

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

5N 157B Lookout Place U

May 13, 1986

Jupe
PDR

U.S. Nuclear Regulatory Commission
Region II
Attn: Dr. J. Nelson Grace, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Dear Dr. Grace:

50-259'E

OFFICE OF INSPECTION AND ENFORCEMENT BULLETIN 85-03 - MOTOR-OPERATED VALVE
COMMON MODE FAILURES DURING PLANT TRANSIENTS DUE TO IMPROPER SWITCH SETTINGS -
BROWNS FERRY NUCLEAR PLANT

The purpose of this letter is to provide an interim response to IE Bulletin 85-03 dated November 15, 1985. Enclosure 1 contains that information. The supplemental information will be provided by October 1, 1986. Enclosure 2 identifies the commitments made in enclosure 1.

If there are any questions, please telephone W. C. Ludwig at FTS 858-2882.

To the best of my knowledge, I declare the statements contained herein are complete and true.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

R. Gridley

R. Gridley, Director
Nuclear Safety and Licensing

Enclosures

cc (Enclosures):

Mr. James Taylor, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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

8607230424 860513
PDR ADCK 05000259
Q PDR

Official Copy



BROWNS FERRY NUCLEAR PLANT (BFN)
RESPONSE TO IE BULLETIN 85-03Item a

Review and document the design basis for the operation of each valve. This documentation should include the maximum differential pressure expected during both opening and closing the valve for both normal and abnormal events to the extent that the valve operations and events are included in the existing, approved design basis, (i.e., the design basis documented in pertinent licensee submittals such as FSAR analyses and fully-approved operating and emergency procedures, etc.). When determining the maximum differential pressure, those single equipment failures and inadvertent equipment operations (such as inadvertent valve closures or openings) that are within the plant design basis should be assumed.

Response To Item a

Item a requires review and documentation of the design basis for operation of each valve identified to be within the scope of the bulletin. The systems and valves considered within the bulletin scope are summarized below. This is followed by the results to date of the design basis review on each of the identified valves.

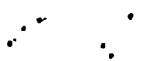
Scope of the Bulletin

The scope of this review includes those valves in the High-Pressure Coolant Injection and Reactor Core Isolation Cooling Systems which require inservice testing in accordance with Section XI of the ASME code. These valves have been identified and are listed in table 1. Note that our inservice testing program is in process of revision and table 1 reflects the most recent version of the program which has not yet been submitted to NRC.

Valve Design Basis

In addition to providing a list of valves within the scope of the bulletin, table 1 provides a brief description of each valve, its normal position and safety function. The remaining portion of bulletin item a, documentation of the maximum expected differential pressures for each of the subject valves, depends upon the results of the Boiling Water Reactor Owners' Group (BWROG) efforts in this area. The remaining information required for item a will be developed through our participation in a BWROG activity to establish a generic basis as described in a letter from J. M. Fulton of the BWROG to J. M. Taylor dated April 29, 1986 (Attachment 1). The supplemental information will be provided by October 1, 1986.

The delay in providing a complete response to item a is not expected to impact the overall completion schedule for the program and is expected to result in a more sound and consistent basis for the program. Additionally, the torque switch has been removed from the opening circuit of many safety-related valves in order to preclude the specific failure which occurred in the Davis-Besse event.



Item b

Using the results from item a above, establish the correct switch settings. This shall include a program to review and revise, as necessary, the methods for selecting and setting all switches (i.e., torque, torque bypass, position limit, overload) for each valve operation (opening and closing).

If the licensee determines that a valve is inoperable, the licensee shall also make an appropriate justification for continued operation in accordance with the applicable technical specification.

Item c

Individual valve settings shall be changed, as appropriate, to those established in item b, above. Whether the valve setting is changed or not, the valve will be demonstrated to be operable by testing the valve at the maximum differential pressure determined in item a above with the exception that testing motor-operated valves under conditions simulating a break in the line containing the valve is not required. Otherwise, justification should be provided for any cases where testing with the maximum differential pressure testing which will be used to verify the correct settings.

Note: This bulletin is not intended to establish a requirement for valve testing for the condition simulating a break in the line containing the valve. However, to the extent that such valve operation is relied upon in the design basis, a break in the line containing the valve should be considered in the analyses prescribed in items a and b above. The resulting switch settings for pipe break conditions should be verified, to the extent practical, by the same methods that would be used to verify other settings (if any) that are not tested at the maximum differential pressure.

Each valve shall be stroke tested, to the extent practical, to verify that the settings defined in item b above have been properly implemented even if testing with differential pressure can not be performed.

