July 11, 2000

Mr. Randall K. Edington
Vice President - Operations
Entergy Operations, Inc.
River Bend Station
P. O. Box 220
St. Francisville, LA 70775

SUBJECT: RIVER BEND STATION, UNIT 1 - RE: SAFETY EVALUATION OF LICENSEE RESPONSE TO GENERIC LETTER 96-05, "PERIODIC VERIFICATION OF DESIGN-BASIS CAPABILITY OF SAFETY-RELATED MOTOR-OPERATED VALVES" (TAC NO. M97093)

Dear Mr. Edington:

On September 18, 1996, the U.S. Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 96-05, "Periodic Verification of Design-Basis Capability of Safety-Related Motor-Operated Valves," requesting each nuclear power plant licensee to establish a program, or to ensure the effectiveness of its current program, to verify on a periodic basis that safety-related motor-operated valves (MOVs) continue to be capable of performing their safety functions within the current licensing bases of the facility.

On November 15, 1996, Entergy Operations, Inc. (the licensee), submitted a 60-day response to GL 96-05, notifying the NRC that it was preparing a MOV periodic verification program for the River Bend Station, Unit 1 (River Bend). On March 17, 1997, the licensee submitted a 180-day response to GL 96-05, providing a summary description of the MOV periodic verification program to ensure that the long-term design-basis capability of the safety-related MOVs at River Bend are within the scope of GL 96-05. In a letter dated January 11, 1999, the licensee updated its commitment to GL 96-05. On April 14 and May 26, 2000, the licensee responded to a request for additional information regarding GL 96-05, forwarded by NRC letter dated December 15, 1999.

The NRC staff has reviewed the licensee's submittals and applicable NRC inspection reports for the MOV program at River Bend and finds that the licensee has established an acceptable program to verify, periodically, the design-basis capability of the safety-related MOVs at River Bend, through its commitment to all three phases of the Joint Owners Group (JOG) Program on MOV Periodic Verification and the additional actions described in its submittals. As discussed in the attached safety evaluation (SE), the NRC staff concludes that the licensee is adequately addressing the actions requested in GL 96-05. The NRC staff may conduct inspections at River Bend to verify that implementation of the MOV periodic verification program is in accordance with the licensee's commitments, the enclosed NRC SE, the NRC SE dated October 30, 1997, on the JOG Program on MOV Periodic Verification, and the NRC SE dated February 27, 1996, on the Boiling Water Reactors Owners Group methodology for ranking MOVs by their safety significance.

This completes our efforts on TAC No. M97093.

Sincerely,

/RA/

Jefferey F. Harold, Project Manager, Section 1
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-458

Enclosure: Safety Evaluation

cc w/encl: See next page

This completes our efforts on TAC No. M97093.

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO

LICENSEE RESPONSE TO GENERIC LETTER 96-05 “PERIODIC VERIFICATION OF

DESIGN-BASIS CAPABILITY OF SAFETY-RELATED MOTOR-OPERATED VALVES”

ENTERGY OPERATIONS, INC.

RIVER BEND STATION, UNIT 1

DOCKET NO. 50-458

1.0 INTRODUCTION

Many fluid systems at nuclear power plants depend on the successful operation of motor-operated valves (MOVs) in performing their safety functions. Several years ago, MOV operating experience and testing, and research programs sponsored by the nuclear industry and the U. S. Nuclear Regulatory Commission (NRC), revealed weaknesses in a wide range of activities (including design, qualification, testing, and maintenance) associated with the performance of MOVs in nuclear power plants. For example, some engineering analyses used in sizing and adjusting MOV settings did not adequately predict the thrust and torque required to operate valves under their design-basis conditions. In addition, inservice testing (IST) of valve stroke time under zero differential-pressure and flow conditions did not ensure that MOVs could perform their safety functions under design-basis conditions.

Upon identification of the weaknesses in MOV performance, significant industry and regulatory activities were initiated to verify the design-basis capability of safety-related MOVs in nuclear power plants. After completion of these activities, nuclear power plant licensees began establishing long-term programs to maintain the design-basis capability of their safety-related MOVs. This safety evaluation (SE) addresses the program developed by Entergy Operations, Inc. (the licensee) to verify periodically the design-basis capability of safety-related MOVs at River Bend Station, Unit 1 (River Bend).

