

October 29, 2001

Mr. Robert P. Powers, Senior Vice President
Indiana Michigan Power Company
Nuclear Generation Group
500 Circle Drive
Buchanan, MI 49107

SUBJECT: DONALD C. COOK NUCLEAR PLANT, UNIT 2 - EVALUATION OF RELIEF
REQUEST FOR PRESSURE RELIEF DEVICE TESTING (TAC NO. MB2979)

Dear Mr. Powers:

By letter dated September 21, 2001, Indiana Michigan Power Company (I&M) submitted a one-time request for relief from American Society of Mechanical Engineers (ASME) *Boiler and Pressure Vessel Code* (Code) inservice testing requirements for certain safety/relief valves at Donald C. Cook Nuclear Plant, Unit 2. I&M requested one-time relief from the requirements of Operation and Maintenance Standard OM-1987, Part 1 (OM-1), paragraph 1.3.4.1(b), which requires all valves of each type and manufacture be tested within each subsequent 10-year period with a minimum of 20 percent of the valves being tested within any 48 months. I&M proposed a one-time alternative to extend the 48-month test interval to 52 months for 7 of the 32 sample groups existing in Unit 2 on the basis that compliance with the test requirement represents a hardship without compensating increase in quality and safety. The affected valves are safety/relief valves 2-SV-54, 2-SV-56, 2-SV-96, 2-SV-97, 2-SV-98S, 2-SV-102, and 2-SV-104W.

Based on the information provided in your September 21, 2001, relief request, the Nuclear Regulatory Commission (NRC) staff concludes that the proposed alternative provides reasonable assurance that the components are operationally ready, and compliance with the above ASME Code testing requirements would result in hardship without a compensating increase in the level of quality or safety.

R. Powers

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Therefore, pursuant to 10 CFR 50.55a(a)(3)(ii), the NRC staff authorizes the proposed one-time relief from the above ASME Code testing requirements to extend the 48-month test interval to 52 months for the 7 affected valves in Unit 2.

The detailed results of the NRC staff's review are provided in the enclosed safety evaluation. If you have any questions concerning this action, please call Mr. J. Stang of my staff at (301) 415-1345.

Sincerely,

/RA/

William D. Reckley, Acting Chief, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-316

Enclosure: Safety Evaluation

cc w/encl: See next page

R. Powers

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NAME	JStang	THarris	DTerao*	RHoefling	WReckley
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Donald C. Cook Nuclear Plant, Units 1 and 2

cc:

Regional Administrator, Region III
U.S. Nuclear Regulatory Commission
801 Warrenville Road
Lisle, IL 60532-4351

Attorney General
Department of Attorney General
525 West Ottawa Street
Lansing, MI 48913

Township Supervisor
Lake Township Hall
P.O. Box 818
Bridgman, MI 49106

U.S. Nuclear Regulatory Commission
Resident Inspector's Office
7700 Red Arrow Highway
Stevensville, MI 49127

David W. Jenkins, Esquire
Indiana Michigan Power Company
Nuclear Generation Group
One Cook Place
Bridgman, MI 49106

Mayor, City of Bridgman
P.O. Box 366
Bridgman, MI 49106

Special Assistant to the Governor
Room 1 - State Capitol
Lansing, MI 48909

Drinking Water and Radiological
Protection Division
Michigan Department of
Environmental Quality
3423 N. Martin Luther King Jr Blvd
P.O. Box 30630, CPH Mailroom
Lansing, MI 48909-8130

Robert C. Godley
Director, Regulatory Affairs
Indiana Michigan Power Company
Nuclear Generation Group
One Cook Place
Bridgman, MI 49106

David A. Lochbaum
Union of Concerned Scientists
1616 P Street NW, Suite 310
Washington, DC 20036-1495

A. Christopher Bakken, Site Vice President
Indiana Michigan Power Company
Nuclear Generation Group
One Cook Place
Bridgman, MI 49106

Michael W. Rencheck
Vice President, Nuclear Engineering
Indiana Michigan Power Company
Nuclear Generation Group
500 Circle Drive
Buchanan, MI 49107

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELIEF REQUEST FOR PRESSURE RELIEF DEVICE TESTING

INDIANA MICHIGAN POWER COMPANY

DONALD C. COOK NUCLEAR PLANT, UNIT 2

DOCKET NO. 50-316

1.0 INTRODUCTION

The *Code of Federal Regulations*, 10 CFR 50.55a, requires that inservice testing (IST) of certain American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 pumps and valves be performed in accordance with Section XI of the ASME *Boiler and Pressure Vessel Code* (the Code) and applicable addenda, except where alternatives have been authorized or relief has been requested by the licensee and granted by the Commission pursuant to Sections (a)(3)(i), (a)(3)(ii), or (f)(6)(i) of 10 CFR 50.55a. In order to obtain authorization or relief, the licensee must demonstrate that: (1) the proposed alternatives provide an acceptable level of quality and safety; (2) compliance would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety; or (3) conformance is impractical for its facility.

The 1989 Edition of the ASME Code is the applicable Code of record for the third 10-year interval IST program at the Donald C. Cook Nuclear Plant, Unit 2 (DCNP2). Subsection IWV of the 1989 Edition provides IST requirements for valves, and references Part 10 of the American National Standards Institute (ANSI)/ASME *Operations and Maintenance Standard* (OM-10) for valve IST requirements. OM-10 replaces specific requirements in previous editions of Section XI, Subsection IWV, of the ASME Code. Paragraph 4.3.1 of OM-10 states that safety and relief valves shall meet the IST requirements of OM Part 1 (OM-1).

