

February 8, 2000

Mr. Mike Reandeau  
Director - Licensing  
Clinton Power Station  
P.O. Box 678  
Mail Code #V920  
Clinton, IL 61727

SUBJECT: COMPLETION OF LICENSING ACTION FOR GENERIC LETTER 96-05,  
"PERIODIC VERIFICATION OF DESIGN-BASIS CAPABILITY OF SAFETY-  
RELATED MOTOR-OPERATED VALVES," - CLINTON POWER STATION  
(TAC NO. M97032)

Dear Mr. Reandeau:

On September 18, 1996, the 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 18, 1996, you submitted a 60-day response to GL 96-05 notifying the NRC that you would implement the requested MOV periodic verification program at Clinton Power Station. On March 14, 1997, you submitted a 180-day response to GL 96-05 providing a summary description of the MOV periodic verification program planned to be implemented at Clinton. You updated your commitment by letter dated July 14, 1998, and by letter dated March 30, 1999, you provided a response to a request for additional information forwarded by the NRC staff on January 26, 1999.

The NRC staff has reviewed your submittals and applicable NRC inspection reports for the MOV program at Clinton. The staff finds that you have established an acceptable program to periodically verify the design-basis capability of the safety-related MOVs at Clinton through (1) a commitment to all three phases of the Joint Owners Group (JOG) Program on MOV Periodic Verification; (2) a commitment to risk-rank MOVs by their safety significance in accordance with the approach described in your submittals; and (3) the additional actions described in the submittals. As discussed in the enclosed safety evaluation (SE), the staff concludes that you are adequately addressing the actions requested in GL 96-05. The NRC staff may conduct

M. Reandeau

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inspections at Clinton to verify that the implementation of the MOV periodic verification program is in accordance with your commitments; this SE; and the SE dated October 30, 1997, on the JOG Program on MOV Periodic Verification.

Contact me if you have any questions.

Sincerely,

***/RA/***

Jon B. Hopkins, Senior Project Manager, Section 2  
Project Directorate III  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-461

Enclosure: As stated

cc w/encl: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
LICENSEE RESPONSE TO GENERIC LETTER 96-05, "PERIODIC VERIFICATION OF  
DESIGN-BASIS CAPABILITY OF SAFETY-RELATED MOTOR-OPERATED VALVES,"  
CLINTON POWER STATION  
DOCKET NUMBER 50-461

## 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 setting MOVs did not adequately predict the thrust and torque required to operate valves under their design-basis conditions. In addition, inservice tests 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 the licensee (previously - Illinois Power Company, currently - AmerGen Energy Company, LLC) to periodically verify the design-basis capability of safety-related MOVs at the Clinton Power Station.

## 2.0 REGULATORY BASIS

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 structures, 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 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 Section 50.55a of 10 CFR Part 50, the NRC requires licensees to establish inservice testing (IST) programs in accordance with Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code.

In response to concerns regarding MOV performance, NRC staff 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 NRC staff requested that licensees complete the GL 89-10 program within approximately three refueling outages or 5 years from the issuance of the GL. 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 staff 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 staff issued GL 96-05, "Periodic Verification of Design-Basis Capability of Safety-Related Motor-Operated Valves," requesting 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 staff 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 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 rate. In GL 96-05, the staff stated that the method in OMN-1 meets the intent of the generic letter with certain limitations. The staff 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 staff.

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) where a licensee commits to implement that industry program. The staff will conduct inspections to verify the implementation of GL 96-05 programs at nuclear power plants as necessary.

