



December 15, 2000

C1200-09  
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Docket Nos.: 50-315  
50-316

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Mail Stop O-P1-17  
Washington, DC 20555-0001

Donald C. Cook Nuclear Plant Units 1 and 2  
COMPLETION OF GENERIC LETTER (GL) 89-10  
MOTOR-OPERATED VALVE (MOV) PROGRAM IMPLEMENTATION  
AND DESCRIPTION OF GENERIC LETTER 96-05  
MOV PERIODIC VERIFICATION PROGRAM

- References: (1) U. S. Nuclear Regulatory Commission (NRC) GL 89-10, "Safety-Related Motor-Operated Valve Testing and Surveillance," dated June 28, 1989.
- (2) NRC GL 96-05, "Periodic Verification of Design Basis Capability of Safety-Related Motor-Operated Valves," dated September 18, 1996.
- (3) Letter from M. W. Rencheck (I&M) to NRC Document Control Desk, "Donald C. Cook Nuclear Plant Units 1 and 2, Actions Being Taken to Complete Generic Letter 89-10 and Generic Letter 96-05 Implementation," C0100-07, dated January 11, 2000.
- (4) Letter from E. E. Fitzpatrick (I&M) to NRC Document Control Desk, "Donald C. Cook Nuclear Plant Units 1 and 2, Generic Letter 96-05 Periodic Verification of Design Basis Capability of Safety Related MOV Verification Program/Follow-up Response," AEP:NRC:0966AG, dated April 18, 1997.

In accordance with the reporting requirements of NRC GL 89-10 (Reference 1), Indiana Michigan Power Company (I&M) is notifying the NRC that it has completed implementation of its Motor-Operated Valve (MOV) testing program for Donald C. Cook Nuclear Plant (CNP) Units 1 and 2. In accordance with the reporting requirements of GL 96-05 (Reference 2), I&M is providing a summary description of its MOV periodic verification program established for CNP Units 1 and 2.

By letter dated January 11, 2000 (Reference 3), I&M described actions being taken to ensure operability of the CNP Units 1 and 2 GL 89-10 program MOVs. I&M committed to ensure operability of all GL 89-10 program MOVs prior to restart of each unit, and to complete implementation of its GL 89-10 program by December 15, 2000. I&M has completed implementation of those actions and commitments.

I&M also committed in Reference 3 to implement, by December 15, 2000, an MOV periodic verification program, and to submit a summary description of that program to the NRC in accordance with GL 96-05. Attachment 1 contains a summary description of I&M's MOV periodic verification program. As part of this program implementation, two actions remain open. The schedule for completion of these actions is provided in the attachments to this letter. The attached program description supersedes the description contained in I&M's April 18, 1997, letter to the NRC (Reference 4).

As described in Attachment 1, I&M is participating in the Joint Owners' Group (JOG) MOV periodic verification program, which has been reviewed and accepted by the NRC. I&M has established its short-term MOV static testing program in accordance with the JOG program recommendations and is participating in the dynamic testing phase of the JOG program to develop additional MOV performance data for use in its long-term periodic verification program. I&M's periodic verification program requires evaluation of the results of the JOG testing for applicability to CNP Units 1 and 2, and adjustment of program assumptions as appropriate.

Attachment 2 delineates new commitments made in this letter.

In accordance with the reporting requirements contained in GL 96-05, this letter is submitted under oath and affirmation.

Should you have any questions, please contact Mr. Wayne J. Kropp, Director of Regulatory Affairs, at (616) 697-5056.

Sincerely,



M. W. Rencheck  
Vice President Nuclear Engineering

/jen

Attachments

c: J. E. Dyer  
MDEQ - DW & RPD  
NRC Resident Inspector  
R. Whale

**AFFIRMATION**

I, Michael W. Rencheck, being duly sworn, state that I am Vice President of Indiana Michigan Power Company (I&M), that I am authorized to sign and file this request with the Nuclear Regulatory Commission on behalf of I&M, and that the statements made and the matters set forth herein pertaining to I&M are true and correct to the best of my knowledge, information, and belief.

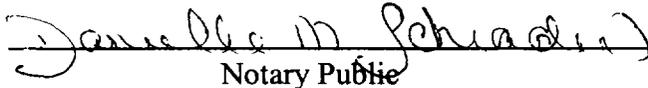
Indiana Michigan Power Company



M. W. Rencheck  
Vice President Nuclear Engineering

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 15 DAY OF December, 2000

  
Notary Public

My Commission Expires 4-4-04

**DANIELLE M. SCHRADER**  
Notary Public, Berrien County, MI  
My Commission Expires Apr 4, 2004

## ATTACHMENT 1 TO C1200-09

### SUMMARY DESCRIPTION OF THE DONALD C. COOK NUCLEAR PLANT MOTOR-OPERATED VALVE PERIODIC VERIFICATION PROGRAM

#### INTRODUCTION

In Nuclear Regulatory Commission (NRC) Generic Letter (GL) 96-05, dated September 18, 1996 (Reference 1), the NRC requested that licensees establish a program to periodically verify that safety-related motor-operated valves (MOV) will continue to be capable of performing their safety functions. Generic Letter 96-05 also discussed several elements licensees should consider in establishing an MOV periodic verification program, and required that licensees submit a summary description of their program upon completion of their GL 89-10 MOV testing programs.

