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AUTH.NAME AUTHOR AFFILIATION  
TUCKMAN, M.S. Duke Power Co.  
RECIP.NAME RECIPIENT AFFILIATION  
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SUBJECT: Submits updated response to Joint Owners' Group periodic verification program & GL 96-05, "Periodic Verification of Safety-Related Motor-Operated Valves."

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**Duke Power Company**

*A Duke Energy Company*

EC07H  
526 South Church Street  
P.O. Box 1006  
Charlotte, NC 28201-1006

**M. S. Tuckman**  
*Executive Vice President*  
*Nuclear Generation*

(704) 382-2200 OFFICE  
(704) 382-4360 FAX

March 31, 1998

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555-0001

Subject: McGuire Nuclear Station Units 1 & 2  
Docket Nos. 50-369, 370  
Catawba Nuclear Station Units 1 & 2  
Docket Nos. 50-413, 414  
Oconee Nuclear Station Units 1, 2, & 3  
Docket Nos. 50-269, 270, 287

NRC Safety Evaluation on the Joint Owners' Group Program on Periodic Verification of Safety Related Motor-Operated Valves Dated October 30, 1997 and the Updated Response to GL 96-05

On September 18, 1996, the NRC issued Generic Letter (GL) 96-05, "Periodic Verification of Design Basis Capability of Safety Related Motor-Operated Valves." The generic letter requested a 60-day and 180-day response from licensees. The 60-day response was transmitted on November 14, 1996, and the 180-day Response was transmitted on March 17, 1997. This letter serves as the updated Duke response to the JOG PV-Program and GL 96-05.

**Background:**

The 60-day Response indicated that Duke would enhance their Periodic Verification Program to meet the recommendations made in GL 96-05. The 180-day Response indicated an intent to participate in the industry response to GL 96-05 known as the "Joint BWR and Westinghouse Owner's Group Program on Motor-Operated Valve (MOV) Periodic Verification" (JOG-PV). The 180-day Response specifically referenced the JOG-PV Program as described in MPR report 1807 rev. 0. Duke's participation was deemed provisional because the JOG-PV Program was still developing and had not

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been reviewed by the NRC.

On October 30, 1997 the NRC issued a Safety Evaluation (SE) on Revision 2 of the JOG PV-Program (MPR-1807 rev. 2). This Safety Evaluation stated that the Staff considers the JOG PV-Program an acceptable industry-wide response to GL 96-05 within the conditions and limitations described in the SE. This SE asked JOG-PV participants to update their commitments to the JOG PV-Program.

**Updated Response:**

Duke plans to continue participating in the JOG MOV-Periodic Verification Program as a member of the Westinghouse Owners Group (WOG) and implement the program elements described in Topical Report (MPR-1807 rev.2).

Enclosure 1 contains Duke's response to the conditions and limitations contained in the referenced SE.

**Schedule:**

As indicated in the SE, the JOG Program consists of three distinct phases: (1) interim test program, (2) dynamic test program, and (3) long-term periodic test program.

Implementation Schedule of the JOG Program Phases

Interim Test Program:

The interim test program consists of statically testing MOVs at frequencies based on safety significance and available margin. Duke intends to transition to the JOG test frequencies when the following Program elements are in-place and justified.

- i.) Per Item (B) of the NRC SE, the WOG's PRA approach (V-EC-1658, Rev. 1) is being formally reviewed. Any resulting SE must be evaluated by Duke.
- ii.) Per Item (J) in the SE, an adequate justification must be available for MOVs with test frequencies greater than 5 years.

Until that time, Duke plans to continue statically testing MOVs in accordance with each Site's GL 89-10 Program.

Dynamic Test Program(ongoing):

Oconee, McGuire, and Catawba will perform differential pressure tests on MOVs as required to support the program. This includes meeting the scheduling requirements of the JOG Program (note, several dynamic tests have already been performed and submitted to the JOG for evaluation).

Long-Term Periodic Test Program:

An implementation schedule will be based on the results found by the JOG Program.

Should you have any questions regarding this submittal, please contact A. Young at (704) 382-3154.

Very truly yours,



M. S. Tuckman  
Executive Vice President  
Nuclear Generation

ENCLOSURE

xc: L.A. Reyes  
Regional Administrator, Region II

V. Nerses, ONRR

P.S. Tam, ONRR

D.E. Lebarge, ONRR

S.M. Shaeffer  
Senior Resident Inspector (MNS)

D.J. Roberts  
Senior Resident Inspector (CNS)

M.A. Scott  
Senior Resident Inspector (ONS)

ENCLOSURE 1

DUKE ENERGY CORPORATION  
OCONEE, CATAWBA, and McGUIRE NUCLEAR STATIONS

**Subject: Duke's Response To The NRC's Safety Evaluation of the Joint Owners' Group Program on Periodic Verification of Motor Operated Valves**

The NRC's SE of the JOG Program on Periodic Verification of Motor Operated Valves contains the following conditions and limitations (Items A-J). Each item is addressed as indicated.

