

April 4, 2000

Mr. Otto L. Maynard  
President and Chief Executive Officer  
Wolf Creek Nuclear Operating Corporation  
Post Office Box 411  
Burlington, KA 66839

SUBJECT: CLOSEOUT RESPONSE TO GENERIC LETTER 96-05 - WOLF CREEK  
GENERATING STATION (TAC NO. M97120)

Dear Mr. Maynard:

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 that each nuclear power plant licensee establish a program, or to ensure the effectiveness of its current program, to verify on a periodic basis that safety-related motor-operated valves (MOV) continue to be capable of performing their safety functions within the current licensing bases of the facility. In response to GL 96-05 for Wolf Creek Generating Station (WCGS), you have submitted four letters dated November 13, 1996 (ET 96-0093); March 17, 1997 (ET 97-0009); April 29, 1998 (ET 98-0036); and July 14, 1999 (WO 99-0060).

The letter dated November 13, 1996, was the 60-day response to GL 96-05 notifying the NRC that you would implement the requested MOV periodic verification program at WCGS. The letter dated March 17, 1997, was the 180-day response providing a summary description of the MOV periodic verification program being implemented. The letter dated April 29, 1998, provided the commitment to continue participating in the Joint Owners Group (JOG) MOV Periodic Verification Program. The last letter dated July 14, 1999, provided the response to a request for additional information from the NRC staff dated March 26, 1999.

Based on our review of the above letters and applicable NRC inspection reports on the MOV program at WCGS, and as documented in the enclosed safety evaluation (SE), the NRC staff concludes that you have established an acceptable program to verify periodically the design-basis capability of the safety-related MOVs at WCGS. This conclusion is based on your commitment in the letters of March 17, 1997, and April 29, 1998, to all three phases of the JOG MOV Periodic Verification Program.

The staff may conduct inspections at WCGS to verify the implementation of your commitment to follow the JOG MOV program. The implementation of the commitment includes the enclosed SE; the SE in the staff's letter dated October 30, 1997, on the JOG program, and the SE in the staff's letter dated April 14, 1998, on the Westinghouse Owners Group methodology for ranking MOVs by their safety significance. The four commitments to the JOG program in your commitment management system for WCGS (i.e, 1997-007, 1997-008, 1997-064, and 1998-03) conform to the commitment that we are relying upon concerning the JOG program, which was discussed in the previous paragraph. Your procedures show that changes to these commitments should be reported to the NRC in accordance with Nuclear Energy Institute

Mr. Otto L. Maynard

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April 4, 2000

(NEI), "Guideline for Managing NRC Commitments," dated June 9, 1995, in which safety significant changes shall be discussed with the NRC staff before the change is made.

A copy of our related safety evaluation is enclosed. This closes out the staff's efforts under TAC No. M97120. If you have any questions, please contact me at 301-415-1307 or through the internet at [jnd@nrc.gov](mailto:jnd@nrc.gov).

Sincerely,

*/RA/*

Jack Donohew, Senior Project Manager, Section 2  
Project Directorate IV & Decommissioning  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-482

Enclosure: Safety Evaluation

cc w/encl: See next page

Mr. Otto L. Maynard

- 2 -

April 4, 2000

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO GENERIC LETTER 96-05

"PERIODIC VERIFICATION OF DESIGN-BASIS CAPABILITY OF

SAFETY-RELATED MOTOR-OPERATED VALVES"

WOLF CREEK NUCLEAR OPERATING CORPORATION

WOLF CREEK GENERATING STATION

DOCKET NO. 50-482

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 Wolf Creek Nuclear Operating Corporation (the licensee) to verify periodically the design-basis capability of safety-related MOVs at Wolf Creek Generating Station (WCGS).

2.0 REGULATORY REQUIREMENTS

The 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, the NRC staff issued Generic Letter (GL) 89-10 (dated 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 5 years from the issuance of the generic letter. 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 NRC 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 NRC 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 NRC staff stated that the method in OMN-1 meets the intent of the generic letter with certain limitations. The NRC 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 NRC 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 relying 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 SE Section 3.0 below) where a licensee commits to implement that industry program. The NRC 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 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, or three phases, 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.

#### 3.1 JOG Interim MOV Periodic Verification Program

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, such as WCGS, 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 would need to justify their MOV risk-ranking approach individually.

### 3.1.1 JOG Dynamic Test Program

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.

### 3.1.2 Last Phase of JOG Program

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.

### 3.1.3 NRC Staff SE for JOG Program

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 WOLF CREEK GL 96-05 PROGRAM

On November 13, 1996, the licensee submitted the 60-day response to GL 96-05 notifying the NRC that it would implement the requested MOV periodic verification program at WCGS. On March 17, 1997, the licensee submitted the 180-day response providing a summary description of the MOV periodic verification program being implemented at WCGS. The licensee provided an updated GL 96-05 submittal on April 29, 1998, providing the commitment to continue participating in the JOG MOV Periodic Verification Program. On July 14, 1999, the licensee provided a response to a request for additional information from the NRC staff on March 26, 1999.