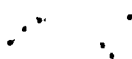
Item d

Prepare or revise procedures to ensure that correct switch settings are determined and maintained through the life of the plant. Ensure that applicable industry recommendations are considered in the preparation of these procedures.

Responses To b, c, and d

The program needed to carry out the requirements of items b through d at BFN will be broken down into four distinct elements. These program elements are:

1. Review and establishment of correct valve switch settings.
2. Implementation of any revised switch settings.
3. Differential pressure testing to verify the established switch settings are correct or justification of the acceptability of those which cannot be tested, and
4. Implementation of any required procedures and/or procedure revisions necessary to ensure the correct switch settings can be maintained through the life of the plant.



When complete, these four program elements will meet the full intent of items b through d as stated in the bulletin. The current schedule for completion of each of the program elements is as follows:

Program Element 1 - October 31, 1986

Program Element 2 - January 7, 1987

Program Element 3 - June 4, 1987

Program Element 4 - September 3, 1987

This schedule is based on current estimates of minimal hardware deficiencies and in anticipation of successful differential pressure testing. Completion of individual program elements may require changes based on the results of our analysis and testing.

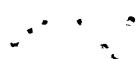
Table 1

Valve Unique No.	Valve Description	Normal Position	Safety Function Description
71-2	RCIC steam isolation valve	Open	Valve must close and isolate containment on RCIC steam line break.
71-3	RCIC steam isolation valve	Open	Valve must close and isolate containment on RCIC steam line break.
71-8	RCIC steam supply valve	Closed	Valve must open on RCIC initiation to supply reactor steam to the turbine.
71-9	RCIC turbine stop valve	Open	Valve must spring close on RCIC isolation signal to stop the turbine.
71-17	RCIC suction valve to the suppression pool	Closed	Valve must close if opened and containment isolation is required.
71-18	RCIC suction valve to the suppression pool	Closed	Valve must close if opened and containment isolation is required.
71-19	RCIC suction valve to the condensate storage tank	Open	Valve must close when RCIC is aligned to take suction from the suppression pool.
71-25	RCIC cooling water supply valve	Closed	Valve must open on RCIC initiation to ensure an adequate cooling supply.
71-34	RCIC minimum recirculation flow valve	Closed	Must both open and close to provide adequate pump recirculation flow and adequate system flow to the vessel, respectively.
71-38	RCIC test return to condensate	Closed	Valve must close on an initiation signal while in the test return mode to ensure adequate flow to the reactor vessel.
71-39	RCIC discharge injection valve	Closed	Valve must open on RCIC initiation to inject water to the reactor vessel through the feedwater system.



**Table 1
(Continued)**

Valve Unique No.	Valve Description	Normal Position	Safety Function Description
73-2	HPCI steam isolation valve	Open	Valve must close to isolate containment in case of a HPCI steam line break.
73-3	HPCI steam isolation valve	Open	Valve must close to isolate containment in case of a HPCI steam line break.
73-16	HPCI steam supply valve	Closed	Valve must open on HPCI initiation to supply reactor steam to the turbine.
73-26	HPCI suction valve to the suppression pool	Closed	Must open to allow the HPCI pump to take suction from the torus and must close if isolation of primary containment is required.
73-27	HPCI suction valve to the suppression pool	Closed	Must open to allow the HPCI pump to take suction from the torus and must close if isolation of primary containment is required.
73-30	HPCI minimum recirculation flow valve	Closed	Must both open and close to provide adequate pump recirculation flow and adequate cooling flow to the reactor vessel respectively.
73-35	HPCI test return to condensate	Closed	Must close on HPCI initiation to ensure adequate flow to the reactor vessel.
73-40	HPCI suction valve to the condensate storage tank	Open	Valve must close when HPCI is aligned to take suction from the suppression pool.
73-44	HPCI discharge injection valve	Closed	Must open on HPCI initiation to inject water to the reactor vessel through the feedwater system.
73-81	HPCI steam supply bypass valve	Open	Must close to isolate primary containment on a HPCI steam line break.



ENCLOSURE 2

BROWNS FERRY NUCLEAR PLANT (BFN)
LIST OF COMMITMENTS MADE IN ENCLOSURE 1

1. Provide the remaining information for item a as requested in the bulletin by October 1, 1986.
2. BFN will review and establish the correct valve switch settings by October 1, 1986.
3. BFN Will implement any required switch settings by January 7, 1987.
4. BFN will perform differential pressure testing to verify the established switch settings are correct or justification of the acceptability of those which cannot be tested by June 4, 1987.
5. BFN will implement any required procedures and/or procedure revisions necessary to ensure the correct switch setting can be maintained throughout the life of the plant by September 3, 1987.

