

May 5, 2004

U.S. Nuclear Regulatory Commission
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Gentlemen:

In the Matter of) Docket No. 50-259
Tennessee Valley Authority)

**BROWNS FERRY NUCLEAR PLANT (BFN) UNIT 1 - GENERIC LETTER 89-10 AND
SUPPLEMENTS 1 to 7, SAFETY-RELATED MOTOR-OPERATED VALVE (MOV)
TESTING AND SURVEILLANCE**

This letter provides an updated response to NRC Generic Letter 89-10 and Supplements 1 through 7, *Safety-Related Motor-Operated Valve (MOV) Testing and Surveillance*, for BFN Unit 1.

On June 28, 1989, NRC issued Generic Letter 89-10, which notified licensees of the need to develop and implement a comprehensive MOV testing and surveillance program. While TVA initially responded to the Generic Letter for all three BFN units, TVA's response to an NRC Inspector's Followup Item only applied to the Units 2 and 3 program. Therefore, Enclosure 1 of this letter summarizes the previous TVA/NRC correspondence on Generic Letter 89-10 and provides an updated response for Unit 1.

The Generic Letter 89-10 program for BFN Unit 1 has been developed. TVA's review and documentation of the design basis for the operation of each Unit 1 MOV within the scope of the Generic Letter 89-10 program, the valves included in the program, the methods for determining and adjusting switch settings, testing, surveillance, and maintenance are the same as with the Units 2 and 3 program. As discussed in NRC Manual Chapter 2509, *Browns Ferry Unit 1 Restart Project Inspection Program*, since the Generic Letter 89-10 programmatic aspects were verified by NRC inspections for the restarts of Browns Ferry Units 2 and 3, the program does not have to be re-reviewed or re-verified for

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Unit 1. NRC inspection requirements for the Unit 1 Generic Letter 89-10 program should focus on its implementation.

MOV switch settings will be set prior to restart utilizing the latest accuracy information. However, it will be necessary to perform delta-pressures (dp) testing for some MOVs during the power ascension test program following unit criticality. Consequently, TVA committed in Reference 1 to complete the required testing on Unit 1 within 30 days following completion of the power ascension test program. This is consistent with the Generic Letter 89-10 program for Units 2 and 3.

There are also 18 specific valves that are not in the Generic Letter 89-10 program, since the valves are normally in their safety position. TVA will revise the appropriate Unit 1 plant procedures prior to restart to require that the affected system or train be declared inoperable when these valves are not in their normal (i.e., safety) position. This is also consistent with the agreements reached with NRC during the review of the Generic Letter 89-10 program for Units 2 and 3 (Reference 2).

As previously committed (Reference 3), BFN Unit 1 will implement the Joint Owners Group recommended Generic Letter 96-05 Motor Operated Valves Periodic Verification Program, as described in Topical Report NEDC 32719 (MPR Report 1807), and begin testing during the first refueling outage after restart.

A summary of the commitments contained in this letter is provided in Enclosure 2. If you have any questions about this submittal, please contact me at (256) 729-2636.

I declare under penalty of perjury that the foregoing is true and correct. Executed on May 5, 2004.

Sincerely,

Original signed by:

T. E. Abney
Manager of Licensing
and Industry Affairs

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References:

1. TVA letter, O. J. Zeringue, "Browns Ferry Nuclear Plant (BFN) - Generic Letter (GL) 89-10, Safety-Related Motor-Operated Valve Testing and Surveillance Implementation Schedule [TAC Nos. 75635, 75636, and 75637]," April 14, 1992.
2. TVA letter, T. E. Abney, Browns Ferry Nuclear Plant (BFN) - Units 2 and 3 - Generic Letter (GL) 89-10, Safety-Related Motor-Operated Valve Testing and Surveillance, Status of Actions for Program Closure [TAC Nos. 75636, and 75637], December 15, 1997.
3. TVA letter, "Browns Ferry Nuclear Plant (BFN) (TAC NOS. M97020, M97021, M97022), Sequoyah Nuclear Plant (SQN), Watts Bar Nuclear Plant (WBN), and Bellefonte Nuclear Plant (BLN) Response to NRC's Safety Evaluation dated October 30, 1997, on Joint Owners Group's (JOG) Program for Generic Letter (GL) 96-05, "Periodic Verification (PV) of Motor-Operated Valves (MOV)" Described in Topical Report MPR-1807 (Revision 2), April 28, 1998.

cc: See Page 4

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ENCLOSURE 1
TENNESSEE VALLEY AUTHORITY
BROWN FERRY NUCLEAR (BFN) UNIT 1