- A. JOG must submit for NRC review and approval a revision to (or replacement report for) the topical report following the JOG dynamic test program which describes the final test criteria for the long-term MOV PV program and the justification for those criteria.

Duke Response:

Duke is a member of JOG and plans to support the effort to update the topical report.

- B. Licensees that did not participate in the development of NEDC-32264 must justify their MOV risk categorization methodology as part of their implementation of the JOG program. The NRC staff is reviewing an MOV risk-ranking methodology submitted by WOG for possible endorsement.

Duke Response:

Duke's MOV risk categorization approach complies with the guidance provided in the referenced WOG Risk Ranking Methodology (V-EC-1658 rev.1). Duke is waiting for NRC endorsement of the methodology prior to adjusting PV test intervals based on the WOG Risk Ranking Approach.

- C. Licensees implementing the JOG program must address the NRC evaluation and conclusions on the JOG program provided in this SE (and in the supplement to be prepared after the results of the JOG dynamic test program are evaluated). JOG indicated that participating licensees will be requested,

following issuance of this SER, to individually notify the NRC of their plans to implement the JOG program described in Revision 2 of the topical report. Participating licensees must justify any deviations from the JOG program.

Duke Response:

This Letter serves as Duke's response to the SE and reaffirms the intention to implement the JOG PV-Program as described in Revision 2 of the Topical Report.

- D. Licensees implementing the JOG program must determine any valves that are outside the scope of applicability of the JOG overall program or the JOG dynamic test program (or deleted from the JOG program scope), such as in terms of valve manufacturer, size, type, materials, or service conditions, and must justify a separate program for MOV Periodic Verification for those valves, materials, and service conditions not encompassed by the JOG program.

Duke Response:

Duke has reviewed their GL 96-05 MOV population for "JOG applicability." It is understood that "JOG applicability" is continually being evaluated by the JOG and that "applicability" may change during the Interim Program. At this time, Kerotest Globe valves are the only valves that have been firmly identified as "outside the scope of JOG applicability" (within Duke's MOV GL 96-05 population). Age-related degradation for these MOVs will be addressed separately.

- E. Licensees implementing the JOG program must address the information provided as a result of the JOG program during and following the JOG dynamic test program. This responsibility includes notification of the NRC under 10 CFR Part 21, evaluation of experience for applicability, and consideration of effects on component operability, as appropriate.

Duke Response:

Duke will address information provided by the JOG Program.

- F. Licensees must ensure that each MOV in the JOG program will have adequate margin (including consideration for aging-related degradation) to remain operable until the next scheduled test, regardless of its risk categorization or safety significance.

Duke Response:

All GL 96-05 MOVs will remain operable until the next scheduled PV test, regardless of its risk categorization or safety significance. Typically, a 10 percent random age-related degradation is accounted for in MOV calculations.

- G. Licensees may retain their approach for MOV setup where it is justified that MOVs are properly evaluated for operability. However, when establishing test frequencies under the JOG program, licensees must apply uncertainties as appropriate in calculating actuator output or valve required thrust (or torque).

Duke Response:

Duke's "Guideline for Performing Motor Operated Valve Reviews and Calculations" (DPS-1205.19-00-0002 rev.6) appropriately applies all parameters affecting MOV-setup (i.e. uncertainties).

- H. With the focus of the JOG program on the potential age-related increase in the thrust and torque required to operate the valves, licensees must address apart from the JOG program the thrust and torque delivered by the motor actuator. Licensees must address the effects of aging on rate-of-loading (ROL) and stem friction coefficient under dynamic conditions, and other potential age-related effects such as spring-pack relaxation, and actuator and switch lubrication degradation.

Duke Response:

Duke's GL 96-05 Program Document describes the approach and methods used to identify potential age-related degradation in MOVs. This document addresses both age-related increases in required thrust/torque and age-related decreases in actuator available thrust/torque.

- I. The dynamic test sequence in the JOG program includes a static test preceding the dynamic test. JOG will evaluate available test information, to the extent possible, to determine whether the performance of a static test immediately preceding a dynamic test might affect the conclusions of the JOG program. The NRC staff will continue to monitor this issue on the basis of JOG data and NRC research results.

Duke Response:

As a participant in the JOG Program, Duke will support the evaluation of test data as deemed necessary. Currently, Duke is obligated to perform dynamic tests in accordance with the JOG dynamic test specification in Revision 2 of the Topical Report (MPR-1807 rev. 2).

- J. MOVs with scheduled test frequencies beyond 5 years will need to be grouped with other MOVs that will be tested on frequencies less than 5 years in order to validate assumptions for the longer test intervals. This review must include both valve thrust (or torque) requirements and actuator output capability.

Duke Response:

Within the JOG Program, MOVs with scheduled test frequencies beyond 5 years will have adequate justification to support their test interval. Various means of justification may be used including grouping.