January 17, 2002

Mr. M. S. Tuckman
Executive Vice-President
Nuclear Generation
Duke Energy Corporation
PO Box 1006
Charlotte, NC 28201-1006

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE MCGUIRE NUCLEAR STATION, UNITS 1 AND 2, AND CATAWBA NUCLEAR STATION, UNITS 1 AND 2, LICENSE RENEWAL APPLICATION (LRA)

Dear Mr. Tuckman:

By letter dated June 14, 2001, Duke Energy Corporation (Duke) submitted for Nuclear Regulatory Commission (NRC) review an application, pursuant to 10 CFR Part 54, to renew the operating licenses for the McGuire Nuclear Station, Units 1 and 2, and Catawba Nuclear Station, Units 1 and 2. The NRC staff is reviewing the information contained in this license renewal application and has identified, in the enclosure, areas where additional information is needed to complete its review. Specifically, the enclosed request for additional information (RAI) is from the following sections of the LRA:

Section 2.1, Aging Management of Electrical and Instrumentation and Controls
Appendix B, Section B.2, Program and Activity Attributes

Please provide a schedule by letter, or electronic mail for the submittal of your response within 30 days of the receipt of this letter. Additionally, the staff would be willing to meet with Duke prior to the submittal of the response to provide clarification of the staff's request for additional information.

Sincerely,

/***RA***/

Rani L. Franovich, Project Manager
License Renewal and Environmental Impacts Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket Nos. 50-369, 50-370, 50-413 and 50-414

Enclosure: As stated

cc w/encl: See next page

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Section 2.1, Aging Management of Electrical and Instrumentation and Controls
Appendix B, Section B.2, Program and Activity Attributes

Please provide a schedule by letter, or electronic mail for the submittal of your response within 30 days of the receipt of this letter. Additionally, the staff would be willing to meet with Duke prior to the submittal of the response to provide clarification of the staff's request for additional information.

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Request for Additional Information (RAI)
McGuire Nuclear Station, Units 1 and 2, and
Catawba Nuclear Station, Units 1 and 2

2.1 Scoping and Screening Methodology

2.1-1 In LRA Section 2.1.1.1, "Safety Related Structures, Systems, and Components," Duke appropriately states that plant systems, structures, and components within the scope of license renewal are those that satisfy the scoping criteria in §54.4(a)(1). Scoping criterion (a)(1)(iii) refers to the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposures **comparable to the guidelines in §50.34(a)(1), §50.67(b)(2), or §100.11 of this chapter, as applicable**."

During the audit, however, the staff noted that the Duke Specifications governing scoping methodology for McGuire and Catawba currently cite superseded regulatory text in establishing the scoping criteria to be used in identifying Catawba and McGuire structures, systems, and components in accordance with §54.4(a)(1) requirements. Specifically, these specifications cite the following criterion in reference to §54.4(a)(1)(iii): "The capability to prevent or mitigate the consequences of accidents that could result in potential off-site exposures comparable to the **10 CFR Part 100 guidelines**."

Therefore, the staff requests the applicant to provide a written evaluation that addresses the impact, if any, of not having explicitly considered in its scoping methodology for Catawba and McGuire those structures, systems, or components that are relied upon to ensure "the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposures comparable to the guidelines in §50.34(a)(1), §50.67(b)(2), or §100.11 of this chapter, as applicable," consistent with the facilities' CLB.

2.1-2.a and 2.1-2.b - Scoping of Structures and Components that Meet 10 CFR 54.4(a)(2) Criteria

An applicant has two options when performing its scoping evaluation for non-safety-related piping systems that have a spatial relationship with safety-related systems, structures or components (SSCs) such that their failure could adversely impact the performance of an intended safety function: a mitigative option or a preventive option.

Mitigative option: With the mitigative option, the applicant must demonstrate that plant mitigative features (e.g., pipe whip restraints, jet impingement shields, spray and drip shields, seismic supports, flood barriers, etc.) are provided to protect safety-related SSCs from a failure of non-safety-related piping segments. When evaluating the failure modes of non-safety-related piping segments and the associated consequences, age-related degradation must be considered. The staff notes that pipe failure evaluations typically do not consider age-related degradation when determining pipe failure locations. Rather, pipe failure locations are normally postulated based on high stress. Industry operating experience has shown that age-related pipe failures can, and do, occur at locations other than the high-stress locations postulated in most pipe failure analyses. Therefore, to utilize the mitigative option, an applicant should demonstrate that the mitigating devices are adequate to protect safety-related SSCs from failures of non-safety-related piping segments at any location where age-related degradation is plausible. If this level of protection can be demonstrated, then only the mitigative

features need to be included within the scope of license renewal, and the piping segments need not be included within the scope.

