

November 7, 2002

Mr. M. S. Tuckman
Executive Vice-President
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Duke Energy Corporation
P.O. Box 1006 EC07H
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SUBJECT: TREATMENT OF FUSE HOLDERS WITHIN THE SCOPE OF LICENSE
RENEWAL AS LONG-LIVED, PASSIVE COMPONENTS SUBJECT TO AN
AGING MANAGEMENT REVIEW IN THE MCGUIRE AND CATAWBA LICENSE
RENEWAL APPLICATION

Dear Mr. Tuckman:

In a letter dated May 16, 2002, the NRC forwarded to the Nuclear Energy Institute (NEI) and Union of Concerned Scientists, a proposed interim staff guidance (ISG) on screening of electrical fuse holders. The staff position indicated that fuse holders should be identified as within the scope of license renewal and subject to an aging management review (AMR) in the same manner as terminal blocks and other types of electrical connections that are currently being treated in the process. This position only applies to fuse holders that are not part of a larger assembly such as switchgear, power supplies, power inverters, battery chargers, circuit boards, etc. Fuse holders in these types of active components would be considered to be a piece/part of the larger assembly and not subject to an AMR.

The intended functions of a fuse holder are to provide mechanical support for the fuse and to maintain electrical contact with the fuse blades or metal end caps to prevent the disruption of the current path during normal operating conditions when the circuit current is at or below the current rating of the fuse. Fuse holders perform the same primary function as connections of ". . . providing electrical connections to specified sections of an electrical circuit to deliver rated voltage, current, or signals." These intended functions of fuse holders meet the criteria of 10 CFR 54.4(a). In addition, these intended functions are performed without moving parts or without a change in configuration or properties as described in 10 CFR 54.21(a)(1)(i). The fuse holders, into which fuses are placed, are typically constructed of blocks of rigid insulating material, such as phenolic resins. Metallic clamps are attached to the blocks to hold each end of the fuse. The clamps can be spring loaded clips that allow the fuse ferrules or blades to slip in, or they can be bolt lugs to which the fuse ends are bolted. The clamps are typically made of copper.

Operating experience, as discussed in NUREG-1760 (Aging Assessment of Safety-Related Fuses Used in Low- and Medium-Voltage Applications in Nuclear Power Plants), indicates that aging stressors such as vibration, thermal cycling, electrical transients, mechanical stress, fatigue, corrosion, chemical contamination, or oxidation of the connections surfaces can result in fuse holder failure.

M. S. Tuckman

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The final staff position on this issue is under development in discussions with NEI. The staff requests that Duke commit to implement, at McGuire and Catawba, the final resolution of the ISG.

If you have any questions regarding this matter, please call me at 301-415-1868.

Sincerely,

/RA/

Rani Franovich, Project Manager

License Renewal Section

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

cc: See next page

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