2.0 REGULATORY REQUIREMENTS

NRC regulations require that MOVs important to safety be treated in a manner that provides assurance of their intended performance. Criterion 1 to Appendix A, “General Design Criteria for Nuclear Power Plants,” to Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR Part 50) states, in part, that "...(s)tructures, systems, and components important to safety shall be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety functions to be performed...." The quality assurance program

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to be applied to safety-related components is described in Appendix B, “Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants,” to 10 CFR Part 50. In 10 CFR 50.55a, the NRC requires licensees to establish IST programs in accordance with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (ASME Code), and more recently the ASME Standards and Guides for Operation and Maintenance of Nuclear Power Plants.

In response to concerns regarding MOV performance, the NRC issued Generic Letter (GL) 89-10 (June 28, 1989), "Safety-Related Motor-Operated Valve Testing and Surveillance," which requested that nuclear power plant licensees and construction permit holders ensure the capability of MOVs in safety-related systems to perform their intended functions by reviewing MOV design bases, verifying MOV switch settings initially and periodically, testing MOVs under design-basis conditions where practicable, improving evaluations of MOV failures and necessary corrective action, and trending MOV problems. The staff requested that licensees complete the GL 89-10 program within approximately three refueling outages or five years from the issuance of the generic letter. Construction Permit holders were requested to complete the GL 89-10 program before plant startup or in accordance with the above schedule, whichever was later.

The NRC issued seven supplements to GL 89-10 that provided additional guidance and information on MOV program scope, design-basis reviews, switch settings, testing, periodic verification, trending, and schedule extensions. GL 89-10 and its supplements provided only limited guidance regarding MOV periodic verification and the measures appropriate to assure preservation of design-basis capability. Consequently, the staff determined that additional guidance on the periodic verification of MOV design-basis capability should be prepared. On September 18, 1996, the NRC issued GL 96-05, requesting that each licensee establish a program, or ensure the effectiveness of its current program, to verify on a periodic basis that safety-related MOVs continue to be capable of performing their safety functions within the current licensing bases of the facility. In GL 96-05, the NRC summarized several industry and regulatory activities and programs related to maintaining long-term capability of safety-related MOVs. For example, GL 96-05 discussed non-mandatory ASME Code Case OMN-1, "Alternative Rules for Preservice and Inservice Testing of Certain Electric Motor Operated Valve Assemblies in LWR [light water reactor] Power Plants, OM Code 1995 Edition; Subsection ISTC," which allows the replacement of ASME Code requirements for MOV quarterly stroke-time testing with exercising of safety-related MOVs at least once per operating cycle and periodic MOV diagnostic testing on a frequency to be determined on the basis of margin and degradation rates. In GL 96-05, the NRC stated that the method in OMN-1 meets the intent of the generic letter with certain limitations. The NRC also noted in GL 96-05 that licensees remain bound by the requirements in their code of record regarding MOV stroke-time testing, as supplemented by relief requests approved by the NRC.

In GL 96-05, licensees were requested to submit the following information to the NRC:

a. within 60 days from the date of GL 96-05, a written response indicating whether or not the licensee would implement the requested actions; and

b. within 180 days from the date of GL 96-05, or upon notification to the NRC of completion of GL 89-10 (whichever is later), a written summary description of the licensee’s MOV periodic verification program.

The NRC staff is preparing an SE on the response of each licensee to GL 96-05. The NRC staff intends to rely, to a significant extent, on an industry initiative to identify valve age-related degradation which could adversely affect the design-basis capability of safety-related MOVs (described in Section 3.0, herein), where a licensee commits to implement that industry program. The NRC staff will conduct inspections, as necessary, to verify the implementation of GL 96-05 programs at nuclear power plants.

