

September 11, 2003

Mr. D. M. Jamil
Vice President
Catawba Nuclear Station
Duke Energy Corporation
4800 Concord Road
York, SC 29745

SUBJECT: CATAWBA NUCLEAR STATION, UNITS 1 AND 2 RE: REQUEST FOR
ADDITIONAL INFORMATION (TAC NOS. MB7014 AND MB7015)

Dear Mr. Jamil:

By letter dated November 25, 2002, you submitted an application for amendment of the Technical Specifications for the Catawba Nuclear Station (Catawba), Units 1 and 2, to revise the TS for five ventilation systems, and the reactor building and containment penetrations. The U. S. Nuclear Regulatory Commission technical staff has reviewed the application and has determined that additional information is required, as identified in the Enclosure.

We discussed these issues with your staff on August 27, 2003. Your staff indicated that you would attempt to provide your response by October 15, 2003.

Please contact me at (301) 415-1493, if you have any other questions on these issues.

Sincerely,

/RA/

Robert E. Martin, Senior Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-413 and 50-414

Enclosure: As stated

cc w/encl: See next page

September 11, 2003

Mr. D. M. Jamil
Vice President
Catawba Nuclear Station
Duke Energy Corporation
4800 Concord Road
York, SC 29745

SUBJECT: CATAWBA NUCLEAR STATION, UNITS 1 AND 2 RE: REQUEST FOR
ADDITIONAL INFORMATION (TAC NOS. MB7014 AND MB7015)

Dear Mr. Jamil:

By letter dated November 25, 2002, you submitted an application for amendment of the Technical Specifications for the Catawba Nuclear Station (Catawba), Units 1 and 2, to revise the TS for five ventilation systems, and the reactor building and containment penetrations. The U. S. Nuclear Regulatory Commission technical staff has reviewed the application and has determined that additional information is required, as identified in the Enclosure.

We discussed these issues with your staff on August 27, 2003. Your staff indicated that you would attempt to provide your response by October 15, 2003.

Please contact me at (301) 415-1493, if you have any other questions on these issues.

Sincerely,

/RA/

Robert E. Martin, Senior Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-413 and 50-414

Enclosure: As stated

cc w/encl: See next page

DISTRIBUTION:

PUBLIC OGC CHawes KKavanagh
PDII-1 R/F ACRS RMartin
JNakoski LPlisco, RII RHaag, RII
ADAMS Accession: ML032541025

OFFICE	PDII-1/PM	PDII-1/LA	PDII-1/SC
NAME	RMartin	CHawes	JNakoski
DATE	9/9/03	8/29/03	9/10/03

OFFICIAL RECORD COPY

REQUEST FOR ADDITIONAL INFORMATION

DUKE POWER COMPANY

CATAWBA NUCLEAR STATION, UNITS 1 AND 2

DOCKET NOS. 50-413 AND 50-414

The Nuclear Regulatory Commission (NRC) staff has reviewed the licensee's submittal dated November 25, 2002, regarding proposed changes Technical Specifications for five ventilation systems, and the reactor building and containment penetrations. The NRC staff has identified the following information that is needed to enable the continuation of its review.

Dose Analysis

1. The application dated November 25, 2002, includes an analysis of the radiological consequences of a design basis loss of coolant accident (LOCA) using alternative source term (AST) methodology. The application also states the NRC has previously approved the AST methodology for the fuel handling and wier gate drop accidents and that the additional use of AST methodology for the LOCA analysis would represent full implementation of the AST methodology for Catawba. There is at least one other application for Catawba that is currently under review that may be affected by the proposed use of AST methodology in the November 25, 2002, application and that is the application dated February 27, 2003, related to the use of mixed oxide (MOX) lead test assemblies. This issue was addressed in requests for additional information on the MOX application that were issued on July 25, 2003, that addressed how the AST related issues in the two applications would be coordinated. Accordingly, this request for information on the November 25, 2002, application now includes the following request on how the proposed changes included in this application will be coordinated with other pending Catawba applications, including the MOX application.

