



UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D. C. 20555

March 15, 1983

Honorable Nunzio J. Palladino
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Dr. Palladino:

SUBJECT: ACRS REPORT ON THE CATAWBA NUCLEAR STATION, UNITS 1 AND 2

During its 275th meeting, March 10-12, 1983, the Advisory Committee on Reactor Safeguards reviewed the application of the Duke Power Company, North Carolina Municipal Power Agency Number 1, North Carolina Electric Membership Corporation, and Saluda River Electric Cooperative, Inc. (the Applicants) for an operating license for the Catawba Nuclear Station, Units 1 and 2. The station is to be operated by Duke Power Company. The project was considered at an ACRS Subcommittee meeting in Charlotte, North Carolina, on March 4-5, 1983. Members of the Subcommittee toured the facility on March 4, 1983. In its review, the Committee had the benefit of discussions with representatives of the Applicants, Westinghouse Electric Corporation, the NRC Staff, and with members of the public. The Committee also had the benefit of the documents listed below. The Committee commented on the construction permit application for the Catawba Nuclear Station in a report dated November 13, 1973.

The Catawba Nuclear Station is located in York County, South Carolina, about 11 miles south-southwest of the nearest boundary of Charlotte, North Carolina. The McGuire Nuclear Station is approximately 30 miles north of the Catawba site.

Each Catawba unit makes use of a Westinghouse nuclear steam supply system with a rated core power of 3411 MWt. The reactor vessels have upper head injection. The containments are of the ice-condenser type with a design pressure of 15 psig.

The nuclear steam supply systems and the balance of plant for these two units are very similar to those used in the units at the McGuire Nuclear Station. The Applicants estimate that Catawba Units 1 and 2 will be ready for fuel loading by May 1984 and October 1986, respectively.

Catawba Unit 1 uses Westinghouse Model D-3 steam generators. Steam generators of this design have experienced tube degradation related to flow-induced vibrations in the preheater region. Internal modifications have been developed by Westinghouse and are to be incorporated in Catawba Unit 1 before its fuel is loaded. Unit 2 will use Westinghouse Model D-5 steam generators. Westinghouse will monitor the performance of the Model D-5 and develop modifications if they are required. The suggested approach appears appropriate.

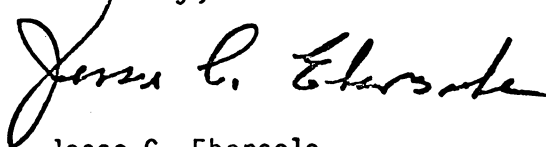
The ACRS has on several occasions recommended that evaluations be made of the capability of light water nuclear power plants to be shut down safely in the unlikely event of an earthquake of greater severity and lower likelihood than the safe shutdown earthquake. In a report dated November 18, 1982, the U.S. Geological Survey raised questions concerning the role of the Charleston earthquake of 1886 in judging the adequacy of the seismic design of nuclear power plants along much of the eastern seaboard. In a letter dated January 11, 1983, the ACRS made recommendations concerning a possible generic treatment of these matters; thus far the NRC Staff is developing a broad approach to deal with the Charleston earthquake issue. We believe it is important that a suitable approach for timely resolution of the overall questions on seismic risk be expeditiously developed. In the meantime, for the Catawba Station, we recommend that, in addition to items already considered, specific attention be given to the seismic capability of the emergency AC power supplies, the DC power supplies, and small components such as actuators and instrument lines that are important to the accomplishment of decay heat removal.

A number of items have been identified by the NRC Staff as Outstanding Issues. There is also a set of Confirmatory Issues that awaits additional documentation. We found no reason to believe that any of these issues will be especially difficult to resolve. We recommend that they be resolved in a manner satisfactory to the NRC Staff.

The ACRS believes that, if due regard is given to the items mentioned above, and subject to satisfactory completion of construction, staffing, and pre-operational testing, there is reasonable assurance that the Catawba Nuclear Station, Units 1 and 2, can be operated at core power levels up to 3411 MWt without undue risk to the health and safety of the public. As previously noted, fuel loading for Unit 2 is planned to take place about 2.5 years after fuel loading for Unit 1. Should there be a significant delay in this schedule, we would expect to examine the need for additional review.

Additional comments by ACRS Members M. Bender and P. G. Shewmon are presented below.

Sincerely,



Jesse C. Ebersole
Acting Chairman

Additional Comments by ACRS Members M. Bender and P. G. Shewmon

The NRC Staff continues to emphasize the need for meteorological mapping of sites for the purpose of emergency response if an accident should occur.

While information on weather conditions will be needed in such an event, it should be provided from weather stations capable of predicting weather conditions over the period of time when the accident is actually occurring and radionuclide releases might occur. Other historical data from local meteorological towers do not appear to have much public safety value. If this requirement is to be imposed on a continuing basis at all nuclear power stations, a PRA style analysis should be performed to show the benefit-cost relationship of this regulatory requirement. This is one of the places where such an analysis would be most useful. It would not be difficult to perform, and the results would be instructive in showing how such analyses can be applied effectively to regulatory decision making. This matter is of generic interest but the analysis would be useful in the Catawba licensing action.

References:

1. Duke Power Company, "Catawba Nuclear Station, Units 1 and 2, Final Safety Analysis Report," with Amendments 20, 21, 24, 25, 27, and 28 to the Application for Operating License.
2. U.S. Nuclear Regulatory Commission, "Safety Evaluation Report Related to the Operation of Catawba Nuclear Station, Units 1 and 2," NUREG-0954, dated February 1983.