3.0 JOINT OWNERS GROUP PROGRAM ON MOV PERIODIC VERIFICATION

In response to GL 96-05, the Boiling Water Reactor Owners Group (BWROG), Westinghouse Owners Group (WOG), and Combustion Engineering Owners Group (CEOG) jointly developed a MOV periodic verification program to obtain benefits of sharing information between licensees. The Joint Owners Group (JOG) Program on MOV Periodic Verification is described by the BWROG in its Licensing Topical Report NEDC-32719, “BWR Owners’ Group Program on Motor-Operated Valve (MOV) Periodic Verification,” and described by WOG and CEOG in their separately submitted Topical Report MPR-1807, “Joint BWR, Westinghouse and Combustion Engineering Owners’ Group Program on Motor-Operated Valve (MOV) Periodic Verification.” The stated objectives of the JOG program on MOV Periodic Verification are to (1) provide an approach for licensees to use immediately in their GL 96-05 programs, (2) develop a basis for addressing the potential age-related increase in required thrust or torque under dynamic conditions, and (3) use the developed basis to confirm, or if necessary to modify, the applied approach. The specific elements of the JOG program are to (1) provide an "interim" MOV periodic verification program for applicable licensees to use in response to GL 96-05, (2) conduct a dynamic testing program over the next five years to identify potential age-related increases in required thrust or torque to operate gate, globe, and butterfly valves under dynamic conditions, and (3) evaluate the information from the dynamic testing program to confirm or modify the interim program assumptions.

The JOG interim MOV periodic verification program includes (1) continuation of MOV stroke-time testing required by the ASME Code IST program, and (2) performance of MOV static diagnostic testing on a frequency based on functional capability (age-related degradation margin over and above margin for GL 89-10 evaluated parameters) and safety significance. In implementing the interim MOV static diagnostic test program, licensees will rank MOVs within the scope of the JOG program according to their safety significance. The JOG program specifies that licensees need to justify their approach for risk-ranking MOVs. In Topical Report NEDC-32264, "Application of Probabilistic Safety Assessment to Generic Letter 89-10 Implementation," the BWROG described a methodology to rank MOVs in GL 89-10 programs with respect to their relative importance to core-damage frequency and other considerations to be added by an expert panel. In an SE dated February 27, 1996, the NRC staff accepted the BWROG methodology for risk-ranking MOVs in boiling water reactor nuclear plants with certain conditions and limitations. In the NRC SE on the JOG Program for MOV Periodic Verification, dated October 30, 1997, the staff indicated its view that the BWROG methodology for MOV risk ranking is appropriate for use in response to GL 96-05. With respect to Westinghouse-designed pressurized water reactor nuclear plants, WOG prepared Engineering Report V-EC-1658, “Risk Ranking Approach for Motor-Operated Valves in Response to Generic Letter 96-05.” On April 14, 1998, the NRC issued an SE accepting, with certain conditions and limitations, the WOG approach for ranking MOVs based on their risk significance. Licensees not utilizing the BWROG or WOG methodologies need to justify their MOV risk-ranking approach individually.

The objectives of the JOG dynamic test program are to determine degradation trends in dynamic thrust and torque, and to use dynamic test results to adjust, if warranted, the test frequency and method specified in the interim program. The JOG dynamic testing program includes (1) identification of conditions and features which could potentially lead to MOV degradation, (2) definition and assignment of valves for dynamic testing, (3) testing valves three times over a five-year interval with at least a one-year interval between valve-specific tests according to a standard test specification, (4) evaluation of results of each test, and (5) evaluation of collective test results.

In the last phase of its program, the JOG will evaluate the test results to validate the assumptions in the interim program to establish a long-term MOV periodic verification program to be implemented by licensees. A feedback mechanism will be established to ensure timely sharing of MOV test results among licensees and to prompt individual licensees to adjust their own MOV periodic verification program, as appropriate.

Following consideration of NRC staff comments, the BWROG, on July 30, 1997, submitted Licensing Topical Report NEDC-32719, Revision 2, describing the JOG program. Similarly, CEOG and WOG submitted Topical Report MPR-1807 (Revision 2) describing the JOG program on August 6 and 12, 1997, respectively. On October 30, 1997, the NRC issued its SE to BWROG, CEOG, and WOG, accepting the JOG program with certain conditions and limitations as an acceptable industry-wide response to GL 96-05 for valve age-related degradation. On October 19, 1999, the Babcock & Wilcox Owners Group (BWOG) forwarded Topical Report MPR-1807, Revision 2, to the NRC, and stated that the BWOG is now participating in the JOG Program on MOV Periodic Verification. In a letter dated May 15, 2000, NRC informed the BWOG that Topical Report MPR-1807 is acceptable for referencing in BWOG licensing applications, to the extent specified, and under the limitations delineated in the report and the associated NRC SE dated October 30, 1997.

