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May 23, 1988

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

Subject: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287
McGuire Nuclear Station
Docket Nos. 50-369 and 370
Catawba Nuclear Station
Docket Nos. 50-413 and 50-414
Boric Acid Corrosion of Carbon Steel Reactor
Pressure Boundary Components in PWR Plants
(Generic Letter 88-05)

Dear Sir:

By letter dated March 17, 1988, the Nuclear Regulatory Commission (NRC) transmitted the subject Generic Letter 88-05 concerning the boric acid corrosion of carbon steel reactor pressure boundary components in pressurized water reactors (PWRs). The NRC requested information to assess safe operation of PWRs when reactor coolant leaks below technical specification limits develop and the coolant containing dissolved boric acid comes in contact with and degrades low alloy carbon steel components.

In light of a series of nuclear industry's experiences with the boric acid corrosion, the NRC believes that boric acid leakage potentially affecting the integrity of the reactor coolant pressure boundary should be procedurally controlled to ensure continued compliance with the licensing basis. The NRC requested that Duke Power Company (Duke) provide assurances that a program has been implemented consisting of systematic measures to ensure that the reactor coolant pressure boundary will have an extremely low probability of abnormal leakage, rapidly propagating failure, or gross rupture.

Duke Power Company recognizes leaking coolant containing dissolved boric acid can cause carbon steel corrosion. As part of Duke's philosophy and practices for safe operation of its nuclear plants, significant industry events concerning boric acid corrosion have been reviewed and analyzed. In particular, responsive corrective actions in regard to Information Notices (80-27; 82-06; 86-108; and 86-108, Supplements 1 and 2) and Bulletin 82-02 and various INPO SERs have been taken to minimize reactor coolant system leaks and the potential damage to the primary pressure boundary components containing carbon steel.

Implementation of these corrective actions through various programs, such as inspection programs, operating and maintenance procedures, performance testing, and training have substantially reduced leakage at Duke's nuclear stations.

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Some examples of efforts to control boric acid corrosion include: 1) upgrading of steam generator manway installation procedures which address tensioning, lubricants, gaskets and gaskets surface preparation, stud materials, and stud coating, 2) extensive upgrades and comprehensive inspections of reactor coolant pumps at each outage with detailed inspections and evaluation for possible damage if boric acid build-up is present, and 3) enhanced valve inspection and maintenance programs.

In addition, implementation of procedures such as reactor coolant system (RCS) leak test, containment cleanliness inspection and visual inspection of radioactive systems outside containment assure that borated water leaks are identified and evaluated for corrective actions. Furthermore, Operation groups make hot shutdown tours to inspect and initiate repair as necessary for any RCS leakage.

The current programs at Duke collectively address the concerns of Generic Letter 88-05. However, Duke recognizes the need for an auditable and systematic program through enhancement of the existing programs and procedures to address the corrosive effects of reactor coolant system leakage at less than Technical specification limit. Duke intends to develop and implement such a program based on the current practices at Duke and applicable industry recommendations concerning potential boric acid corrosive effects on carbon steel components in PWRs. Duke will provide schedular information for development and implementation of enhanced programs and procedures and a detailed response to Generic Letter 88-05 by August 1, 1988.

Very truly yours,

Hal B. Tucker

Hal B. Tucker

MAH/11/sbn

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