### 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 an MOV periodic verification program to obtain benefits from the sharing of 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 (1) to provide an approach for licensees to use immediately in their GL 96-05 programs; (2) to develop a basis for addressing the potential age-related increase in required thrust or torque under dynamic conditions; and (3) to use the developed basis to confirm, or if necessary to modify, the applied approach. The specific elements of the JOG program are (1) providing an "interim" MOV periodic verification program for applicable licensees to use in response to GL 96-05; (2) conducting a dynamic testing program over the next 5 years to identify potential age-related increases in required thrust or torque to operate gate, globe, and butterfly valves under dynamic conditions; and (3) evaluating 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," 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 (dated October 30, 1997) on the JOG Program on MOV Periodic Verification, the NRC 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, the 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 staff issued an SE, accepting with certain conditions and limitations, the WOG approach for ranking MOVs based on their risk significance. Licensees not applicable to 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 the test frequency and method specified in the interim program if warranted. 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 5-year interval with at least a 1-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, 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, BWROG submitted Licensing Topical Report NEDC-32719 (Revision 2) describing the JOG program on July 30, 1997. 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 staff issued an SE accepting the JOG program with certain conditions and limitations as an acceptable industry-wide response to GL 96-05 for valve age-related degradation.

#### 4.0 CLINTON GL 96-05 PROGRAM

On November 18, 1996, AmerGen Energy Company, LLC submitted a 60-day response to GL 96-05 notifying the NRC that it would implement the requested MOV periodic verification program at the Clinton Power Station. On March 14, 1997, the licensee submitted a 180-day response to GL 96-05 providing a summary description of the MOV periodic verification program planned to be implemented at Clinton. In a letter dated July 14, 1998, the licensee updated its commitment to GL 96-05. On March 30, 1999, the licensee provided a response to a request for additional information regarding GL 96-05 forwarded by the NRC staff on January 26, 1999.

In its letter dated March 14, 1997, the licensee described its MOV periodic verification program, including scope, existing and planned testing, capability margin, and implementation of the JOG program at Clinton. The licensee indicated that the interim MOV static diagnostic test program at Clinton would differ from the JOG periodic verification program although the frequency of MOV static testing would continue to be based on valve safety significance and actuator functional capability. The licensee is conducting dynamic tests of MOVs assigned by the JOG program and additional MOVs. Adjustments to Clinton's GL 96-05 program would consider the test results and recommendations from the JOG dynamic test program. The licensee indicated that it was in the process of implementing the JOG program at Clinton. In its letter dated July 14, 1998, the licensee updated its GL 96-05 commitment to implement Topical Report NEDC-32179 (Revision 2). The licensee reported that its MOV program deviated from the JOG program in that the GL 96-05 MOVs at Clinton had been ranked into two risk categories rather than high, medium, or low risk significance recommended in the JOG program. In its letter dated March 30, 1999, the licensee provided additional details regarding its MOV periodic verification program. For example, the licensee described the MOV risk-ranking approach at Clinton, including its use of an expert panel and the comparison of its MOV risk-ranking results to other similar plants.

#### 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 Clinton in response to GL 96-05. NRC Inspection Reports 50-461/94011 (IR 94011) and 50-461/96002



(IR 96002) provided the results of inspections to evaluate the licensee's program to verify the design-basis capability of safety-related MOVs in response to GL 89-10. The staff closed the review of the GL 89-10 program at Clinton in IR 96002 based on verification of the design-basis capability of safety-related MOVs at Clinton. The staff's evaluation of the licensee's response to GL 96-05 is described below.

### 5.1 MOV Program Scope

In GL 96-05, the NRC staff 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 staff noted that the program should consider safety-related MOVs that are assumed to be capable of returning to their safety position when placed in a position that prevents their safety system (or train) from performing its safety function; and the system (or train) is not declared inoperable when the MOVs are in their non-safety position.

In a letter dated November 18, 1996, the licensee committed to implement the requested MOV periodic verification program at Clinton in response to GL 96-05 and did not take exception to the scope of the GL. In its letter dated March 14, 1997, the licensee stated that the scope of its MOV periodic verification program is consistent with the scope of its GL 89-10 program. In IR 94011, the NRC staff reviewed the licensee's MOV program scope in response to GL 89-10 and identified several MOVs that were inappropriately removed from the scope of GL 89-10. In its letters dated March 3, 1995, and March 8, 1999, the licensee stated that these MOVs were returned to its GL 89-10 program except in instances when the associated system is declared inoperable in accordance with technical specifications when the MOV is not in its safety position. In its letter dated March 8, 1999, the licensee also stated that several other MOVs were added to the scope of GL 89-10 based on the results of system design reviews.