4.0 RIVER BEND GL 96-05 PROGRAM

On November 15, 1996, the licensee submitted a 60-day response to GL 96-05, notifying the NRC that it was preparing an MOV periodic verification program for River Bend. On March 17, 1997, the licensee submitted a 180-day response to GL 96-05 providing a summary description of the MOV periodic verification program to ensure the long-term design-basis capability of the safety-related MOVs within the scope of GL 96-05 at River Bend. In a letter dated January 11, 1999, the licensee updated its commitment to GL 96-05. On April 14 and May 26, 2000, the licensee responded to a request for additional information regarding GL 96-05 forwarded by the NRC on December 15, 1999.

In its letter dated March 17, 1997, the licensee described its MOV periodic verification program, including scope, planned testing, capability margin, and plans to implement the JOG program at River Bend. In this regard, the licensee described its interim MOV static diagnostic test program, risk-ranking approach, and dynamic diagnostic test program. The licensee stated that the GL 96-05 periodic verification program would be implemented at River Bend prior to its refueling outage (RFO) in 1997. In its letter dated January 11, 1999, the licensee committed to participate in the JOG Program on MOV Periodic Verification as a member of the BWROG, and to implement the JOG program elements described in Topical Report NEDC-32719, Revision 2.

5.0 NRC STAFF EVALUATION

The NRC staff has reviewed the information provided in the licensee's submittals, describing the program to verify periodically the design-basis capability of safety-related MOVs at River Bend, responding to GL 96-05. NRC Inspection Report 50-458/96-22 (IR 96-22) provided the results of the inspection to evaluate the licensee's program to verify the design-basis capability of safety-related MOVs in response to GL 89-10. The NRC staff completed their review of the licensee's GL 89-10 program, as documented in IR 96-22, based on verification of the design-basis capability of safety-related MOVs at River Bend. The NRC staff's evaluation of the licensee's response to GL 96-05 is described, herein.

5.1 MOV Program Scope

In GL 96-05, the NRC indicated that all safety-related MOVs covered by the GL 89-10 program should be considered in the development of the MOV periodic verification program. The NRC noted that the program should consider safety-related MOVs that are assumed to be capable of returning to their safety-related position when placed in a position that prevents their safety system (or train) from performing its safety function; the system (or train) is not declared inoperable when the MOVs are in their non safety-related position.

In IR 96-22, the NRC did not identify any concerns regarding the scope of the licensee's MOV program in response to GL 89-10 at River Bend. In its letter dated March 17, 1997, the licensee stated that its MOV periodic verification program would ensure the long-term design-basis capability of the safety-related MOVs at River Bend, without exception to the scope of GL 96-05. The NRC staff considers the licensee to have made adequate commitments regarding the scope of its MOV program.

5.2 MOV Assumptions and Methodologies

Licensees maintain the assumptions and methodologies used in the development of their MOV programs for the life of the plant (a concept commonly described as a "living program"). For example, the design basis of safety-related MOVs will need to be maintained up-to-date, including consideration of any plant modifications or power uprate conditions.

During the inspection documented in IR 96-22, the staff reviewed the licensee's justification for the assumptions and methodologies used in the MOV program, in response to GL 89-10, at River Bend and determined that the licensee had adequately justified the assumptions and methodologies used in its MOV program, including certain long-term items as discussed in Section 5.3 of this SE. In addition, the licensee's April 14, 2000, response to NRC's Request for Additional Information (RAI) indicated ongoing activities, such as modification of valves to increase MOV actuator output capability to increase available margin. The NRC staff considers the licensee to have adequate processes in place to maintain the assumptions and methodologies used in its MOV program, including the design basis of its safety-related MOVs.

