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United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555-0001

Subject: Periodic Verification of Design Basis Capability of Safety-Related Motor-Operated Valves at the Davis-Besse Nuclear Power Station

Ladies and Gentlemen:

The purpose of this letter is to provide an update for the actions being taken at the Davis-Besse Nuclear Power Station (DBNPS) with respect to the Periodic Verification of Design Basis Capability of Safety-Related Motor-Operated Valves (MOVs).

Background:

On September 18, 1996, the NRC issued Generic Letter (GL) 96-05, "Periodic Verification of Design Basis Capability of Safety-Related Motor-Operated Valves." Toledo Edison's 60-day response to this GL (Serial Letter Number 2415, dated November 18, 1996) indicated that the DBNPS would continue to follow the periodic verification program as implemented in the fall of 1994. Toledo Edison's 180-day response to this GL (Serial Letter Number 2451 dated March 14, 1997) indicated that the DBNPS would implement a plant-specific program with attributes that would satisfy the intent of GL 96-05. Among these attributes was a test schedule that ensured static testing, and dynamic testing where practical and meaningful, would be conducted on each GL 96-05 program valve at a maximum interval of every three refueling outages or five years, whichever is longer. The program would provide for the determination and implementation of more frequent testing as required to ensure each GL 96-05 program valve remains operable until the next scheduled test.

Updated Response:

On October 30, 1997, the NRC issued a Safety Evaluation (SE) on the Joint Owners' Group (JOG) Program on Periodic Verification of Motor-Operated Valves (Topical Report MPR-1807, revision 2, dated July 1997). This Safety Evaluation stated that the NRC staff considers the JOG Program on Periodic Verification of Motor-Operated Valves (JOG Program) an acceptable

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industry-wide response to GL 96-05, subject to the conditions and limitations described in the SE.

The DBNPS recently became a participant in the JOG Program as a member of the Babcock and Wilcox Owner's Group (BWOG). As such, the FirstEnergy Nuclear Operating Company (FENOC) intends to update the commitment to GL 96-05 for the DBNPS to implement the program elements described in Topical Report MPR-1807, revision 2, dated July 1997, subject to the conditions and limitations described in the SE. Attachment 1 contains FENOC's response to the conditions and limitations described in the SE for the DBNPS.

Schedule:

FENOC intends to fully implement the JOG Program at the DBNPS upon completion of the following items:

- Per Item (B) of the Safety Evaluation, the MOV risk categorization methodology must be justified. MOV risk ranking has been completed at the DBNPS. The methodology used determined the risk achievement worth and Fussell-Vesely importance of all the MOVs in the DBNPS updated Probabilistic Safety Analysis (PSA). The PSA has been updated to incorporate both Level 1 and Level 2 results. The BWOG Program for Risk-Informed Inservice Testing for Air-Operated Valves was then used to categorize each MOV into one of four quadrants based on the importance measures. The MOVs were then classified as low safety significance components or high safety significance components based on this categorization. The remaining elements of the risk-ranking program for MOVs have not yet been implemented. DBNPS intends to implement these elements in parallel with a Risk-Informed Inservice Testing (RI-IST) Program for MOVs, which is scheduled for February 1, 2002 (refer to Serial Letter Number 2632, dated January 5, 2000). Until the risk ranking program is fully implemented, static test frequency will continue to be based on available margin in accordance with the current DBNPS MOV Program, including consideration for uncertainties and consideration for aging-related degradation, with the test interval not to exceed three refueling outages or five years, whichever is longer.
- Per Item (C) of the Safety Evaluation, any deviations from the JOG Periodic Verification (JOG-PV) Program must be justified. Any deviations from the JOG-PV Program will be submitted to the NRC upon completion of our review of the DBNPS risk categorization methodology.
- Per Item (J) in the Safety Evaluation, an adequate justification must be available for MOVs with test frequencies greater than five years. Because the DBNPS is on a 24-month refueling cycle, the potential exists for some MOVs to be tested on approximately six-year intervals under the present program. Until the test schedule is reviewed in detail and any required justifications prepared, static test frequency will be based on available margin as described in for SE Item (B) above.

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Should you have any questions or require additional information, please contact Mr. James L. Freels, Manager - Regulatory Affairs, at (419) 321-8466.

Sincerely yours,

A handwritten signature in black ink, appearing to read "James L. Freels". The signature is written in a cursive style with a large initial "J" and a long, sweeping underline.

