Controlled By *Angela Hutton*

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UNITED STATES NUCLEAR REGULATORY COMMISSIONDUKE POWER COMPANY, ET. AL.CATAWBA NUCLEAR STATION, UNIT 2DOCKET NO. 50-414NOTICE OF ENVIRONMENTAL ASSESSMENT ANDFINDING OF NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an Exemption from a portion of the requirements of General Design Criterion (GDC) 4 (10 CFR 50, Appendix A) to the Duke Power Company, the North Carolina Municipal Power Agency Number One, and the Piedmont Municipal Power Agency (the applicants) for the Catawba Nuclear Station, Unit 2, located at the applicants' site in York County, South Carolina.

ENVIRONMENTAL ASSESSMENT:

Identification of Proposed Action: The Exemption would permit the applicants not to install protective devices (such as pipe whip restraints) and not to consider the dynamic effects associated with postulated pipe breaks in eight locations per loop in the Catawba Unit 2 primary coolant system, on the basis of advanced calculational methods for assuring that piping stresses would not result in rapid piping failure; i.e., pipe breaks.

Need for Proposed Action: The proposed Exemption is needed in order to permit the applicants not to install protective devices such as pipe whip restraints related to 32 postulated break locations in the primary coolant loops. Analysis shows that the pipe breaks, which these devices are designed

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to protect against, will not occur. On the other hand the presence of these devices increases inservice inspection time in the containment and their elimination would tend to lessen the occupational doses to workers and facilitate inservice inspections.

GDC 4 requires that structures, systems and components important to safety shall be appropriately protected against dynamic effects including the effects of discharging fluids that may result from equipment failures, up to and including a double-ended rupture of the largest pipe in the reactor coolant system (Definition of LOCA). In recent submittals the applicants have provided information to show by advanced fracture mechanics techniques that the detection of small flaws by either inservice inspection or leakage monitoring systems is assured long before flaws in the piping materials can grow to critical or unstable sizes which could lead to large break areas such as the double-ended guillotine break or its equivalent. The NRC staff has reviewed and accepted the applicants' conclusion. Therefore, the NRC staff agrees that double-ended guillotine breaks in the primary pressure coolant loop piping, and their associated dynamic effects, need not be postulated as a design basis accident for pipe protective devices; i.e., pipe whip restraints are not needed. Accordingly, the NRC staff agrees that a partial exemption from GDC 4 is appropriate.

Environmental Impact of the Proposed Action: The proposed Exemption would not affect the environmental impact of the facility. No credit is given for the restraints to be eliminated in calculating accident doses to the environment. While the pipe whip restraints would minimize the damage from jet forces and whipping from a broken pipe, the calculated limitation on stresses required to

support this Exemption assures that the probability of pipe breaks which could give rise to such forces are extremely small; thus, the pipe whip restraints would have no significant effect on the overall plant accident risk.

The Exemption does not otherwise affect radiological plant effluents. Likewise, the relief granted does not affect non-radiological plant effluents, and has no other environmental impact. The elimination of the pipe whip restraints would tend to lessen the occupational doses to workers inside containment. Therefore, the Commission concludes that there are no significant radiological or non-radiological impacts associated with this Exemption.

The proposed Exemption involves design features located entirely within the restricted area as defined in 10 CFR 20. It does not affect plant non-radioactive effluents and has no other environmental impact. Therefore, the Commission concludes that there are no non-radiological impacts associated with this proposed Exemption.

Since we have concluded that there are no measurable negative environmental impacts associated with this Exemption, any alternatives would not provide any significant additional protection of the environment. The alternative to the exemption would be to require literal compliance with GDC 4.

Alternative Use of Resources: This action does not involve the use of resources not previously considered in the Final Environmental Statement (construction permit) for Catawba Unit 2.

Agencies and Persons Contacted: The NRC staff reviewed the applicants' request and applicable documents referenced therein that support this Exemption for Catawba Unit 2. The NRC did not consult other agencies or persons.

FINDING OF NO SIGNIFICANT IMPACT

The Commission has determined not to prepare an environmental impact statement for this action. Based upon the environmental assessment, we conclude that this action will not have a significant effect on the quality of the human environment.

For details with respect to this action, see the request for exemption dated May 11, 1984, and the information provided by the applicants in letters dated December 20, 1983, September 14, 1984, February 14, and April 17, 1985. These documents, utilized in the NRC staff's technical evaluation of the exemption request, are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C., and at the York County Library, 138 East Black Street, Rock Hill, South Carolina 29730. The staff's technical evaluation of the exemption request will be published with the exemption and will also be available for inspection at both locations listed above.

Dated at Bethesda, Maryland, this 17<sup>th</sup> day of April 1985.

FOR THE NUCLEAR REGULATORY COMMISSION

  
Thomas M. Novak, Assistant Director  
for Licensing  
Division of Licensing