December 16, 2003

Mr. Michael R. Kansler, President
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

SUBJECT: INSERVICE TESTING PROGRAM RELIEF REQUEST NOS. 47 AND 48, INDIAN POINT NUCLEAR GENERATING UNIT NO. 2 (TAC NOS. MB9111 AND MB9112)

Dear Mr. Kansler:

By letter dated May 12, 2003, Entergy Nuclear Operations, Inc. (the licensee) submitted Relief Request Nos. 47 and 48 for Indian Point Nuclear Generating Unit No. 2 (IP2). Relief was requested from certain requirements in the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants, Part 10, "Inservice Testing of Valves in Light-Water Reactor Power Plants" (OM-10). Specifically, Relief Request 47 sought relief from the disassembly and inspection requirements for certain check valves during refueling outages as required by OM-10, paragraph 4.3.2.4(c). Relief Request 48 sought relief from exercise testing certain manual valves every 3 months as required by OM-10, paragraph 4.2.1.1. The relief was requested for the third 10-year inservice testing (IST) interval.

The Nuclear Regulatory Commission (NRC) staff reviewed the proposed requests for relief against the requirements of the ASME OM-10 Code. The results are provided in the enclosed safety evaluation.

For Relief Request 47, the NRC staff finds the licensee's proposed alternative for the frequency for disassembly and inspection of certain service water system check valves provides an acceptable level of quality and safety. Therefore, the licensee's request is approved pursuant to 10 CFR 50.55a(a)(3)(i) for the remainder of the third 10-year IST interval for IP2. For Relief Request 48, the staff finds that the licensee's request to use portions of recent Code editions and addenda, as incorporated reference in 10 CFR 50.55a, is acceptable pursuant to 10 CFR 50.55a(f)(4)(iv) for the remainder of the third 10-year IST interval at IP2.

This completes the actions under TAC Nos. MB9111 and MB9112. If you have any questions, please contact Patrick Milano, Senior Project Manager, at 301-415-1457.

Sincerely,

/RA/

Richard J. Laufer, Chief, Section 1
Project Directorate 1
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-247 and 50-286

Enclosure: Safety Evaluation

cc w/encl: See next page

This completes the actions under TAC Nos. MB9111 and MB9112. If you have any questions, please contact Patrick Milano, Senior Project Manager, at 301-415-1457.

Sincerely,

/RA/

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Project Directorate 1
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-247 and 50-286

Enclosure: Safety Evaluation

cc w/encl: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO RELIEF REQUEST NOS. 47 AND 48

ENTERGY NUCLEAR OPERATIONS, INC

INDIAN POINT NUCLEAR GENERATING UNIT NO. 2

DOCKET NUMBER 50-247

1.0 INTRODUCTION

By letter dated May 12, 2003, Entergy Nuclear Operations, Inc. (Entergy or the licensee) requested relief from the Inservice Testing (IST) Program requirements for Indian Point Nuclear Generating Unit No. 2 (IP2). Relief was requested from certain requirements in the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants, Part 10, "Inservice Testing of Valves in Light-Water Reactor Power Plants" (OM-10). In Relief Request 47, the licensee sought relief from the frequency requirements for disassembly and inspection of certain check valves during refueling outages as required by OM-10, paragraph 4.3.2.4(c). In Relief Request 48, the licensee sought relief from exercise testing certain manual valves every 3 months as required by OM-10, paragraph 4.2.1.1.

2.0 REGULATORY EVALUATION

Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.55a, requires that the IST of certain ASME Boiler and Pressure Vessel Code Class 1, 2, and 3 pumps and valves be performed at 120-month IST program intervals in accordance with a specified ASME Code and applicable addenda, except where alternatives have been authorized or relief has been requested by the licensee and granted by the Nuclear Regulatory Commission (NRC) pursuant to paragraphs (a)(3)(i), (a)(3)(ii), or (f)(6)(i) of 10 CFR 50.55a. In accordance with 10 CFR 50.55a(f)(4)(ii), licensees are required to comply with the requirements of the latest edition and addenda of the ASME Code incorporated by reference in the regulations 12 months prior to the start of subsequent 120-month IST program intervals. In proposing alternatives or requesting 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 the facility. Section 50.55a authorizes the NRC to approve alternatives to and grant relief from ASME Code requirements upon making the necessary findings. NRC guidance in Generic Letter (GL) 89-04, "Guidance on Developing Acceptable Inservice Testing Program," provides guidelines for meeting alternatives to Code requirements. Further guidance is given in GL 89-04, Supplement 1, and NUREG-1482, "Guidelines for Inservice Testing at Nuclear Power Plants." In cases where GL 89-04 or NUREG-1482 provide guidelines that conflict with Code requirements, the licensee must obtain relief from the NRC prior to implementation of the guidelines.

The applicable Code of record at IP2 for the third 10-year IST interval is the 1987 Edition with the 1988 Addenda of the ASME OM-10.