The staff considers the licensee to have made adequate commitments regarding the scope of its MOV program.

### 5.2 MOV Assumptions and Methodologies

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

In IR 96002, the NRC staff reviewed the licensee's justification for the assumptions and methodologies used in the MOV program in response to GL 89-10 at Clinton. With certain long-term items discussed in the following section, the staff determined that the licensee had adequately justified the assumptions and methodologies used in its MOV program. The licensee's letter dated March 30, 1999, indicated ongoing activities, such as review of motor actuator output, to update its MOV program assumptions and methodologies. 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 Clinton, the NRC staff discussed in IR 96002 several items of the licensee's MOV program to be addressed over the long term. In its letter dated March 30, 1999, the licensee reported on the status of those long-term GL 89-10 items. For example, the licensee (1) completed torque switch adjustments or modifications for 13 MOVs to regain margin and support the applied group valve factors; and (2) implemented new analysis methods to ensure that open stem friction coefficients and open load sensitive behavior margins properly bound calculation assumptions. The licensee evaluated MOVs with open safety functions to demonstrate operability in light of the results of its analyses. The licensee also stated that it completed tests on five butterfly MOVs and the test results verified that adequate margin exists for the valves to perform their safety function. The licensee plans to test additional butterfly MOVs during the upcoming refueling outage. The licensee also reported on follow-up action involving (1) assumptions for actuator efficiency, application factor, and stem lubricant degradation; (2) evaluation of potential electrical short circuits; and (3) consideration of test data when extending test intervals beyond 5 years. In GL 89-10, the NRC staff identified pressure locking and thermal binding as potential performance concerns for safety-related MOVs. The NRC staff completed the 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 November 17, 1999.

In IRs 94011 and 96002, the NRC staff discussed quantitative and qualitative aspects of the licensee's program for trending MOV performance at Clinton. For example, the licensee tracks MOV degradations and failures, such as concerns related to lubrication, switch settings, and valve and actuator hardware. The licensee enters this information and MOV test data into a computerized database, and documents any MOV deficiencies found through the trending program in a trend analysis report issued after each refueling outage.

With the licensee's ongoing MOV activities and trending program, no outstanding issues regarding the licensee's GL 89-10 program remain at Clinton.

### 5.4 JOG Program on MOV Periodic Verification

In its letter dated July 14, 1998, the licensee updated its commitment to implement the JOG Program on MOV Periodic Verification as described in Topical Report NEDC-32179 (Revision 2). In an SE dated October 30, 1997, the NRC staff accepted the JOG program as an industry-wide response to GL 96-05 with certain conditions and limitations. The JOG program consists of the following three phases: (1) the JOG interim static diagnostic test program; (2) the JOG 5-year dynamic test program; and (3) the JOG long-term periodic test program. The staff considers the licensee's commitment in response to GL 96-05 to include implementation of all three phases of the JOG program at Clinton. The conditions and limitations discussed in the NRC SE dated October 30, 1997, apply to the JOG program at Clinton. The staff considers the commitments by the licensee to implement all three phases of the JOG program at Clinton to be an acceptable response to GL 96-05 for valve age-related degradation.

In its letters dated March 14, 1997, and March 30, 1999, the licensee stated that interim MOV static diagnostic testing would be performed on a test frequency based on the safety significance and functional capability of each GL 96-05 MOV. The licensee described its MOV risk-ranking approach in detail. For example, the licensee used the Clinton-specific Probabilistic Risk Assessment for ranking MOVs with enhancements such as sensitivity studies