The licensee's February 27, 2003, application to allow the use of four MOX fuel assemblies at either McGuire or Catawba, currently under NRC staff review, does not address the proposed implementation of a full scope alternative source term at Catawba with total effective dose equivalent (TEDE) criteria for the design basis accident dose analyses. The November 25, 2002, application does not address the effect of the proposed MOX lead test assemblies on the dose consequences of design basis accidents. Please explain how the differences between these two applications will be resolved, including comparable differences for any other proposed license amendments for Catawba that are currently pending.

2. The November 25, 2002, application proposes to use organ dose weighting factors given in International Commission on Radiological Protection Publication 60, "1990 Recommendations of the International Commission on Radiological Protection" (ICRP-60). SECY 01-0148, "Processes for Revision of 10 CFR Part 20 Regarding Adoption of ICRP Recommendations on Occupational Dose Limits and Dosimetric Models and Parameters," addresses the staff position on ICRP-60. The Commission

directed the staff not to adopt ICRP-60 at that time (Staff Requirements - SECY-01-0148, "Processes for Revision of 10 CFR Part 20 Regarding Adoption of ICRP Recommendations on Occupational Dose Limits and Dosimetric Models and Parameters"), but to monitor the work of other federal agencies and the revision to ICRP-60, which is ongoing. The NRC staff believes that it is premature to consider adoption of ICRP-60 at this time. On October 17, 1994, in the Federal Register (59 FR 52255), the NRC proposed revisions to 10 CFR Parts 50, 52 and 100 (References 1, 2, and 3) that included definitions of TEDE, deep-dose equivalent, and committed effective dose equivalent. The statements of consideration for this rulemaking noted that the definition of TEDE is meant to be consistent with 10 CFR Part 20 (Reference 4). These definitions are currently codified in 10 CFR 50.2. Therefore, the NRC staff believes that the organ dose weighting factors given in 10 CFR 20.1003 are the accepted values to be used in the calculation of TEDE as defined in 10 CFR 50.2. Please provide further justification for use of the ICRP-60 organ dose weighting factors considering the regulatory definition of TEDE.

3. The November 25, 2002, application proposes to eliminate the annulus ventilation system (AVS) one minute drawdown time surveillance requirement (SR) in SR 3.6.16.2. In justification of this change, it is stated on page 5 of Attachment 3 of the November 25, 2002, application that the one minute annulus drawdown time is not a dose analysis input. In the LOCA dose consequences analysis, provided in Appendix A of the submittal, the leakage from the containment is assumed to be an unfiltered ground level release prior to AVS drawdown. After 23 seconds, the release is assumed to be filtered by the AVS and released from the plant vent. This seems to contradict the claim that the drawdown time is not a dose analysis input. Please provide further information on the treatment of containment leakage by the AVS, including the time it takes for the AVS to drawdown the annulus to the required negative pressure. Additionally, please provide further justification on why a surveillance is not needed to verify that the AVS can provide filtration of the containment leakage as assumed in your dose analyses.

Control Room Relative Concentration (X/Q) Estimates

4. What are the release heights and distances between the postulated release location and receptor? Are distances straight line or do they factor in flow over or around structures? For example, does "90° arc" mean that the release is assumed to occur due east of the receptor, but is assumed to initially move in an arc around a structure to get to the receptor?
5. Provide a figure or figures showing structures, assumed paths of air flow, dimensions, heights and distances used as input in estimating the postulated transport of effluent from each of the release locations to the receptors. Are all directional inputs defined in terms of true north? If the figures are drawn to plant or magnetic north, what is the relationship to true north, assuming that the meteorological measurements are based upon true north?
6. If more than one release to the environment and transport scenario could occur (e.g., loss of offsite power, availability of offsite power, single failure), were comparative X/Q calculations made to ensure consideration of the limiting dose?