RESPONSE TO NRC GENERIC LETTER 89-10
SAFETY-RELATED MOTOR-OPERATED VALVE TESTING AND SURVEILLANCE

BACKGROUND

On June 28, 1989, NRC issued Generic Letter (GL) 89-10, notifying licensees of the need to develop and implement a comprehensive motor operated valve (MOV) testing and surveillance program. TVA responded to GL 89-10 for BFN Units 1, 2 and 3 in References 1 and 2. In Reference 2, TVA stated that the GL 89-10 program for BFN Units 1, 2, and 3 was complete and available for review and that the requirements of GL 89-10 would be implemented for Unit 1 prior to restart. In Reference 3, TVA noted that it would be necessary to perform dp testing for some MOVs during the power ascension test program following unit criticality. Consequently, TVA planned to complete the required testing on Unit 1 within 30 days following completion of the power ascension test program.

Supplement 1 to Generic Letter 89-10 provided the results the public workshops. Supplement 2 to Generic Letter 89-10 revised the date licensees were requested to have their MOV program descriptions available onsite. No response to Supplements 1 and 2 were required.

In Supplement 3 to GL 89-10, BWR licensees were requested to assess the applicability of the data from the NRC-sponsored MOV tests, to determine the "as-is" capability of the High Pressure Coolant Injection (HPCI), Reactor Core Isolation Cooling (RCIC), and Reactor Water Cleanup (RWCU) MOVs described herein, and to identify any deficiencies in those MOVs. Where applicable, BWR licensees were also requested to evaluate the MOVs used for containment isolation in lines to the isolation condensers. TVA provided the requested information for all three units in Reference 4 and noted that BFN does not have an isolation condenser.

In Supplement 4 to GL 89-10, the NRC informed licensees that the staff no longer considered the recommendations for inadvertent operation of MOVs from the control room to be within the scope of GL 89-10 for BWRs. No response from TVA was required.

In Supplement 5 to GL 89-10, licensees were requested to reexamine their MOV programs and to identify measures taken or planned to account for uncertainties in properly setting valve operating thrust to ensure operability. TVA responded in Reference 5 for all three units and summarized the actions taken to address MOVATS inaccuracies. For Unit 1, TVA stated that switch settings would be set up prior to restart utilizing the latest accuracy information.

In Supplement 6 to GL 89-10, the staff clarified its positions on the schedule for completing the MOV testing, the grouping of MOVs to establish valve setup conditions, and provided the staff's responses to other general public questions. In Supplement 7 to GL 89-10, the NRC revised its position regarding valve mispositioning for pressurized-water reactors (PWRs). Neither Supplements 6 nor 7 required a response from TVA.

NRC's inspection of the GL 89-10 program for Units 2 and 3 was documented in Inspection Report 95-19. In response to the NRC's Inspector Followup Item, TVA added 15 MOVs to the BFN Units 2 and 3 GL 89-10 program (Reference 6). Plant procedures for 18 other MOVs were revised to require that the affected system or train be declared inoperable when the valves are taken out of their normal (i.e., safety) position for testing. Once declared inoperable, the applicable BFN Technical Specification Limiting Conditions for Operation governs until testing is completed and the valve is returned to its normal position.

RESPONSE TO GENERIC LETTER 89-10 AND SUPPLEMENTS FOR UNIT 1

The Unit 1 Flow Diagrams were compared with the Unit 2 Flow Diagrams to determine location, applicability and function of the MOVs in various plant systems. The 51 Unit 1 valves in the BFN GL 89-10 program are the same as those for Units 2 and 3. Below is a listing of the BFN GL 89-10 program valves and their functions.

UNID	FUNCTION
FCV-01-55	Main Steam Drain Line Isolation Valve
FCV-01-56	Main Steam Drain Line Isolation Valve
FCV-23-34	Residual Heat Removal Service Water (RHRSW) Throttle Valve to RHR A Heat Exchanger
FCV-23-40	RHRSW Throttle Valve to RHR C Heat Exchanger
FCV-23-46	RHRSW Throttle Valve to RHR B Heat Exchanger
FCV-23-52	RHRSW Throttle Valve to RHR D Heat Exchanger
FCV-68-03	Recirculation Pump A Discharge Isolation Valve
FCV-68-79	Recirculation Pump B Discharge Isolation Valve
FCV-69-01	RWCU Primary Containment Isolation Valve
FCV-69-02	RWCU Primary Containment Isolation Valve