to ensure that all potential configurations and functions were included. The licensee also grouped high and medium risk MOVs into the same risk category (referred to as risk-significant MOVs). Therefore, the licensee used only two risk categories of risk-significant and non-risk significant MOVs. The licensee assumed a minimum MOV failure rate threshold value of  $8E-3$  failures per year in its analyses. The licensee included all valves that had Fussell-Vesely or Birnbaum importance measure results greater than zero in the risk-significant MOV category. The licensee assigned the highest importance value for the valves in parallel trains to ensure that the study was not biased toward the importance of a particular valve. The licensee conducted reviews of its analysis through use of an expert panel. The licensee compared its list of risk-significant MOVs with the MOV risk-ranking results from two other similar plants, and did not identify any instances where those other analyses ranked corresponding valves in a higher risk classification than at Clinton. The staff considers the licensee's approach to risk ranking MOVs at Clinton to be 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. JOG indicates that each licensee is responsible for addressing any MOVs outside the scope of applicability of the JOG program. The NRC staff recognizes that JOG has selected a broad range of MOVs and conditions for the dynamic testing program, and that significant information will 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, 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 GL 96-05 MOVs that currently might be outside the scope of the JOG program with the feedback of information from the JOG dynamic test program to those MOVs. In the NRC SE dated October 30, 1997, the NRC staff specifies that licensees implementing the JOG program must determine 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 (including static and dynamic operating requirements) 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. In the NRC SE dated October 30, 1997, on the JOG program, the NRC staff 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 obtained during MOV static and dynamic diagnostic testing 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.

In IR 96002, the NRC staff reported that the licensee's MOV trending program appeared to be capable of adequately tracking and evaluating data to maintain MOV design-basis capability. The licensee's trending program was used to track concerns with lubrication, switch settings, and hardware. In its letters dated November 18, 1996, and March 14, 1997, the licensee indicated that it uses a combination of diagnostic test results and trending to detect decreases in actuator output to ensure adequate capability for safety-related MOVs at Clinton. In its letter dated March 30, 1999, the licensee indicated that it is (1) monitoring valve factors, stem friction coefficients, stem factor degradation, stem lubricant degradation, and load sensitive behavior; (2) comparing data from MOV tests with existing assumptions; and (3) making adjustments as necessary to maintain desired safety margins. The licensee also stated that its MOV periodic verification program includes evaluation of as-found test results.

In Technical Update 98-01 and its Supplement 1, Limatorque Corporation provided updated guidance for predicting the torque output of its ac-powered motor actuators. In its letter dated March 30, 1999, the licensee reported that it had evaluated the updated guidance. The licensee stated that it had completed corrective actions for MOVs where the revised motor capability or existing torque switch settings were not sufficient, or the revised motor capacity might not be sufficient to trip the close torque switch. These corrective actions involved motor changes, gear changes, increasing torque switch settings, or evaluations to demonstrate safety function capabilities which included the use of a methodology developed by the Commonwealth Edison Company (ComEd) for predicting actuator capability. The NRC staff notes that the licensee is responsible for addressing any changes to the ComEd methodology resulting from the Limatorque update. 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 licensee plans to have modifications and evaluations to enhance capability margin ready for implementation by the next refueling outage.

In its letter dated July 17, 1998, forwarding Technical Update 98-01, Limatorque indicates that a future technical update will be issued to address the application of dc-powered MOVs. In its letter dated March 30, 1999, the licensee stated that it is participating in the industry effort to provide updated guidance for dc-powered MOVs. The licensee stated that it uses current Limatorque guidance (pullout efficiency, 0.9 application factor, and motor torque load and degraded voltage when adjusting motor speed) to determine dc-powered actuator capability. The licensee stated that it will incorporate any new dc-powered MOV output information as it becomes available.

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 Clinton through (1) its

commitment to all three phases of the JOG Program on MOV Periodic Verification; (2) its commitment to risk-rank MOVs by their safety significance in accordance with the approach described in its submittals; and (3) the additional actions described in its submittals. Therefore, the staff concludes that the licensee is adequately addressing the actions requested in GL 96-05. The staff may conduct inspections at Clinton to verify the implementation of the MOV periodic verification program is in accordance with the licensee's commitments; this SE; and the NRC SE dated October 30, 1997, on the JOG Program on MOV Periodic Verification.

Principal Contributors: T. Scarbrough, NRR  
S. Tingen, NRR

Date: February 8, 2000