2.0 BACKGROUND

By letter dated September 21, 2001, Indiana Michigan Power Company (I&M) submitted a one-time request for relief from ASME Code IST requirements for certain safety/relief valves at DCNP2. The plant IST program requires that the testing meet the requirements of OM-1987, Part 1 (OM-1). Specifically, this request seeks a one-time relief from the requirements of OM-1, paragraph 1.3.4.1(b) that requires all valves of each type and manufacture be tested within each subsequent 10-year period with a minimum of 20 percent of the valves being tested within any 48 months. The safety/relief valves for which the licensee is seeking this one-time relief include 2-SV-54, 2-SV-56, 2-SV-96, 2-SV-97, 2-SV-98S, 2-SV-102, and 2-SV-104W.

ENCLOSURE

3.0 PROPOSED ALTERNATIVE

As an alternative to the required testing, the licensee proposes a one-time extension of the 48-month test interval to 52 months for 7 of the 32 sample groups. This would extend the 48-month interval by approximately 8 percent. Since each of the 7 groups consist of either one or two safety valves, the proposed extension affects only 7 valves. The proposed extension will allow testing of the 7 valves as originally scheduled during the next Unit 2 refueling outage. The next outage was originally scheduled to begin in November 2001, but was rescheduled to begin in January 2002, due to a recent forced outage. The test interval immediately following the January 2002 refueling outage will be reduced to 44 months for the 7 safety valve groups. The interval for the 7 valve groups will be 48 months thereafter. Therefore, all safety valves within each sample group will still be tested once during the current 10-year IST interval that began on July 1, 1996.

4.0 LICENSEE'S BASIS FOR RELIEF

These safety valves are tested more frequently than other safety valves because of their relatively small sample group sizes (one or two valves per group). As stated above, the frequency specified by OM-1 for testing all Class 2 and 3 valves in a sample is 10 years. OM-1 also requires that 20 percent of the valves in a sample group be tested within any 48 months. The basis for the 20 percent value is to provide for distribution of the valves to be tested over the 10-year period. If the sample group contains only one valve, this 20 percent sampling results in a required test frequency of every 48 months. Except for 2-SV-104W, which is part of a two-valve group, all of the safety valves for which an alternative is requested have been tested within the last 47 months. The DCNP2 safety and relief valve program complies with the requirement in OM-1, Paragraph 1.3.4.1(e)(2) that any valve exceeding its stamped set pressure by 3 percent or greater shall be repaired or replaced, the cause of failure shall be determined and corrected, and the valve shall successfully pass a retest before it is returned to service.

In addition, Unit 2 was shut down for an extended outage beginning September 9, 1997, and returned to normal operating pressures and temperatures (Mode 3) on June 13, 2000. Because of the extended outage, the affected safety valves were at reduced operating pressures, temperatures, and/or operating conditions, such as vibration, for significant periods. Therefore, the actual time interval when operating conditions may have caused in-service degradation is significantly shorter than a 47 month period since the valves were last tested. The relevance of time spent at normal operating conditions is recognized in Section IWV-3500 of the 1983 Edition of the ASME Code, which defines test frequencies based on refueling outages rather than calendar months.

5.0 EVALUATION

Paragraph 1.3.4.1(b) of OM-1 requires that all safety/relief valves of each type and manufacture be tested within each subsequent 10-year period, with a minimum of 20 percent of the valves being tested within any 48 months. For the case where there is only one valve in a group, the 20 percent sampling requirement will result in a required test frequency every 48 months. For two valves in a group, each valve would have to be tested at least every 96 months with one valve tested within any 48 months.

With regard to the relief request, five valves (2-SV-54, 2-SV-56, 2-SV-96, 2-SV-97 and 2-SV-102) of the seven safety valves are each in a one-valve group and the other two valves (2-SV-98S and 2-SV-104W) are in a two-valve group. Testing of these seven valves would require that the plant be shut down and, for most valves, that the core be off-loaded. The tests were originally scheduled during the refueling outage to begin in November 2001. However, this refueling outage was rescheduled to begin in January 2002, due to a forced outage in August 2001. The forced outage impacted resources needed for planning and preparation of the refueling outage of November 2001. As a result, I&M rescheduled the outage to commence on January 19, 2002. Compliance with the 48-month requirement of OM-1 would then result in a hardship for the licensee because it would require premature commencement of the refueling outage. As such, I&M requests a one-time extension up to 4 months for the affected valves, i.e., deferring the tests from November 2001 to January through March 2002. I&M indicates that DCNP2 was shutdown for an extended outage from September 9, 1997, to June 13, 2000. During the extended outage, the affected safety valves were at reduced operating conditions (e.g., pressures, temperatures, and vibration) for significant periods. Therefore, the actual time interval when normal operating conditions may have caused in-service degradation is significantly shorter than the Code-allowed periods since the valves were last tested. It should also be noted that this relief request is for one time only. The licensee will resume its original test schedule, i.e., the test interval immediately following the January 2002 refueling outage will be 44 months for the seven safety-valve groups, and the interval for the seven safety-valve groups will be 48 months thereafter. Additionally, a review of the licensee's operating experience with these valves and general industry experience with similar valves, has found that significant degradation of these components would not be expected during this additional short period. As a result, there is reasonable assurance that the components are operationally ready. Therefore, the staff finds that shutting the plant down in order to perform the test to meet the 48-month requirement of OM-1 would result in hardship without a compensating increase in the level of quality and safety.

6.0 CONCLUSION

The staff concludes that, pursuant to 10 CFR 50.55a(a)(3)(ii), the licensee's request for a one-time relief from the above-discussed ASME Code testing requirements is authorized on the basis that there is reasonable assurance that the components are operationally ready and that compliance with these requirements would result in hardship without a compensating increase in the level of quality and safety.

Principal Contributor: Y. Huang

Date: October 29, 2001