UNID	FUNCTION
FCV-70-47	RBCCW Primary Containment Isolation Valve
FCV-71-02	RCIC Steam Line Primary Containment Isolation Valve
FCV-71-03	RCIC Steam Line Primary Containment Isolation Valve
FCV-71-08	RCIC Turbine Steam Supply Valve
FCV-71-25	RCIC Lube Oil Cooling Water Supply Valve
FCV-71-34	RCIC Pump Minimum Flow Valve
FCV-71-38	RCIC Test Return Valve
FCV-71-39	RCIC System Injection valve
FCV-73-02	HPCI Steam Line Primary Containment Isolation Valve
FCV-73-03	HPCI Steam Line Primary Containment Isolation Valve
FCV-73-16	HPCI Turbine Steam Supply Valve
FCV-73-26	HPCI Pump Torus Suction Valve
FCV-73-27	HPCI Pump Torus Suction Valve
FCV-73-30	HPCI Pump Minimum Flow Valve
FCV-73-35	HPCI Test Return Valve
FCV-73-36	HPCI/RCIC Test Return Valve
FCV-73-40	HPCI Pump CST Suction Valve
FCV-73-44	HPCI System Injection Valve
FCV-73-81	HPCI Steam Line Primary Containment Isolation Valve
FCV-74-07	RHR Loop I Minimum Flow Valve
FCV-74-30	RHR Loop II Minimum Flow Valve
FCV-74-47	RHR Shutdown Cooling Containment Isolation Valve
FCV-74-48	RHR Shutdown Cooling Containment Isolation Valve
FCV-74-53	RHR Loop I LPCI Injection Valve
FCV-74-57	RHR Loop I Pump Discharge to Torus
FCV-74-58	RHR Loop I Torus Spray Valve
FCV-74-59	RHR Loop I Test Return Valve
FCV-74-60	RHR Loop I Drywell Spray Valve
FCV-74-61	RHR Loop I Drywell Spray Valve
FCV-74-67	RHR Loop II LPCI Injection Valve
FCV-74-71	RHR Loop II Pump Discharge to Torus
FCV-74-72	RHR Loop II Torus Spray Valve
FCV-74-73	RHR Loop II Test Return Valve
FCV-74-74	RHR Loop II Drywell Spray Valve
FCV-74-75	RHR Loop II Drywell Spray Valve
FCV-75-09	Core Spray Loop I Minimum Flow Valve
FCV-75-22	Core Spray Loop I Test Return Valve
FCV-75-25	Core Spray Loop I Injection Valve
FCV-75-37	Core Spray Loop II Minimum Flow Valve
FCV-75-50	Core Spray Loop II Test Return Valve
FCV-75-53	Core Spray Loop II Injection Valve

TVA's review and documentation of the design basis for the operation of each Unit 1 MOV within the scope of the GL 89-10 program, the methods for determining and adjusting its switch settings, testing, surveillance and maintenance are the same as with the Units 2 and 3 program.

In Reference 6, TVA provided a list of 18 valves for Units 2 and 3 that were not in the GL 89-10 program, since the valves are normally in their safety position. However, during any testing of these valves, TVA stated that the affected system or train would be declared inoperable and the applicable TS LCO would govern until the valve is tested and declared operable. The following is the list of those 18 valves. TVA will revise the appropriate Unit 1 plant procedures prior to restart to require that the affected system or train be declared inoperable when the subject valves are not in their normal (i.e., safety) position.

UNID	FUNCTION
FCV-71-09	RCIC Turbine Trip Valve
FCV-71-17	RCIC Pump Suction from Torus
FCV-71-18	RCIC Pump Suction from Torus
FCV-71-19	RCIC Pump Suction from Condensate Storage Tank
FCV-71-37	RCIC Pump Discharge Valve
FCV-73-34	HPCI Pump Discharge Valve
FCV-74-01	RHR Pump Suction from Torus
FCV-74-12	RHR Pump Suction from Torus
FCV-74-24	RHR Pump Suction from Torus
FCV-74-35	RHR Pump Suction from Torus
FCV-74-52	RHR Loop I LPCI Throttle Valve
FCV-74-66	RHR Loop II LPCI Throttle Valve
FCV-75-02	Core Spray Pump Suction from Torus
FCV-75-11	Core Spray Pump Suction from Torus
FCV-75-30	Core Spray Pump Suction from Torus
FCV-75-39	Core Spray Pump Suction from Torus
FCV-75-23	Core Spray Loop I Outboard Injection Valve
FCV-75-51	Core Spray Loop II Outboard Injection Valve

CONCLUSION

The GL 89-10 program for BFN Unit 1 has been developed and is available for NRC review. Switch settings will be set prior to restart utilizing the latest accuracy information. It will be necessary to perform dp testing for some MOVs during the power ascension test program following unit criticality. Consequently, TVA will complete the required testing on Unit 1 within 30 days following completion of the power ascension test program.