By letters dated November 7, 1996 (Reference 2) and April 18, 1997 (Reference 3), Indiana Michigan Power Company (I&M) responded to GL 96-05. In these letters, I&M provided a discussion of its plans and schedule for implementation of the Donald C. Cook Nuclear Plant (CNP) MOV periodic verification program, and provided a brief description of the program. I&M committed to implement its MOV periodic verification program by the first quarter of 1998.

By letter dated January 11, 2000 (Reference 4), I&M indicated that it was engaged in a comprehensive effort to ensure operability of its GL 89-10 program MOVs. This work was initiated as part of efforts to restart each CNP unit, which had been shut down since September 1997 to address design and programmatic issues. I&M further indicated that it planned to complete implementation of its GL 89-10 and GL 96-05 programs by December 15, 2000. I&M also committed in Reference 4 to submit a summary description of its periodic verification program to the NRC in accordance with GL 96-05 reporting requirements.

I&M has completed its GL 89-10 MOV testing program for CNP Units 1 and 2, and has established an MOV periodic verification program as requested by GL 96-05. The CNP MOV periodic verification program is described and controlled in a program procedure. As required by GL 96-05, the following discussion provides a summary description of the CNP MOV periodic verification program. This program description supersedes that provided in I&M's April 18, 1997, letter (Reference 3).

#### DISCUSSION

The following sections discuss the MOV population included in the CNP Units 1 and 2 MOV periodic verification program and provide descriptions of the short and long-term program.

### MOV Population

Currently, the population of valves included in the CNP MOV periodic verification program remains as established in development and completion of the GL 89-10 MOV testing program. GL 96-05 states that the periodic verification scope should include 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. This could potentially include MOVs that were excluded from the GL 89-10 testing scope.

Based on a preliminary review, I&M expects that the periodic verification program MOV population will remain the same as established in response to GL 89-10. However, prior to the next scheduled refueling outage for each CNP unit, I&M will review the MOV population to confirm that the periodic verification program scope is in accordance with the recommendations of GL 96-05.

### Current Program

I&M is participating in, and has developed, an MOV periodic verification program based on the Joint Owners' Group (JOG) MOV periodic verification program. The JOG is comprised of the Boiling Water Reactor (BWR), Westinghouse, and Combustion Engineering Owners' Groups. The JOG MOV periodic verification program is described in their July 1997 MOV periodic verification program document (Reference 5). In an October 30, 1997, safety evaluation (Reference 6), the NRC concluded that the JOG program on MOV periodic verification provides an acceptable industry-wide response to GL 96-05, subject to the conditions and limitations described therein.

The objectives of the JOG program are to:

- Develop an interim approach and corresponding basis for JOG members to use for their GL 96-05 MOV periodic verification programs;
- Develop a basis for addressing potential degradations (increases) in MOV required thrust or torque under differential pressure conditions via a series of in-plant dynamic tests planned by participating members; and
- Use the basis developed from the planned dynamic testing to confirm or modify the interim approach developed.

Consistent with the JOG recommendations documented in Reference 5, I&M has established an MOV periodic verification program that includes continuation of ASME Inservice Testing (IST)

stroke-time testing, and static (no-flow) MOV diagnostic testing performed at intervals based on MOV risk importance and available thrust or torque margin. As described in the program procedure, each MOV's periodic verification frequency is based on application of the JOG methodology, unless plant specific experience dictates a greater verification frequency.

The JOG methodology establishes initial MOV static test frequencies based on MOV risk categorization and available torque or thrust margin as follows:

| Risk Category | Testing Frequency  |                     |                     |
|---------------|--------------------|---------------------|---------------------|
|               | Low Margin MOVs    | Medium Margin MOVs  | High Margin MOVs    |
| High Risk     | 1 operating cycles | 2 operating cycles  | 3 operating cycles  |
| Medium Risk   | 2 operating cycles | 4 operating cycles  | 6 operating cycles* |
| Low Risk      | 3 operating cycles | 6 operating cycles* | 6 operating cycles* |

\* Not to exceed 10 years

I&M's calculation of margin is consistent with the JOG methodology. For program MOVs included in the CNP Units 1 and 2 Level 1 probabilistic risk assessment (PRA), preliminary risk categories have been determined based on calculation of Fussell-Vesely importance values. Risk categorization for the balance of the CNP periodic verification program MOV population is currently based on risk significance assigned as part of 10 CFR 50.65 (Maintenance Rule) scoping efforts.

