Duke Power

D.M. JAMIL
Vice President

Duke Power
Catawba Nuclear Station
4800 Concord Road / CN01VP
York, SC 29745-9635

803 831 4251

803 831 3221 fax

June 14, 2005

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Subject: Duke Energy Corporation
Catawba Nuclear Station, Units 1 and 2
Docket Numbers 50-413 and 50-414
Proposed Technical Specifications and Bases Amendment
Technical Specification and Bases 3.6.10
Annulus Ventilation System (AVS)
Technical Specification and Bases 3.6.16
Reactor Building
Technical Specification Bases 3.7.10
Control Room Area Ventilation System (CRAVS)
Technical Specification Bases 3.7.12
Auxiliary Building Filtered Ventilation Exhaust System (ABFVES)
Technical Specification Bases 3.7.13
Fuel Handling Ventilation Exhaust System (FHVES)
Technical Specification and Bases 3.9.3
Containment Penetrations
Technical Specification 5.5.11
Ventilation Filter Testing Program (VFTP)
TAC Numbers MB7014 and MB7015

References:

1. Letters from Duke Energy Corporation to NRC, dated November 25, 2002, November 13, 2003, December 16, 2003, September 22, 2004, and April 6, 2005

2. Electronic communication from S.E. Peters to L.J. Rudy, dated May 17, 2005

In Reference 2, NRC provided a draft Request for Additional Information (RAI) concerning the subject Catawba license amendment request submittal. On June 1, 2005, a telephone conference call was held among various Duke Energy Corporation and NRC representatives to discuss this RAI. The purpose of this letter is to provide a response to Questions 1 and 3 of this RAI.

A001

Catawba Nuclear Station 20th Anniversary 1985-2005

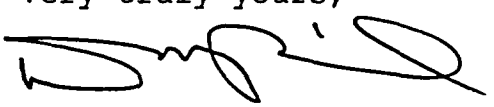
Note that based on the discussion in the conference call, Question 1 of the attached response has been restated.

The remaining questions of the Reference 2 RAI are presently being evaluated by NRC. NRC indicated that the questions would be provided to Duke Energy Corporation by June 21, 2005.

Pursuant to 10 CFR 50.91, a copy of this letter is being sent to the appropriate State of South Carolina official.

Inquiries on this matter should be directed to L.J. Rudy at (803) 831-3084.

Very truly yours,



D.M. Jamil

Attachment

D.M. Jamil affirms that he is the person who subscribed his name to the foregoing statement, and that all the matters and facts set forth herein are true and correct to the best of his knowledge.

D.M. Jamil, Vice President

Subscribed and sworn to me: 6-14-2005
Date

Notary Public

My commission expires: 7-10-2012
Date

SEAL

xc (with attachment):

W.D. Travers
U.S. Nuclear Regulatory Commission
Regional Administrator, Region II
Atlanta Federal Center
61 Forsyth St., SW, Suite 23T85
Atlanta, GA 30303

E.F. Guthrie
Senior Resident Inspector (CNS)
U.S. Nuclear Regulatory Commission
Catawba Nuclear Station

S.E. Peters (addressee only)
NRC Project Manager (CNS)
U.S. Nuclear Regulatory Commission
Mail Stop O-8 G9
Washington, D.C. 20555-0001

H.J. Porter, Director
Division of Radioactive Waste Management
Bureau of Land and Waste Management
Department of Health and Environmental Control
2600 Bull St.
Columbia, SC 29201

ATTACHMENT

RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION

Question 1: The supplement to the AST submittal dated April 6, 2005, does not specify what values were taken for gap fractions for the MOX LTAs in the dose analysis for the design basis locked rotor and rod ejection accidents. What gap fractions were assumed for releases from the MOX LTAs for these design basis accidents and what is the basis for the assumption?

Response: The gap fractions used for the MOX lead fuel assemblies (LFAs) in the analysis of radiological consequences of the design basis (DB) locked rotor accident (LRA) and rod ejection accident (REA, Ref. 1) were set as follows: The value given in RG 1.183 (Ref. 2) Table 3 for each isotope in the source term for a non LOCA design basis accident was multiplied by 1.5 (increased by 50%). This is consistent with the earlier position taken by Duke Energy Corporation pertaining to the gap fractions for non LOCA design basis accidents (Ref. 3, 4).