3.0 TECHNICAL EVALUATION

3.1 Relief Request 47

3.1.1 Code Requirements

OM-10, paragraph 4.3.2.4(c) states, "As an alternative to the testing in (a) or (b) above, disassembly every refueling outage to verify operability of check valves may be used."

3.1.2 Licensee's Basis for Requesting Relief

Relief is requested to disassemble and inspect the check valves on a frequency of once during each operating cycle (24 months) in lieu of once during each refueling outage to allow the surveillance requirement to be met with the Unit online. The following underscore the usefulness and applicability of an online testing approach:

1. The design of the system is such that any one pump can be isolated and the check valve disassembled with the Unit online.

2. Performing the inspection with the Unit online reduces outage complexity.

3. The check valves are located in an area where performance of the disassembly coupled with other major outage work increases the potential development of error-likely situations in work control and reassembly processes.

4. The check valves are located in an area where workers can be affected by cold weather conditions such that weather-conscious scheduling can reduce the impact on maintenance personnel performing the task.

5. An acceptable testing frequency can be maintained separately without being tied directly to a refueling outage. Inservice testing on a frequency that maintains the acceptable time period between testing activities during the operating cycle is consistent with the intent of OM-10 and GL 89-04.

6. The number of tests to be performed using either the outage or online frequency statements should be approximately equivalent. Thus, an equivalent level of quality and safety is maintained.

3.1.3 Licensee's Proposed Alternative to Code Testing Requirements

Pursuant to 10 CFR 50.55a(a)(3)(i), Entergy proposes an alternative testing frequency for performing inservice testing of valves [SWN-1, SWN-1-1, SWN-1-2, SWN-1-3, SWN-1-4, and SWN-1-5]. The valves will be tested on a frequency of at least once during each operating cycle in lieu of once during each refueling outage as currently allowed by ASME/ANSI OM-10 paragraphs 4.3.2.2(e) and 4.3.2.4(c), and Generic Letter 89-04, Position 2.

3.1.4 Staff Evaluation

Valves SWN-1, SWN-1-1, SWN-1-2, SWN-1-3, SWN-1-4, and SWN-1-5 are 14-inch, Category C, service water (SW) pump discharge check valves. These valves are located at the discharge of each of six respective SW pumps and must open to allow flow to the SW system. The valves also have a safety function to close to prevent reverse flow and rotation of a non-operating pump.

ASME OM-10, paragraph 4.3.2, requires check valves to be exercised nominally every 3 months in a manner that verifies obturator travel to the closed, full-open, or partially-open position as required to fulfill its function. If exercising is not practical during plant operation or cold shutdowns, OM-10, paragraph 4.3.2.2(e), permits the check valves to be full-stroke exercised during each plant refueling outage. As an alternative to check valve exercise testing requirements in OM-10 paragraphs 4.3.2.4(a) and 4.3.2.4(b), paragraph 4.3.2.4(c) permits check valves to be disassembled and inspected every refueling outage to verify operability.

GL 89-04, Position 2, "Alternative to Full Flow Testing of Check Valves," provides NRC guidelines to develop a sample disassembly and inspection program where the licensee determines that it is burdensome to disassemble and inspect all applicable valves each refueling outage. The program involves grouping similar valves and testing at least one valve in each group during each refueling outage. A different valve of each group is required to be disassembled, inspected, and manually full-stroke exercised at each successive refueling outage, until the entire group has been tested. This guideline, as with OM-10 paragraph 4.3.2.4(c) requirements, limits disassembly and inspection of check valves to refueling outages only. By letter dated April 15, 1996, NRC authorized the licensee to implement a sample disassembly and inspection program for check valves SWN-1, SWN-1-1, SWN-1-2, SWN-1-3, SWN-1-4, and SWN-1-5 at IP2.

In this relief request, the licensee proposed to disassemble and inspect the check valves on a frequency of once during each operating cycle (24 months) in lieu of once during each refueling outage. The licensee's basis for the request is outlined in Section 3.1.2 above. In its review and evaluation of the licensee's relief request, the NRC staff found, based on the evaluation of the information provided by the licensee and the following considerations, that: (1) the design of the system is such that any one pump can be isolated and the check valve disassembled with the unit online; (2) the increase in risk associated with this relief request is very small and within the safety margins; and (3) the surveillance requirement will be met for disassembly and inspection of the check valves on a frequency of once during each operating cycle (24 months) with the unit online.

3.1.5 Conclusion

The NRC staff concludes that the licensee's proposed alternative testing frequency of once during each operating cycle (24 months) in lieu of once during each refueling outage to disassemble and

inspect service water system check valves SWN-1, SWN-1-1, SWN-1-2, SWN-1-3, SWN-1-4, and SWN-1-5 provides an acceptable level of quality and safety. The proposed alternative provides an acceptable method to meet the Code requirements in OM-10 paragraphs 4.3.2.2(e) and 4.3.2.4(c), and the guidelines in GL 89-04, Position 2. Therefore, the proposed alternative is authorized, pursuant to 10 CFR 50.55a(a)(3)(i), for the third 10-year IST interval at IP2.