I&M plans to base its final risk categorization for the MOV periodic verification program on the Westinghouse Owners Group (WOG) methodology as documented in their August 13, 1998, report (Reference 7). The WOG risk categorization methodology has been reviewed and accepted by the NRC (Reference 8), and revised to incorporate their recommendations. By December 31, 2001, I&M will apply the WOG risk categorization methodology described in Reference 7, and adjust the MOV testing frequencies in accordance with these results.

#### Periodic Verification Testing Methodology

I&M's MOV periodic verification program testing methodology is consistent with the JOG program described in Reference 5. I&M's testing methodology includes both "as found" and "as left" MOV static diagnostic testing to provide adequate data for trending MOV performance and characteristics. This testing and trending provides a verification of MOV switch settings and enables evaluation of MOV characteristics potentially affecting actuator output.

### Application of the Results of the JOG Testing Program

The long term JOG program includes the in-situ dynamic testing of a selected population of MOVs at participating member plants to identify potential age-related degradation mechanisms that could result in increased thrust or torque requirements. The JOG has committed to evaluate the results of the dynamic MOV testing performed by the participating members, and communicate those results and any conclusions drawn to participating members. I&M's periodic verification program requires evaluation of the results of the JOG testing for applicability to CNP Units 1 and 2, and adjustment of its program as appropriate. Where JOG program information is not applicable, I&M's periodic verification program requires alternative justification for long term valve performance issues.

### CONCLUSION

I&M has completed its GL 89-10 MOV testing program at CNP Units 1 and 2, and has established an MOV periodic verification program in accordance with GL 96-05. I&M's MOV periodic verification program includes participation in the JOG dynamic MOV testing program, evaluation of the JOG test results, and modification of its program as appropriate.

## REFERENCES

1. NRC Generic Letter 96-05, "Periodic Verification of Design Basis Capability of Safety-Related Motor-Operated Valves," dated September 18, 1996.
2. Letter from E. E. Fitzpatrick (I&M) to NRC Document Control Desk, "Donald C. Cook Nuclear Plant Units 1 and 2, Generic Letter (GL) 96-05 Periodic Verification of Design Basis Capability of Safety Related Motor Operated Valves," AEP:NRC:0966AF, dated November 7, 1996.
3. Letter from E. E. Fitzpatrick (I&M) to NRC Document Control Desk, "Donald C. Cook Nuclear Units 1 and 2, Generic Letter 96-05 Periodic Verification of Design Basis Capability of Safety Related MOV Verification Program/Follow-Up Response," AEP:NRC:0966AG, dated April 18, 1997.
4. Letter from M. W. Rencheck (I&M) to NRC Document Control Desk, "Donald C. Cook Nuclear Plant Units 1 and 2, Actions Being Taken to Complete Generic Letter 89-10 and Generic Letter 96-05 Implementation," C0100-07, dated January 11, 2000.
5. MPR-1807, Revision 2, "Joint BWR, Westinghouse, and Combustion Engineering Owners' Group Program on Motor-Operated Valve (MOV) Periodic Verification," dated July 1997.
6. Letter from T. H. Essig (NRC) to T. V. Greene (JOG), "Safety Evaluation on Joint Owners' Group Program on Periodic Verification of Motor-Operated Valves Described in Topical Report MPR-1807 (Revision 2)," dated October 30, 1997.
7. Letter from L. F. Liberatori, Jr., (WOG) to NRC Document Control Desk, "Submittal of Engineering Report V-EC-1658-A, Revision 2, 'Risk Ranking Approach for Motor-Operated Valves in Response to Generic Letter 96-05,' (MUHP6051)," dated August 13, 1998.
8. Letter from T. H. Essig (NRC) to L. Liberatori (WOG), "Westinghouse Owners Group Engineering report V-EC-1658 (Revision 1), 'Risk Ranking Approach for Motor-Operated Valves in Response to Generic Letter 96-05,' (TAC #98267)," dated April 14, 1998.

ATTACHMENT 2 TO C1200-09

COMMITMENTS

The following table identifies those actions committed to by Indiana Michigan Power Company (I&M) in this document. Any other actions discussed in the submittal represent intended or planned actions by I&M. They are described to the Nuclear Regulatory Commission (NRC) for the NRC's information and are not regulatory commitments.

| Commitment  | Date  |
|---|---|
| Prior to the next scheduled refueling outage for each CNP unit, I&M will review the MOV population to confirm that the periodic verification program scope is in accordance with the recommendations of GL 96-05. | Prior to the next scheduled refueling outage for each CNP unit. |
| By December 31, 2001, I&M will apply the WOG risk categorization methodology described in Reference 7, and adjust the MOV testing frequencies in accordance with these results.                                   | December 31, 2001   |