There are 18 specific valves that are not in the GL 89-10 program, since the valves are normally in their safety position. TVA will revise the appropriate Unit 1 plant procedures prior to restart to require that the affected system or train be declared inoperable when these valves are not in their normal (i.e., safety) position.

TVA's review and documentation of the design basis for the operation of each Unit 1 MOV within the scope of the GL 89-10 program, the methods for determining and adjusting its switch settings, testing, surveillance and maintenance are the same as with the Units 2 and 3 program.

As previously committed (Reference 9), BFN Unit 1 will implement the Joint Owners Group recommended GL 96-05 Motor Operated Valves Periodic Verification Program, as described in Topical Report NEDC 32719 (MPR Report 1807), and begin testing during the first refueling outage after restart.

REFERENCES

1. TVA letter, M. J. Ray to NRC, "Browns Ferry Nuclear Plant (BFN), Sequoyah Nuclear Plant (SQN), and Watts Bar Nuclear (WBN) - Response to Generic Letter (GL) 89-10 - Safety-Related Motor-Operated Valve (MOV) Testing and Surveillance," December 21, 1989.
2. TVA letter, E. G. Wallace to NRC, "Browns Ferry Nuclear Plant (BFN) - Response to Generic Letter (GL) 89-10, "Safety-Related Motor-Operated Valve Testing and Surveillance [TAC Nos. 75635, 75636, and 75637]," December 21, 1990.
3. TVA letter, O. J. Zeringue to NRC, "Browns Ferry Nuclear Plant (BFN) - Generic Letter (GL) 89-10, Safety-Related Motor-Operated Valve Testing and Surveillance Implementation Schedule [TAC Nos. 75635, 75636, and 75637]," April 14, 1992.
4. TVA letter, E. G. Wallace to NRC, "Browns Ferry Nuclear Plant (BFN) - Response to Generic Letter (GL) 89-10, Supplement 3 - Consideration of the Results of NRC-Sponsored Tests of Motor-Operated Valves (MOV)," December 10, 1990.
5. TVA letter, C. R. Davis to NRC, "Response to Generic Letter (GL) 89-10, Supplement 5, Inaccuracy of Motor-Operated Valve (MOV) Diagnostic Equipment," September 28, 1993.

6. TVA letter, T. E. Abney to NRC, "Browns Ferry Nuclear Plant (BFN) - Unit 2 and 3 - Generic Letter (GL) 89-10, Safety-Related Motor-Operated Valve (MOV) Testing and Surveillance, NRC Inspector Followup Item (IFI) 50-260, 296/95-19-01, Response to Request for Reevaluation Regarding Reduced Scope of MOVs," January 6, 1997.
7. TVA letter, T. E. Abney to NRC, "Browns Ferry Nuclear Plant (BFN) - Units 2 and 3 - Generic Letter (GL) 89-10, Safety-Related Motor-Operated Valve Testing and Surveillance, Status of Actions for Program Closure [TAC Nos. 75636, and 75637]," December 15, 1997.
8. TVA letter, C. M. Crane to NRC, "Browns Ferry Nuclear Plant (BFN) - Reply to Requested Information in Inspection Report 50-259, 260, 296/98-03," July 16, 1998.
9. TVA letter, "Browns Ferry Nuclear Plant (BFN) (TAC NOS. M97020, M97021, M97022), Sequoyah Nuclear Plant (SQN), Watts Bar Nuclear Plant (WBN), and Bellefonte Nuclear Plant (BLN) Response to NRC's Safety Evaluation dated October 30, 1997, on Joint Owners Group's (JOG) Program for Generic Letter (GL) 96-05, "Periodic Verification (PV) of Motor-Operated Valves (MOV)" Described in Topical Report MPR-1807 (Revision 2), April 28, 1998.

**ENCLOSURE 2
TENNESSEE VALLEY AUTHORITY
BROWN FERRY NUCLEAR (BFN) UNIT 1**

**RESPONSE TO NRC GENERIC LETTER 89-10
SAFETY-RELATED MOTOR-OPERATED VALVE TESTING AND SURVEILLANCE**

COMMITMENT SUMMARY

BFN will revise plant procedures for Unit 1 prior to restart to require that the applicable system, or train, be declared inoperable when the eighteen valves, listed below, are not in their normal (i.e., safety) position.

FCV-71-09	FCV-71-17	FCV-71-18	FCV-71-19
FCV-71-37	FCV-73-34	FCV-74-01	FCV-74-12
FCV-74-24	FCV-74-35	FCV-74-52	FCV-74-66
FCV-75-02	FCV-75-11	FCV-75-30	FCV-75-39
FCV-75-23	FCV-75-51		