Preventive option: if an applicant cannot demonstrate that the mitigative features are adequate to protect safety-related SSCs from the consequences of non-safety-related pipe failures, then the applicant should utilize the preventive option, which requires that the entire non-safety-related piping system be brought into the scope of license renewal and an AMR be performed on the system piping. An applicant may determine that, to ensure adequate protection of the safety-related SSC, a combination of mitigative features and non-safety-related piping segments must be brought within scope.

2.1-2.a The staff requests that the applicant identify whether the mitigative option, the preventive option, or a combination, is used to identify non-safety-related **piping systems** that, if they failed, could adversely impact the performance of an intended safety function. For each non-safety-related piping system that would normally be included within the scope of license renewal, but is excluded because mitigative features have been credited for protecting safety-related SSCs from the failure of the non-safety-related piping system, please identify (1) the mitigative feature(s) that is credited for protection; (2) the hazard (e.g., failure mechanisms and postulated failure locations) for which the mitigative feature(s) is providing protection; and (3) a summary discussion (including references, such as reports, analyses, calculations, etc.) of the basis for the conclusion that the mitigative feature(s) is adequate to protect safety-related SSCs.

2.1-2.b The staff requests that the applicant identify whether the mitigative option, the preventive option, or a combination, is used to identify non-safety-related non-safety-related systems, structures or components **(other than piping)** that, if they failed, could adversely impact the performance of an intended safety function. For these other non-safety-related systems, structures or components, an applicant can exercise the mitigative option, the preventive option, or a combination, to address the scoping issue. For each non-safety-related systems, structures or components identified as meeting the 54.4(a)(2) scoping criterion, list which option or combination of options is being credited. For those non-safety-related systems, structures or components that exercise the mitigative option, please identify (1) the mitigative feature(s) that is credited for protection; (2) the hazard (e.g., failure mechanisms and postulated failure locations) for which the mitigative feature(s) is providing protection; and (3) a summary discussion (including references, such as reports, analyzes, calculations, etc.) of the basis for the conclusion that the mitigative feature(s) is adequate to protect safety-related SSCs.

2.1-3 LRA Appendix B, “Aging Management Programs and Activities,” Section B.2, “Program and Activity Attributes,” and Subsection B.2.2, “Attribute Definitions,” states that the applicant relies on the corrective action process as implemented through Nuclear System Directives NSD 208, “Problem Investigation Process,” and NSD 223, “Trending of PIP Data,” to satisfy the corrective actions, confirmation process, and administrative controls attributes of the aging management programs that will be implemented at Catawba and McGuire for the period of extended operation.

Consistent with guidance in SRP-LR, Appendix A.2, “Quality Assurance for Aging Management Programs (Branch Technical Position IQMB-1),” license renewal applicants can rely on the existing requirements in 10 CFR Part 50, Appendix B, “Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants,” to satisfy these program elements/attributes. However, the Catawba/McGuire LRA does not establish or identify the role of the aforementioned Nuclear System Directives with respect to the applicant’s 10 CFR Part 50, Appendix B, quality assurance program in effect at these facilities.

Therefore, the staff requests the applicant to confirm that NSDs 208 and 223 govern the applicant’s corrective action program, which is subject to the requirements of 10 CFR Part 50, Appendix B, quality assurance program. The staff requests the applicant to confirm that this same corrective action program is credited for structures, systems, and components whose aging will be managed by an aging management program at Catawba and McGuire during the period of extended operation. In conformance with 10 CFR 54.21(d) requirements, the staff also requests the applicant to identify and describe this role as a commitment in the UFSAR supplements for Catawba and McGuire.

2.1-4 The audit team determined that the procedures reviewed in combination with the review of a sample of scoping and screening products provided adequate evidence that the scoping and screening process was conducted in accordance with the requirements of 10 CFR 54.4, “Scope,” and 10 CFR 54.21, “Contents of Application — Technical Information.” However, the team also concluded that the applicant needs to describe the process it intends to implement to capture the scoping and screening process upon which the applicant will rely during the period of extended operation at Catawba and McGuire to satisfy the requirements of 10 CFR 54.35, “Requirements During the Term of Renewed License.” As such, the staff requests the applicant to describe the process it intends to implement to capture the scoping and screening process upon which the applicant will rely during the period of extended operation at Catawba and McGuire to satisfy the requirements of 10 CFR 54.35, “Requirements During the Term of Renewed License.”

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Division of Regulatory Improvement Programs
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DATE: January 15, 2002

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE CATAWBA NUCLEAR STATION, UNITS 1 AND 2, AND MCGUIRE NUCLEAR STATION, UNITS 1 AND 2, LICENSE RENEWAL APPLICATION

ORIGINATOR: Rani Franovich

SECRETARY: S. Chey

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ADAMS ACCESSION NUMBER: **ML** DATE ENTERED: / /02

FORM 665 ATTACHED and filled out: **YES NO**

COMMITMENT FORM ATTACHED: **YES NO**