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March 26, 2004

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

Subject: Duke Energy Corporation  
Catawba Nuclear Station Units 1 & 2, Docket Nos. 50-413, 50-414  
Additional Information Regarding Mixed Oxide Fuel Lead Assemblies  
No Significant Hazards Consideration Evaluation & Environmental Review  
(TAC Nos. MB7863, MB7864)

- References:
- (1) M. S. Tuckman letter to the U. S. Nuclear Regulatory Commission (NRC) dated February 27, 2003, Catawba Nuclear Station Units 1 & 2, McGuire Nuclear Station Units 1 & 2, Proposed Amendments to the Facility Operating License and Technical Specifications to Allow Insertion of Mixed Oxide (MOX) Fuel Lead Assemblies and Request for Exemptions from Certain Regulations in 10 CFR Part 50
  - (2) M. S. Tuckman letter to the NRC dated November 3, 2003, Response to Request for Additional Information Regarding the Use of Mixed Oxide Lead Fuel Assemblies
  - (3) W. R. McCollum letter to the NRC dated March 16, 2004 (cover sheet incorrectly dated March 16, 2003), Amended Information Regarding Radiological Consequences for MOX Fuel Lead Assemblies
  - (4) Blue Ridge Environmental Defense League's Supplemental Petition to Intervene, October 21, 2003, p. 5
  - (5) Answer of Duke Energy Corporation to the "Blue Ridge Environmental Defense League's Supplemental Petition to Intervene" and the "Contentions of Nuclear Information and Resource Service," November 11, 2003

By letter dated February 27, 2003 (Reference 1), as subsequently modified, Duke Energy submitted an application to amend the Catawba operating licenses to allow the use of four mixed oxide (MOX) fuel lead assemblies. Duke Energy provided the NRC staff additional information by letters dated November 3, 2003 (Reference 2) and March 16, 2004 (Reference 3). Specifically, in Tables Q3(b)-1, Q3(b)-2, Q3(b)-3 and Table Q3(b)-4, the November 3, 2003 letter provided information related to radiological consequences of postulated accidents that was

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not contained in the original application. The March 16, 2004 letter provided corrections to certain values in those tables.

In light of the updated radiological consequences information discussed above, Duke Energy has reviewed the impact of these corrections on certain conclusions in the No Significant Hazards Consideration (NSHC) determination and the Environmental Review (ER) contained in the original application (Attachments 4 and 5, respectively, to Reference 1). Duke has determined that the conclusions reached in the original NSHC evaluation and in the ER remain valid. Specifically, the introduction of four MOX fuel lead assemblies involves no significant hazards consideration pursuant to the criteria in 10 CFR §50.92. In addition, the finding of no significant environmental impact pursuant to 10 CFR Part 51 remains valid. While the percentage differences in design basis accident doses changed from the values stated in the original NSHC evaluation and the ER, the absolute magnitudes of those calculated doses remain small, as documented in the subsequent correspondence. The largest increase associated with the conservative estimation of doses from accidents involving MOX fuel was 1.3 Rem total effective dose equivalent at the exclusion area boundary for the weir gate drop accident. In all cases, substantial margin to the regulatory acceptance criteria was retained.

In addition, it was noted in Reference 4 that the estimate of change in severe accident consequences for cores containing four MOX fuel assemblies had been incorrectly scaled from a 40% MOX fuel core evaluation. In Reference 5 Duke acknowledged that the change in public health risks due to severe accidents involving four MOX fuel lead assemblies should be a range from minus 0.2% to plus 0.7%, rather than minus 0.1% to 0.3%. Two sections of the Reference 1 license amendment request are affected: Attachment 3, Section 3.8 (Description and Technical Justification); and Attachment 5 (the ER). As with the updated radiological consequences information, this change has no impact on the conclusions of the license amendment request.

Inquiries on this matter should be directed to Michael T. Cash at (704) 382-5826.



H.B. Barron  
Executive Vice President - Nuclear Generation  
Duke Energy Corporation

Oath and Affirmation

I affirm that I, HB Barron, am the person who subscribed my name to the foregoing, and that all the matters and facts set forth herein are true and correct to the best of my knowledge.

HB Barron

HB Barron

Subscribed and sworn to before me on this 26<sup>TH</sup> day of March 2004.

M.T. Cash

Notary Public

My Commission expires:

January 22, 2008

Date

**MICHAEL T. CASH**  
Notary Public  
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Commission Expires January 22, 2008



cc: w/attachment

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