7. Confirm that each of the control room intakes meets the applicable qualifications to support a credit for reduction in the X/Q values. These qualifications include, but are not limited to, the single failure criterion for active components and the seismic and missile protection criteria. If both control room air intakes were previously approved by the NRC staff as meeting all of the applicable qualifications and that status has not changed, the licensee's response may reference the document approving the intakes. Also, provide the assumed flow rates for each intake used in the composite X/Q calculations?
8. Page A-36 of Appendix A to Attachment 3 of the November 25, 2002, submittal lists postulated design basis events. Page A-68 provides some of the input information as a function of release and receptor location. Page A-70 provides X/Q values for two of the four locations listed in a table on Page A-68. What are the pairings of postulated design basis events, release and intake locations, and X/Q values?

Bypass Leakage

9. In the submittal, the licensee requested a change for penetration and bypass leakage from < 0.05 percent to < 1.0 percent for annulus ventilation, fuel handling ventilation, and auxiliary building ventilation systems. The staff position on this issue is as outlined in Regulatory Position C.5.c and C.5.d of Regulatory Guide (RG) 1.52, Rev. 2, dated March 1978 (Reference 5). Although, a different position was outlined in Generic Letter 83-13 (Reference 6), that position is not the current NRC staff's position. The current staff's position is as indicated above and as outlined in Regulatory Position C.6 of RG 1.52 Rev. 3, dated June 2001. Therefore, the penetration and bypass leakage should be < 0.05 percent for the systems discussed above.

REFERENCES:

1. Title 10 of Code of Federal Regulations (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities."
2. 10 CFR Part 52, "Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Plants."
3. 10 CFR Part 100, "Reactor Site Criteria."
4. 10 CFR Part 20, "Standards for Protection Against Radiation."
5. Regulatory Guide 1.52, "Design, Inspection, and Testing Criteria for Air Filtration and Adsorption Units of Post-Accident Engineered Safety Feature Atmosphere Cleanup Systems in Light Water Cooled Nuclear Power Plants."
6. Generic Letter 83-13, "Clarification of Surveillance Requirements for HEPA Filters and Charcoal Absorbers Units in Standard Technical Specifications on ESF Cleanup Systems."

Catawba Nuclear Station

cc:

Mr. Gary Gilbert
Regulatory Compliance Manager
Duke Energy Corporation
4800 Concord Road
York, South Carolina 29745

Ms. Lisa F. Vaughn
Duke Energy Corporation
Mail Code - PB05E
422 South Church Street
P.O. Box 1244
Charlotte, North Carolina 28201-1244

Anne Cottingham, Esquire
Winston and Strawn
1400 L Street, NW
Washington, DC 20005

North Carolina Municipal Power
Agency Number 1
1427 Meadowwood Boulevard
P. O. Box 29513
Raleigh, North Carolina 27626

County Manager of York County
York County Courthouse
York, South Carolina 29745

Piedmont Municipal Power Agency
121 Village Drive
Greer, South Carolina 29651

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

NCEM REP Program Manager
4713 Mail Service Center
Raleigh, NC 27699-4713

North Carolina Electric Membership
Corporation
P. O. Box 27306
Raleigh, North Carolina 27611

Senior Resident Inspector
U.S. Nuclear Regulatory Commission
4830 Concord Road
York, South Carolina 29745

Henry Porter, Assistant Director
Division of Waste Management
Bureau of Land and Waste Management
Department of Health and Environmental
Control
2600 Bull Street
Columbia, South Carolina 29201-1708

Mr. C. Jeffrey Thomas
Manager - Nuclear Regulatory
Licensing
Duke Energy Corporation
526 South Church Street
Charlotte, North Carolina 28201-1006

Saluda River Electric
P. O. Box 929
Laurens, South Carolina 29360

Mr. Peter R. Harden, IV
VP-Customer Relations and Sales
Westinghouse Electric Company
6000 Fairview Road
12th Floor
Charlotte, North Carolina 28210

Catawba Nuclear Station

cc:

Mr. T. Richard Puryear
Owners Group (NCEMC)
Duke Energy Corporation
4800 Concord Road
York, South Carolina 29745

Richard M. Fry, Director
Division of Radiation Protection
North Carolina Department of
Environment, Health, and
Natural Resources
3825 Barrett Drive
Raleigh, North Carolina 27609-7721