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A Centerior Energy Company

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Docket No. 50-346

License No. NPF-3

Serial No. 1527

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United States Nuclear Regulatory Commission
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Washington, D. C. 20555

Subject: Response to Generic Letter 88-05, Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary Components in PWR Plants

Gentlemen:

Pursuant to 10CFR50.54(f), enclosed is Toledo Edison's response to Generic Letter 88-05, Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary Components in PWR Plants, dated March 17, 1988 (Log No. 2532).

The programs and procedures discussed in the enclosure to this letter address the issues raised in Generic Letter 88-05. These programs and procedures utilize systematic measures to ensure that boric acid corrosion does not lead to degradation of the reactor coolant pressure boundary, and assure that the reactor coolant pressure boundary will have an extremely low probability of abnormal leakage, rapidly propagating failure, or gross rupture.

Very truly yours,

CAB:tlt

Enclosure

cc: A. W. DeAgazio, NRC/NRR Davis-Besse Project Manager
A. B. Davis, Region III Regional Administrator (2 copies)
DB-1 Resident Inspector

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Docket No. 50-346
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Enclosure

RESPONSE TO GENERIC LETTER 88-05,

"BORIC ACID CORROSION OF CARBON STEEL REACTOR PRESSURE

BOUNDARY COMPONENTS IN PWR PLANTS"

FOR

DAVIS-BESSE NUCLEAR POWER STATION

UNIT NO. 1

Attached is Toledo Edison's response to Generic Letter 88-05, Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary Components in PWR Plants. This response is submitted pursuant to 10CFR50.54(f).

By: _____
D. C. Shelton, Vice President, Nuclear

Sworn and subscribed before me this 27th day of May, 1988.

_____
Notary Public, State of Ohio

LAURIE A. HINKLE
Notary Public, State of Ohio
My Commission Expires May 15, 1991

RESPONSE TO GENERIC LETTER 88-05

Generic Letter 88-05 "Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary Components in PWR Plants" requested that Toledo Edison provide assurances that a program has been implemented consisting of systematic measures to ensure that boric acid corrosion does not lead to degradation of the assurance that the reactor coolant pressure boundary will have an extremely low probability of abnormal leakage, rapidly propagating failure, or gross rupture. Generic Letter 88-05 stated that the program should include the following:

1. A determination of the principal locations where leaks that are less than the allowable Technical Specification limit can cause degradation of the primary pressure boundary by boric acid corrosion. Particular consideration should be given to identifying those locations where conditions exist that could cause high concentrations of boric acid on pressure boundary surfaces.

2. Procedures for locating small coolant leaks (i.e., leakage rates at less than Technical Specification limits). It is important to establish the potential path of the leaking coolant and the reactor pressure boundary components it is likely to contact. This information is important in determining the interaction between the leaking coolant and reactor coolant pressure boundary materials.

3. Methods for conducting examinations and performing engineering evaluations to establish the impact on the reactor coolant pressure boundary when leakage is located. This should include procedures to promptly gather the necessary information for an engineering evaluation before the removal of evidence of leakage, such as boric acid crystal buildup.

4. Corrective actions to prevent recurrences of this type of corrosion. This should include any modifications to be introduced in the present design or operating procedures of the plant that (a) reduce the probability of primary coolant leaks at the locations where they may cause corrosion damage and (b) entail the use of suitable corrosion resistant materials or the application of protective coatings/claddings.

Toledo Edison has several programs and procedures in place that ensure compliance with the above requirements, rather than a singular Boric Acid Corrosion Program. These programs and procedures are discussed below:

A. Leakage Management Program - As a result of Reactor Coolant System (RCS) leakage during early 1987, Toledo Edison established a Leakage Management Policy. This policy is used to evaluate changes in RCS leakage rates which are below the Technical

Specification limits. This policy incorporates the need to identify the location of the leakage and for Engineering to evaluate the boric acid concerns. This policy has been incorporated into the Operations Standing Order Book as SO 87-015.

B. PP1102.10, Plant Shutdown Procedure - As a result of concern for RCS leakage during early 1987, Toledo Edison developed a containment valve walkdown list. This list was utilized during shutdowns in 1987 to identify leaking valves in containment. Leaking valves were repaired during the outage resulting in a significant reduction in the amount of leakage from valves inside containment. This walkdown procedure was subsequently incorporated into the Plant Shutdown Procedure such that during shutdowns under this procedure, approximately 375 valves inside containment are inspected at full temperature and pressure unless the shutdown cannot be delayed or the containment is inaccessible. The inspection is performed to identify leaking valves so that they can be repaired, if necessary. In addition to valves, a general walkdown of containment is specified and leakage observed is evaluated by Engineering.

C. ST5066.00, ASME Section XI Inservice Pressure Tests - This procedure is used to verify the integrity of Class 1, 2, and 3 system components in accordance with Technical Specification 4.0.5a.2, ASME Section XI, 1977, Rules for Inservice Inspection of Nuclear Power Plant Components, Summer 1978 Addenda. This procedure calls for visual inspection of components during a pressure test. The examination includes looking for discoloration which would indicate boric acid accumulation. Actions to be taken in the event boric acid residue is identified include: locating the source of leakage; determining the extent of degradation, if any; and repairing as required.

D. Control Rod Drive (CRD) Flanges - The CRD flanges are currently inspected for leakage each refueling outage as corrective maintenance. Currently, gaskets are replaced on joints which have indication of leakage. This work is incorporated into the Preventative Maintenance (PM) Program as a refueling outage PM.

E. IE Bulletin No. 82-02, Degradation of Threaded Fasteners in the Reactor Coolant Pressure Boundary of PWR Plants - This bulletin was issued to licensees and construction permit holders as a result of a number of incidents in which severe degradation of threaded fasteners in closures in the Reactor Coolant Pressure Boundary was found. The actions included inspection of fasteners when removed and periodic inspection of fasteners for degradation. These actions were addressed by Toledo Edison in Serial No. 1-284, dated August 4, 1982, and incorporated into the appropriate maintenance procedures.

F. Thermographic Inspection - Toledo Edison has commenced utilizing a thermographic inspection method in the Turbine Building for locating steam leaks. Several limited thermographic inspections,

inside containment, are planned as part of the current outage. Depending on the results obtained, thermographic inspections will be evaluated for use in the future as an aid in identifying leaks under insulation.

G. Live Load Packing of Valves - Toledo Edison has been actively pursuing a valve packing program. To date, this has included a change out of the original packing to a graphite packing in several valves. In an effort to further eliminate valve stem leakage, Toledo Edison is live load packing a number of valves. The valve priority was determined based on leakage history. Should this method prove to be a viable method of stopping leaking it will be utilized on other valves.

The programs and procedure discussed above address the issues raised in Generic Letter 88-05. These programs and procedures utilize systematic measures to ensure that boric acid corrosion does not lead to degradation of the reactor coolant pressure boundary, and assure that the reactor coolant pressure boundary will have an extremely low probability of abnormal leakage, rapidly propagating failure or gross rupture.