5.3 GL 89-10 Long-Term Items

When evaluating the GL 89-10 program at River Bend, the NRC staff noted, in IR 96-22, several items in the licensee's MOV program that should be addressed over the long term. In its April 14, 2000, response to NRC's RAI, the licensee reported on the status of those

long-term GL 89-10 aspects. In response to an inspection finding that margin for valve factor degradation had not been established at River Bend, the licensee stated that it will use the results obtained from the JOG program to address potential valve factor degradation in MOV setup calculations. In the interim, the licensee stated that all MOVs (with one exception) in its GL 96-05 program have greater than 10% margin in their capability, at current switch settings, to overcome the thrust and torque required to operate the valve under design-basis conditions (10% capability setup margin). The one MOV exception (reactor water cleanup pump discharge valve G33-MOVF053) is scheduled for modification to increase its output capability during the RFO at River Bend in 2001. The licensee also evaluated two MOVs, identified in IR 96-22 as being considered for future margin enhancement. From this evaluation, the licensee modified high pressure core spray injection valve E22-MOVF004 to increase its capability, and determined reactor water cleanup return valve G33-MOVF039 to have high capability margin because of its low design-basis differential pressure. Also in GL 89-10, the NRC identified pressure locking and thermal binding as potential performance concerns for safety-related MOVs. The NRC staff completed its review of the licensee's actions in response to GL 95-07, "Pressure Locking and Thermal Binding of Safety-Related Power-Operated Gate Valves," in an SE dated August 3, 1999.

In IR 96-22, the NRC staff reported that the licensee's program to trend MOV performance characteristics and failures was adequately developed and implemented for closure of the NRC review of the GL 89-10 program at River Bend. The licensee's RAI response, dated August 14, 2000, indicated several qualitative and quantitative aspects of MOV performance being trended by the MOV program at River Bend. In particular, the licensee's MOV trending program includes unseating thrust and torque, stem friction coefficient, motor inrush and running current, thrust and torque at torque switch trip, and MOV failures and anomalies. As noted in IR 96-22, the licensee prepares a report following each refueling outage that describes any MOV failures that occurred during the previous operating cycle.

With regard to the licensee's ongoing GL 89-10 program, MOV activities, and trending program at River Bend, no outstanding issues have been identified.

5.4 JOG Program on MOV Periodic Verification

In its letter dated January 11, 1999, the licensee updated its commitment to implement the JOG Program on MOV Periodic Verification, as described in Topical Report NEDC-32719, Revision 2. In an SE dated October 30, 1997, the NRC accepted the JOG program as an industry-wide response to GL 96-05, with certain conditions and limitations. The JOG program includes (1) the JOG interim static diagnostic test program, (2) the JOG five-year dynamic test program, and (3) the JOG long-term periodic test program. The NRC considers the licensee's commitments in response to GL 96-05 to include implementation at River Bend of all three phases of the JOG program. The conditions and limitations discussed in the NRC SE dated October 30, 1997, apply to the JOG program at River Bend. The staff considers the commitments by the licensee to implement all three phases of the JOG program at River Bend to be an acceptable response to GL 96-05 for valve age-related degradation.

In its letter dated March 17, 1997, the licensee noted that the interim MOV static diagnostic testing under the JOG program would be performed at River Bend on a frequency based on the risk significance and setup ratio (i.e., capability margin) of each GL 96-05 MOV. Initially, the licensee's static MOV test frequency matrix appeared to differ from the JOG interim static

diagnostic test program. In its letter dated January 11, 1999, the licensee committed to implement the JOG program as described in Topical Report NEDC-32719. According to the licensee's updated commitment, the interim MOV static diagnostic test program at River Bend will be consistent with the JOG program and is, therefore, acceptable.

In its April 14, 2000, letter responding to NRC's RAI, the licensee stated that MOV risk-ranking at River Bend was performed in accordance with the MOV risk-ranking approach and results presented in the BWROG Topical Report NEDC-32264, Revision 2. The conditions and limitations discussed in the NRC SE dated February 27, 1996, apply to the application of the BWROG methodology for ranking MOVs by their safety significance at River Bend. The NRC staff notes that BWROG provided an example list of risk-significant MOVs for consideration by each licensee in applying the owners group methodology. Based on the licensee's submitted information, the staff finds that the licensee's methodology for risk-ranking MOVs at River Bend is acceptable.

