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SUBJECT: Informs of completion of all commitments for McGuire Nuclear Station & revised schedule for completion of commitments for Oconee as listed, re GL 96-04, "Boraflex Degradation in Spent Fuel Storage Racks."

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December 31, 1998

U.S. Nuclear Regulatory Commission
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Subject: Duke Energy Corporation
Oconee Nuclear Station
Docket Numbers 50-269, -270, and -287
McGuire Nuclear Station
Docket Numbers 50-369, and -370
Catawba Nuclear Station
Docket Numbers 50-413, and -414
Generic Letter 96-04, "Boraflex Degradation in Spent
Fuel Storage Racks"

By letter dated December 22, 1997, Duke Energy Corporation (Duke) committed to certain activities in response to the subject Generic Letter which requested affected licensees to provide an assessment of the physical condition of Boraflex used in spent fuel racks. The purpose of this letter is to inform the staff of completion of all commitments for the McGuire Nuclear Station and the revised schedule for completion of the commitments for Oconee as follows:

- a. The RACKLIFE models of the Oconee pools and plans for future testing based on those models will be completed by April 30, 1999 (previously December 31, 1998).
- b. The Oconee spent fuel pools will be analyzed by December 31, 1999 taking reduced or zero credit for Boraflex (previously December 31, 1998).
- c. The significance of the silica levels present in the Oconee spent fuel pools and how it relates to Boraflex performance will be completed with the RACKLIFE assessments by April 30, 1999 (previously December 31, 1998).

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Note that Catawba Nuclear Station's spent fuel racks do not contain Boraflex and the Generic Letter is, therefore, not applicable to Catawba.

Background

By letters dated October 22, 1996, and December 22, 1997, Duke provided information to the NRC in its response to Generic Letter 96-04, "Boraflex Degradation in Spent Fuel Storage Racks." In these letters, five specific commitments were addressed. These were as follows:

1. A RACKLIFE assessment of all four Oconee and McGuire spent fuel pools will be completed, and plans for future in-situ testing will be developed based upon these results.
2. The Oconee spent fuel storage racks will be analyzed taking reduced or no credit for Boraflex.
3. Demonstration of the EPRI Boraflex Boron Areal Density Gage (BADGER) will be performed for the McGuire Unit 2 spent fuel racks. These results will be compared to the areal density predicted by the RACKLIFE computer code and the RACKLIFE McGuire model will be adjusted, as required.
4. The need/schedule for future in-situ examinations at McGuire will be based upon the BADGER test results and RACKLIFE predictions for the McGuire pools.
5. The significance of the silica levels present in the Oconee and McGuire spent fuel pools and how it relates to Boraflex performance, as well as an assessment of the storage rack reactivity will be completed for all four pools.

Status

McGuire

As noted in the December 22, 1997 letter, the BADGER testing of the McGuire Unit 2 pool, and the resulting adjustments to the

RACKLIFE models for McGuire were completed in 1997 (Items 3 and 4 above).

An additional analysis was performed for the McGuire spent fuel storage racks in 1998. RACKLIFE assessments of future degradation were developed based on the 1997 BADGER test results, silica trends, and continued irradiation. Accordingly, a criticality analysis was developed that conservatively assumes 25% remaining Boraflex in the Region 1 storage racks, and 50% remaining Boraflex in the Region 2 storage racks using the Westinghouse Spent Fuel Rack Criticality Analysis Methodology described in WCAP-14416-NP-A.

A Technical Specification Change Request for McGuire will be submitted to the NRC in the first quarter of 1999. The proposed amendment to the McGuire Technical Specification revises Specification 3.7.15 to define new spent fuel assembly storage limitations which utilize credit for soluble boron for the control of reactivity in the spent fuel pool while retaining the necessary margin of safety. This submittal will address the means and schedule for future verifications to ensure the minimum level of Boraflex assumed in the criticality analysis.

Oconee

Scoping analysis performed in 1998 suggests that zero Boraflex may be feasible in the Oconee spent fuel pools. While impractical for McGuire, it may be feasible for Oconee due to the storage rack design and the greater flexibility afforded for fuel storage patterns.

Analysis of the Oconee storage racks for zero Boraflex will be completed in 1999 and a Technical Specification Change Request for Oconee is planned by December 31, 1999. Similar to the McGuire submittal, it is anticipated that the proposed amendment to the Oconee Technical Specification will define new spent fuel assembly storage limitations that utilize credit for soluble boron for the control of reactivity in the spent fuel pool while retaining the necessary margin of safety. Since this approach would take no credit for Boraflex, ongoing RACKLIFE assessments would be discontinued.


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In the event that zero Boraflex proves to be impractical for Oconee, the Technical Specification Change Request will be based on a reduced level of Boraflex and will include surveillance plans to ensure the assumed level is maintained.

Currently, a RACKLIFE assessment of the Boraflex condition for the Oconee spent fuel pools is being performed by Northeast Technology Corporation. Duke has provided the inputs needed to develop the RACKLIFE model (spent fuel storage rack design data, spent fuel burnup and movement files, reactor operating history, spent fuel pool silica data, etc.). The results of this assessment are expected in the first quarter of 1999. As stated above, Duke's plan is to reanalyze the storage racks with zero credit for Boraflex, and if successful, will discontinue any further RACKLIFE assessments at Oconee.

Please address any questions to Lee Keller at (704) 382-5826.

Sincerely,


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U. S. Nuclear Regulatory Commission
December 31, 1998

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