GMW/s

Attachments

cc: J. E. Dyer, Regional Administrator, NRC Region III
D. V. Pickett, DB-1 NRC/NRR Senior Project Manager
K. S. Zellers, DB-1 Senior Resident Inspector
Utility Radiological Safety Board

Subject: FENOC's response to the NRC's Safety Evaluation (SE) of the Joint Owner's Group Program on Periodic Verification of Motor Operated Valves (JOG-PV Program) for the DBNPS.

The NRC's SE of the JOG-PV Program contains a number of conditions and limitations. 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 Periodic Verification Program, and the justification for those criteria.

FENOC's Response: The DBNPS is a member of the JOG-PV Program 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.

FENOC's Response: The DBNPS risk categorization approach will be submitted to the NRC for review prior to adjusting periodic verification test intervals based on risk ranking.

- 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 SE, 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.

FENOC Response: This letter serves as FENOC's response to the SE for the DBNPS and provides notification of the intent to implement the JOG-PV Program as described in Revision 2 of the Topical Report. Any deviations from the JOG-PV Program will be submitted to the NRC upon completion of our review of the DBNPS risk categorization methodology.

- 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.

FENOC Response: The DBNPS has reviewed the GL 96-05 MOV population for JOG-PV Program applicability. At this time, all DBNPS GL 96-05 MOVs are within the scope of

JOG-PV Program applicability. It is understood that the JOG-PV Program applicability may change during the JOG-PV interim program. Any changes will be evaluated for applicability to the DBNPS as they are identified.

- 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.

FENOC Response: The DBNPS will address information provided by the JOG-PV Program. This will include notification of the NRC under 10 CFR Part 21, evaluation of experience for applicability, and consideration of effects on component operability, as appropriate.

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

FENOC Response: The DBNPS MOV Program will contain measures to ensure that all GL 96-05 MOVs will remain operable until the next scheduled test, regardless of risk categorization or safety significance. Margin determination will include consideration for uncertainties and age-related degradation.

- G. Licensees may retain their approach to 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).

FENOC Response: Procedures for determination of thrust/torque requirements, MOV setup, and MOV test data evaluation at the DBNPS apply all parameters affecting MOV setup with the exception of age-related increases in required thrust/torque and some age-related decreases in actuator available thrust/torque. These age-related adjustments are applied, in accordance with DBNPS MOV Program guidance, when determining test frequencies.

- 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 and stem friction coefficient under dynamic conditions, and other potential age-related effects such as spring-pack relaxation, and actuator and switch lubrication degradation.

FENOC Response: The DBNPS MOV Program describes and documents the approach used to identify and address age-related degradation in GL 96-05 MOVs. In general, default values are used for both age-related increases in required thrust/torque and age-related decreases in

actuator available thrust/torque unless plant specific testing indicates higher values should be used.

- 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.

FENOC Response: As a participant in the JOG-PV Program, the DBNPS will support the evaluation of test data as deemed necessary. Any findings by the JOG-PV Program will be applied to the MOV program at the DBNPS as appropriate.

- 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.

FENOC Response: Once the JOG-PV Program is fully implemented at the DBNPS, any MOVs with test frequencies beyond five years will have adequate documented justification, including grouping data, to support their test interval.

COMMITMENT LIST

The following list identifies those actions committed to by the Davis-Besse Nuclear Power Station in this document. Any other actions discussed in the submittal represent intended or planned actions. They are described only as information and are not regulatory commitments. Please notify the Manager - Regulatory Affairs (419-321-8466) at the Davis-Besse Nuclear Power Station of any questions regarding this document or associated regulatory commitments.

COMMITMENTS

DUE DATE

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| 1. Implement the program elements described in Topical Report MPR-1807, revision 2, dated July 1997, subject to the conditions and limitations described in the SE at the DBNPS. This commitment supercedes previous commitments from Generic Letter 89-10 related to periodic verification of design basis capability of safety-related MOVs. | 1. Upon completion of items 2 and 3 described below. |
| 2. Implement remaining elements of the risk-ranking program for MOVs in parallel with implementing a Risk-Informed Inservice Testing (RI-IST) Program for MOVs, as described in Serial Letter Number 2632. | 2. February 1, 2002. |
| 3. Submit any deviations from the JOG-PV Program to the NRC. | 3. Upon completion of review of the DBNPS risk categorization methodology. |
| 4. Base static test frequency on available margin, including consideration for uncertainties and consideration for aging-related degradation, with the test interval not to exceed three refueling outages or five years, whichever is longer. | 4. Until risk-ranking program is fully implemented, and until test schedule is reviewed in detail and any required justifications prepared. |