Duke Power
A Duke Energy Company

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October 30, 2002

U.S. Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555-0001

Subject: Duke Energy Corporation (DEC)
McGuire Nuclear Station Units 1 and 2
Docket Numbers 50-369 and 50-370
Technical Specifications (TS) Amendment Request for Additional Information (RAI); TS 3.7.15 - Spent Fuel Assembly Storage, and TS 4.3 - Fuel Storage (TAC NOS. MB5014 and MB5015)

Reference: (1) DEC letter to NRC dated August 1, 2000, and (2) DEC letter to NRC dated April 18, 2002

This letter provides additional information that was requested by the NRC staff in a teleconference call on October 9, 2002. The NRC staff's question and DEC's response are stated below.

Question

In the April 18, 2002 McGuire TS License Amendment Request (LAR), which revised the Boraflex threshold from 50% to 40% remaining in Region 2A of the McGuire Spent Fuel Pools (SFP), the boron credit taken for normal storage conditions increased from 730 ppm to 850 ppm. Discuss how this affects the minimum time required to dilute the SFP boron concentration to 850 ppm for the "continuous flow" dilution events described in Attachment 7 of the August 1, 2000 McGuire TS LAR.

Response

In Attachment 3 of the April 18, 2002 TS LAR package, it was noted that the increased normal-condition boron credit of 850 ppm was still below the 937 ppm that was calculated following the worst-case "finite source" dilution event in the McGuire spent fuel pools (water sources from two RHTs and the RWMST, with the cask loading pit isolated).

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Attachment 7 of the August 1, 2000 TS LAR also identified several "infinite source" (or "continuous flow") dilution events involving pipe breaks in the SFP area. Of these, the worst-case event involves a pipe break from the non-seismic fire protection system, as this could deliver the largest flow rate (700 gpm) of unborated water into the SFP. For this dilution event, in conjunction with an isolation of the cask loading pit, calculations in Attachment 7 showed that it would still take at least 10.12 hours to dilute the SFP from an initial boron concentration of 2475 ppm down to 730 ppm. Such a scenario would involve substantial overflow of the SFP, and it was deemed incredible, because numerous indicators such as level alarms, flooding in the auxiliary building, fire protection pump header flow alarms, etc., would alert Operations long before 10 hours had elapsed.

Using the pertinent dilution event equations documented in Attachment 7 of the August 1, 2000 LAR, for the worst-case "continuous flow" event described in the previous paragraph it would take 8.83 hours to dilute the McGuire SFP from an initial boron concentration of 2475 ppm down to 850 ppm. However, the minimum boron concentration currently required for the McGuire SFPs is actually 2675 ppm. Using this higher initial boron concentration, it would take 9.49 hours to dilute the McGuire SFP to 850 ppm in the fire protection system pipe break event. Regardless of which starting boron concentration is used, note that it would take less than two hours before the SFP began to overflow following the initiation of this dilution event, and so plant personnel would be aware of and responding to the event well before the water in the SFP became diluted to 850 ppm.

DEC requests approval of the LAR by December 1, 2002, as previously stated in the April 18, 2002 LAR submittal. Please contact Norman T. Simms of Regulatory Compliance at 704-875-4685 with any questions with respect to this matter.

Very truly yours,

D. M. Jamil

xc:

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Dhiaa M. Jamil, being duly sworn, states that he is Vice President of McGuire Nuclear Station; that he is authorized on the part of Duke Energy Corporation to sign and file with the U.S. Nuclear Regulatory Commission these revisions to the McGuire Nuclear Station Facility Operating Licenses Nos. NPF-9 and NPF-17; and, that all statements and matters set forth therein are true and correct to the best of his knowledge.

Dhiaa M. Jamil, Vice President
McGuire Nuclear Station
Duke Energy Corporation

Subscribed and sworn to before me on October 30, 2002.

Deborah S. Rome
Notary Public Deborah S. Rome

My Commission Expires: December 19, 2004

bxc:

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