Question 3: Natural deposition in the containment during the rod ejection accident does not include iodine - please clarify how natural deposition is modeled in the dose analysis. Which radionuclides are considered removed by natural deposition?

Response: A review of NUREG/CR-6189 (Ref. 5) was completed to determine how it should be applied in the analysis of radiological consequences of design basis accidents. In particular, the following statement on Pg. 1 was noted.

"With exception of the noble gases and a small amount of iodine, these materials (fission products) will be released to the containment atmosphere as aerosols."

The analysis reported in NUREG/CR-6189 is associated with the alternative source term. In that context, the term "aerosols" applies to particulate forms. In addition, "a small amount of iodine" (Ref. 5) was taken to refer to the diatomic iodine and organic iodine compounds assumed to be released to containment following a design basis LOCA (4.85% and 0.15% of the total iodine release to containment - cf. Ref. 6 & 7). From this review, it was assumed that the natural deposition of fission products onto internal structures in containment was limited to particulates.

As reported to the Staff (Ref. 1), it was assumed that iodine released to containment following a design basis

REA took the form of diatomic iodine and organic iodine compounds (97% and 3% of the total iodine release to containment). No iodine release in the form of particulates following the design basis REA was assumed. For this reason and those above, no credit was taken for natural deposition of iodine. Natural deposition of noble gases was not assumed.

All other fission products in the radioactive source term for the design basis REA were assumed to take the form of particulates. Natural deposition was credited for these fission products. These fission products include the following isotopes:

Rubidium: Rb^{86}, Rb^{88}, Rb^{89}, and Rb^{90}.
Cesium: Cs^{134}, Cs^{136}, Cs^{137}, Cs^{138}, and Cs^{139}.
Bromine: Br^{83}, Br^{85}, and Br^{87}.

REFERENCES

1) D.H. Jamil to U.S. Nuclear Regulatory Commission, "Duke Energy Corporation Catawba Nuclear Station, Units 1 and 2 (Docket Nos. 50-413 and 50-414, Proposed Technical Specifications and Bases Amendment, Technical Specification and Bases 3.6.10 Annulus Ventilation System (AVS), Technical Specification and Bases 3.6.16 Reactor Building, Technical Specification and Bases 3.7.10 Control Room Area Ventilation System (CRAVS), Technical Specification and Bases 3.7.12 Auxiliary Building Filtered Ventilation Exhaust System (ABFVES), Technical Specification and Bases 3.7.13 Fuel Handling Ventilation Exhaust System (FHVES), Technical Specification and Bases 3.9.3 Containment Penetrations, Technical Specification 5.5.11 Ventilation System Testing Program, TAC Numbers MB7014 and MB7015," April 6, 2005.

2) USNRC, Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors, Regulatory Guide 1.183, July 2000.

3) H.B. Barron to U.S. Nuclear Regulatory Commission, "Duke Energy Corporation Catawba Nuclear Station Units 1 & 2, Docket Nos. 50-413 and 50-414, McGuire Nuclear Station Units 1 & 2, Docket Nos. 50-369 & 50-370, Response to Request for Additional Information Regarding the Use of Mixed Oxide Lead Fuel Assemblies," November 3, 2003.

4) W.R. McCollum to U.S. Nuclear Regulatory Commission, "Catawba Nuclear Station Units 1 & 2, Docket Nos. 50-413 , 50-414 Response to Request for Additional Information (TAC Nos. MB7863, MB7864) Mixed Oxide Fuel Lead Assemblies (Environmental, Radiological, and Materials)," February 7, 2004.

5) D.A. Powers and K.E. Washington (Sandia National Laboratories), S.B. Burson (USNRC), and J.L. Sprung (SNL), A Simplified Model of Aerosol Removal by Natural Processes in Reactor Containments, NUREG/CR-6189 (SAND 94-0407), July 1996.

6) Ref. 2 Op. Cit., Appendix A.

7) Ibid., Appendix H.