In its letter dated November 13, 1996, the licensee stated that its current periodic verification program would be amended or enhanced, as necessary, to incorporate GL 96-05 guidelines by March 17, 1997. In its letter dated March 17, 1997, the licensee described its MOV periodic verification program, including dynamic and static testing, MOV risk ranking, and participation in the JOG program at WCGS. The licensee stated that adjustments would be made to its GL 96-05 program based on the test results and recommendations from the JOG testing program, as appropriate. In its letter dated April 29, 1998, the licensee stated that it planned to continue participating in the JOG dynamic testing program and to implement the program elements described in Topical Report MPR-1807 (Revision 2). In its letter dated July 14, 1999, the licensee stated that it was in the process of risk ranking GL 96-05 MOVs in accordance with the WOG methodology described in Engineering Report V-EC-1658 (Revision 2). The licensee stated that it will revise its static test intervals to be consistent with the JOG interim static test program after completion of the WCGS MOV risk ranking process. During a telephone call conducted on January 5, 2000, the licensee clarified to the NRC that it planned to complete MOV risk ranking and implementation of the JOG static test program by the end of the year 2000.

## 5.0 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 WCGS in response to GL 96-05. NRC Inspection Reports (IRs) 50-482/91-34 (IR 91-34) and 50-482/95-04 (IR 95-04) 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. In IR 91-34, the NRC staff reviewed the scope of the licensee's MOV program in response to GL 89-10, did not identify any discrepancies associated with the scope of GL 89-10 and its supplements, and concluded that the licensee appropriately justified MOVs that were excluded from its GL 89-10 program. The staff closed the review of the GL 89-10 program at WCGS in its letter dated July 21, 1995, based on the results documented in IRs 91-34 and 95-04, and on the information contained in the licensee's letter dated May 19, 1995 (licensee designation WM 95-0087).

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 nonsafety position.

In letters dated March 17, 1997, and April 29, 1998, the licensee committed to implement the requested MOV periodic verification program at WCGS in response to GL 96-05 and did not take exception to the scope of the GL. Based on these letters and the staff's conclusions in IR 91-34, the NRC staff concludes that the licensee has made adequate commitments regarding the scope of its MOV program. No other commitments are considered necessary.

### 5.1.1 MOV Assumptions and Methodologies

Licenseses 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 IRs 91-34 and 95-04, 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 WCGS. 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 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.

### 5.1.2 GL 89-10 Long-Term Items

When evaluating the GL 89-10 program at WCGS, the NRC staff discussed in IR 95-04 several items of the licensee's MOV program to be addressed over the long term. In its letter dated July 14, 1999, the licensee reported on the status of those long-term GL 89-10 items. The licensee increased the actuator output capabilities and increased minimum thrust requirements for valves BBHV0013, BBHV0014, BBHV0015, and BBHV0016. The licensee dynamically tested several butterfly valves and confirmed their capabilities to meet design-basis operating requirements. The licensee dynamically tested several gate and globe valves and verified that test data did not reveal any age-related degradation. Also 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 issued in the staff's letter dated September 2, 1999.

In its letter dated March 17, 1997, the licensee stated that it submitted a relief request for its IST program to utilize ASME Code Case OMN-1 as an alternative to existing component stroke time and position indication testing. The NRC staff approved the licensee's relief request from the requirement of Section XI in the ASME Code in an SE issued in the staff's letter dated November 26, 1997. The licensee has stated that it plans to incorporate this code case into its MOV periodic verification program

In IR 95-04, the NRC staff discussed qualitative and quantitative aspects of the licensee's program for trending MOV performance at WCGS. For example, the licensee had established a computerized database with the capability to trend various MOV information, including MOV test data and test anomalies. The licensee periodically evaluates this information to project expected degradation during the next operating cycle and to prioritize maintenance and testing activities. In its letter dated March 17, 1997, the licensee stated that its static diagnostic test results are trended to detect any changes in critical MOV performance characteristics. In its letter dated July 14, 1999, the licensee indicated that it also uses preventive maintenance activities to detect and correct changes in actuator condition that are indicative of degraded performance.

With the licensee's ongoing MOV activities and trending program, the NRC staff concludes that no outstanding issues regarding the licensee's GL 89-10 program remain at WCGS.

### 5.1.3 JOG Program on MOV Periodic Verification

In its letters dated March 17, 1997, and April 29, 1998, the licensee committed to implement the JOG Program on MOV Periodic Verification as described in Topical Report MPR-1807 (Revision 2). In an SE issued in the staff's letter 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 WCGS. The conditions and limitations discussed in the SE dated October 30, 1997, apply to the JOG program at WCGS. The staff considers the commitments by the licensee to implement all three phases of the JOG program at WCGS to be an acceptable response to GL 96-05 for valve age-related degradation.