3.2 Relief Request 48

3.2.1 Code Requirements

ASME OM-10, paragraph 4.2.1.1 states, "active Category A and B valves shall be tested nominally every 3 months, except as provided by paragraphs 4.2.1.2, 4.2.1.5, and 4.2.1.7."

3.2.2 Licensee's Proposed Alternative to Code Testing Requirements

The 29 manual valves listed below will have an exercise interval of 2 years provided that adverse conditions do not require more frequent testing.

- Chemical Volume and Control System: 360 and 370;
- Residual Heat Removal System: 732;
- Safety Injection System: 7352 and 898;
- Main Steam System: MS-105-12, MS-105-9, MS-58A-1, MS-58B-1, MS-58C-1, MS-58D-1, MS-91B and MS-91-D;
- Service Water System: SWN-27, SWN-27-1, SWN-29, SWN-30, SWN-31, SWN-31-1, SWN-32, SWN-33, SWN-38, SWN-39, SWN-4, SWN-5, SWN-56, SWN-60, SWN-70, and SWN-70-1.

3.2.3 Licensee's Basis for Requesting Relief

The licensee stated that the extension of exercising manual valves from every quarter to every 5 years has been evaluated by the OM Code committee, found acceptable, and incorporated into the 1999 Addenda and 2000 Addenda of the OM Code. The NRC stated the following limitation in the use of the 1999 and 2000 Addenda of the ASME OM Code requirements in the Federal Register (67 FR 60542), dated September 26, 2002:

> (vi) Exercise interval for manual valves. Manual valves must be exercised on a 2-year interval rather than the 5-year interval specified in paragraph ISTC-3540 of the 1999 Addenda through the latest edition and addenda incorporated by reference in paragraph (b)(3) of this section, provided that adverse conditions do not require more frequent testing.

3.2.4 Staff Evaluation

Active safety-related valves without power actuators, referred to as manual valves, require a plant operator to turn a hand wheel or other device to actuate the valve to its safety position. OM-10 requires that Category A and B valves be exercised to their safety position once every 3 months. All of the valves in this relief request are manual Category A or B valves.

The licensee proposed to exercise the identified manual valves on a 2-year interval, provided that adverse conditions do not require more frequent testing. The proposed testing interval results in approximately an 85% reduction in the testing of the valves when performing an exercise test at a nominal interval of 2 years. The 2-year exercise interval for manual valves is consistent with the time period for general experience with the operation of plant equipment over a refueling cycle.

The 1999 Addenda of the ASME OM Code, paragraph ISTC-3540, states, "manual valves shall be full-stroke exercised at least once every 5 years, except where adverse conditions may require the valve to be tested more frequently to ensure operational readiness." The regulations in 10 CFR 50.55a(b) incorporate by reference the 1999 Addenda of the ASME OM Code subject to certain limitations and modifications. The NRC limitation in 10 CFR 50.55a(b)(3)(vi) states, "manual valves must be exercised on a 2-year interval rather than the 5-year interval specified in paragraph ISTC-3540 of the 1999 Addenda...". Therefore, the licensee's request to exercise the manual valves on a 2-year interval meets the requirements of the 1999 Addenda of the ASME OM Code as modified in 10 CFR 50.55a(b)(3)(vi).

However, the licensee's Code of record is the 1987 Edition with the 1988 Addenda of the ASME OM standard OM-10 and not the 1999 Addenda to the ASME OM Code. It should be noted that 10 CFR 50.55a(f)(4)(iv) states that IST of pumps and valves may meet the requirements set forth in subsequent editions and addenda that are incorporated by reference in 10 CFR 50.55a(b), subject to the limitations and modifications listed in paragraph (b) and subject to Commission approval. The regulations also state that portions of editions or addenda may be used provided that all related requirements of the respective editions and addenda are met. The NRC staff finds that the licensee's proposal to use the Code requirements in paragraph ISTC-3540 of the 1999 ASME OM Addenda, including the limitation in 10 CFR 50.55a(b)(3)(vi) to exercise the manual valves on a 2-year interval, meets 10 CFR 50.55a(f)(4)(iv) and is, therefore, acceptable. The staff further finds that there are no related requirements pertaining to the use of this requirement.

3.2.5 Conclusion

On the basis that the 1998 Edition, up to and including the 2000 Addenda, of the ASME OM Code has been incorporated by reference in 10 CFR 50.55a(b) and that all related requirements have been met, the NRC staff concludes that the licensee's proposal to use the Code requirements in the 1999 ASME OM Code paragraph ISTC-3540 regarding the 2-year exercise interval for manual valves is approved, pursuant to 10 CFR 50.55a(f)(4)(iv), for the third 10-year IST interval.

Principal Contributor: J. Strnisha

Date: December 16, 2003