The JOG program is intended to address most gate, globe, and butterfly valves used in safety-related applications in the nuclear power plants of participating licensees. The JOG indicates that each licensee is responsible for addressing any MOVs outside the scope of applicability of the JOG program. The NRC recognizes that the JOG has selected a broad range of MOVs and conditions for the dynamic testing program and expects significant information to be obtained on the performance and potential degradation of safety-related MOVs during the interim static diagnostic test program and the JOG dynamic test program. As the test results are evaluated, the JOG might include or exclude additional MOVs with respect to the scope of its program. Although the test information from the MOVs in the JOG dynamic test program might not be adequate to establish a long-term periodic verification program for each MOV outside the scope of the JOG program, sufficient information should be obtained from the JOG dynamic test program to identify any immediate safety concern for potential valve age-related degradation during the interim period of the JOG program. Therefore, the NRC staff considers it acceptable for the licensee to apply its interim static diagnostic test program to the GL 96-05 MOVs that might currently be outside the scope of the JOG program with the feedback of information from the JOG dynamic test program to those MOVs. The NRC SE dated October 30, 1997, stated that licensees implementing the JOG program must identify any MOVs outside the scope of the JOG program (including service conditions) and justify a separate program for periodic verification of the design-basis capability of those MOVs.

5.5 Motor Actuator Output

The JOG program focuses on the potential age-related increase in the thrust or torque required to operate valves under their design-basis conditions. The October 30, 1997, NRC SE on the JOG program specifies that licensees are responsible for addressing the thrust or torque delivered by the MOV motor actuator and its potential degradation. Although JOG does not plan to evaluate degradation of motor actuator output, significant information on the output of motor actuators will be obtained through the interim MOV static diagnostic test program and the JOG dynamic test program. Several parameters can be obtained during MOV static and dynamic testing to help identify motor actuator output degradation when opening and closing the valve, including, as applicable, capability margin, thrust and torque at control switch trip, stem friction coefficient, load sensitive behavior, and motor current.

The April 14, 2000, licensee response to NRC's RAI stated that its MOV periodic verification program at River Bend specifies periodic MOV static testing to evaluate MOV performance for trends and degradation of actuator output capability. The licensee trends MOV performance and, based on the results of its trending review, makes recommendations for revision of MOV test and preventative maintenance schedules. The trended MOV actuator output parameters at River Bend include unseating thrust and torque, stem friction coefficient, motor inrush and running current, and thrust and torque at torque switch trip. The licensee also monitors industry activities and reports pertaining to MOV capability and takes action as necessary to address new information.

In Technical Update 98-01 and its Supplement 1, Limitorque Corporation provided updated guidance for predicting the torque output of its alternating current-powered motor actuators. The licensee's April 14, 2000, response to NRC's RAI reported that it had evaluated the MOVs in the periodic verification program at River Bend for the effect of this new information. Based on its evaluation, the licensee modified and re-set 10 MOVs to increase their torque switch settings. The licensee also has scheduled seven MOVs to be modified to increase their torque output capability during the RFO at River Bend in 2001. The licensee did not indicate any MOV operability concerns during its evaluation of the new information.

In its letter dated July 17, 1998, forwarding Technical Update 98-01, Limitorque indicates that a future technical update will be issued to address the application of direct current (dc)-powered MOVs. In its letter dated May 26, 2000, responding to NRC's RAI, the licensee stated that it currently follows industry practices regarding the calculations for dc-powered MOV actuator torque output and stroke time at degraded voltage conditions. The licensee will evaluate the new industry guidance prepared on dc-powered MOV output information and take appropriate actions. Any MOV operability concerns that might be identified in the future will be processed in accordance with established regulatory requirements and plant-specific commitments.

The NRC staff considers the licensee to be establishing sufficient means to monitor MOV motor actuator output and its potential degradation.

6.0 CONCLUSION

The NRC staff finds that the licensee has established an acceptable program to verify periodically the design-basis capability of the safety-related MOVs at River Bend through its commitment to all three phases of the JOG Program on MOV Periodic Verification and the additional actions described in its submittals; therefore, the staff concludes that the licensee has adequately addressed the actions requested in GL 96-05. The NRC staff may conduct inspections to verify that the implementation of the MOV periodic verification program is in accordance with the licensee’s commitments in its submittals, this SE, the NRC SE dated October 30, 1997, concerning the JOG Program on MOV Periodic Verification, and the NRC SE dated February 27, 1996, on the BWROG methodology for ranking MOVs by their safety significance.

Principal Contributor: S. Tingen
T. Scarbrough

Date: July 11, 2000