In its letters March 17, 1997, and July 14, 1999, the licensee stated its MOV risk-ranking methodology is being developed. The licensee will rank MOVs with respect to their relative importance to core damage frequency, including appropriate consideration regarding other consequences to be added by an expert panel. The WOG MOV risk-ranking methodology described in Engineering Report V-EC-1658 (Revision 2) is being used to develop the licensee's MOV risk-ranking methodology. The licensee indicated that the conditions and limitations discussed in the SE issued in the staff's letter dated April 14, 1998, on the WOG methodology for MOV risk ranking apply to the JOG program at WCGS. The NRC staff notes that WOG also provided an example list of risk-significant MOVs for consideration by each licensee in applying the owners group methodology. The staff considers the licensee's approach to risk-ranking MOVs at WCGS to be acceptable. During the January 5, 2000, telephone call, the licensee clarified to the NRC staff its plan to complete MOV risk ranking by the end of the year 2000.

In its letters dated March 17, 1997, and July 14, 1999, the licensee described its current MOV static diagnostic test program. MOVs in the licensee's GL 89-10 program are tested at least once every five years. The licensee stated that its current MOV static diagnostic test frequency will be revised to be consistent with the JOG interim static test program recommendations. The static diagnostic test program will be revised after the licensee completes its MOV risk-ranking process. The revised test program will be performed on a test frequency based on the safety significance and functional capability of each GL 96-05 MOV as specified by the JOG interim test program. During the January 5, 2000, telephone call, the licensee clarified to the NRC staff it was in the process of implementing the JOG interim static test program and planned to fully implement the program by the end of the year 2000.

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 staff recognizes that the 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, 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 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 SE issued in the staff's letter dated October 30, 1997, on the JOG program, the NRC staff specified 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.

#### 5.1.4 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 SE issued in the staff's letter dated October 30, 1997, on the JOG program, the NRC staff also specified that licensees are responsible for addressing the thrust or torque delivered by the MOV motor actuator and its potential degradation. Although the 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 its letters dated March 17, 1997, and July 14, 1999, the licensee indicated that, to ensure adequate actuator output capability for safety-related MOVs at WCGS to perform their design-basis functions, it uses a combination of periodic static testing, data trending, and preventive maintenance in accordance with established site procedures and programs. For example, the licensee noted that routine diagnostic test results are used to monitor and evaluate actuator capability. Actuator mechanical condition and lubrication are routinely inspected to ensure actuator output capability is not degrading.

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 July 14, 1999, the licensee stated that it evaluated each of its MOVs with respect to Limatorque Technical Update 98-01 and its Supplement 1. The Limatorque guidance resulted in a general reduction in margin; however, the output capabilities of all ac-powered MOVs were acceptable. The licensee initiated a design review and plans to implement corrective actions. The licensee noted that these corrective actions are ongoing and that the lost margin has been restored for several MOVs.

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 dc-powered MOVs. During the January 5, 2000, telephone call, the licensee clarified to the NRC that it uses current Limitorque guidance (pullout efficiency and 0.9 application factor) or a large capability margin to demonstrate adequate dc-powered actuator capability. The licensee is monitoring this issue and will evaluate 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. Any MOV operability concerns that might be identified in the future to the licensee, such as the above Limitorque technical updates, would be evaluated by the industry technical information program at WCGS in accordance with the licensee's procedures.

## 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 WCGS 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 is adequately addressing the actions requested in GL 96-05. The licensee's commitment to the JOG program is the only commitment that the licensee has made in response to the GL.

The NRC staff may conduct inspections at WCGS to verify the implementation of your commitment to follow the JOG MOV program. The implementation of the commitment includes this SE; the SE in the staff's letter dated October 30, 1997, on the JOG program, and the SE in the staff's letter dated April 14, 1998, on the Westinghouse Owners Group methodology for ranking MOVs by their safety significance. The staff has reviewed the four individual commitments numbered 1997-007, 1997-008, 1997-064, and 1998-036 (dated February 17, 2000, ADAMS accession no. ML003695890) in the licensee's Commitment Management System for WCGS that are related to the JOG program. The staff concludes that these commitments conform to the commitment the staff is relying upon concerning the JOG program that is discussed in the previous paragraph. Changes to these individual commitments would be reported to the NRC in accordance with Nuclear Energy Institute (NEI), "Guideline for Managing NRC Commitments," dated June 9, 1995, in which safety significant changes would be discussed with the NRC before the change is made.

Principal Contributors: T. Scarbrough  
S. Tingen

Date: April 4, 2000