December 7, 2005

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

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3 - RELIEF REQUEST (RR) NOS. 72 AND 3-41 (TAC NOS. MC7308 AND MC7309)

Dear Mr. Kansler:

By letter dated June 8, 2005, Entergy Nuclear Operations, Inc. (the licensee), requested relief from the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, 1989 Edition, for the system hydrostatic test requirements for small bore ASME Code Class 1 reactor coolant pressure boundary vent, drain, and branch lines and connections for the Indian Point Nuclear Generating Unit Nos. 2 and 3 (IP2 and IP3).

The Nuclear Regulatory Commission staff has concluded that the proposed alternatives to the ASME Code requirements in RR Nos. 72 and 3-41 are acceptable, and that compliance with the specified ASME Code requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. The results are provided in the enclosed safety evaluation. Pursuant to 10 CFR 50.55a(a)(3)(ii), the proposed alternatives are authorized for the remainder of the third 10-year inservice inspection interval, which currently ends on December 31, 2006, for IP2, and on July 21, 2009, for IP3.

If you have any questions regarding this approval, please contact the Indian Point Project Manager, John Boska, at 301-415-2901.

Sincerely,

/RA/

Richard J. Laufer, Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
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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DATE	11/21/05	11/21/05	8/2/05	11/28/05	12/07/05

OFFICIAL RECORD COPY

Indian Point Nuclear Generating Unit Nos. 2 & 3

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELIEF REQUESTS NOS. 72 AND 3-41

INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3

DOCKET NUMBERS 50-247 AND 50-286

1.0 INTRODUCTION

By letter dated June 8, 2005, Agencywide Documents Access and Management System accession number ML051660265, Entergy Nuclear Operations, Inc. (the licensee) submitted a relief request for Indian Point Nuclear Generating Units Nos. 2 and 3 (IP2 and IP3). The submittal requested relief from selected requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," 1989 Edition, Table IWB-2500-1, Examination Category B-P, Items B15.51 and B15.71, which require a system hydrostatic test to include all ASME Code Class 1 components.

The inservice inspection (ISI) of the ASME Code Class 1, Class 2, and Class 3 components is to be performed in accordance with Section XI of the ASME Code and applicable edition and addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). 10 CFR 50.55a(a)(3) states in part that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if the licensee demonstrates that: (i) the proposed alternatives would provide an acceptable level of quality and safety, or (ii) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the pre-service examination requirements, set forth in the ASME Code, Section XI, to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) twelve months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The third 10-year ISI interval for IP2 began in December 1996 and will end in December 2006, and for IP3 it began in July 1999 and will end in July 2009. The ASME Code of record for IP2 and IP3's third 10-year ISI interval is the 1989 Edition with no Addenda. The components (including supports) may meet the requirements set forth in subsequent editions and addenda of the ASME Code incorporated by reference in 10 CFR 50.55a(b) subject to the limitations and modifications listed therein and subject to Commission approval.

Enclosure

2.0 REGULATORY EVALUATION

2.1 Components For Which Relief Is Requested

Small bore (# 1-inch), ASME Code Class 1 Reactor Coolant Pressure Boundary (RCPB) vent, drain and branch (VTDB) lines and connections.

2.2 ASME Code Requirements

ASME Section XI, 1989 Edition, Table IWB-2500-1, Examination Category B-P, Items B15.51 and B15.71 require the system hydrostatic test to include all ASME Code Class 1 components.

2.3 Relief Requested

Licensee is requesting relief from the ASME Code requirements and to perform the ASME Code Class 1 System Hydrostatic Test with the VTDB lines and connections in the closed position.

2.4 Licensee's Basis

The Class 1 VTDB lines and connections are equipped with manual valves, which provide double isolation of the RCPB. These valves are generally maintained closed during normal operation. The piping outboard of the first isolation valve is not normally pressurized. Under normal operating conditions, the VTDB lines and connections are subjected to reactor coolant system (RCS) pressures and temperatures only if leakage through the inboard valves occurs. To perform the test required by the ASME Code, it would be necessary to manually open the inboard valves to pressurize the VTDB lines and connections. Pressurization by this method defeats the double isolation and potentially presents safety concerns for the personnel performing the test. Furthermore, performing the test with the inboard isolation valves open requires several man-hours to position the valves for the test and restore the valves after the test is complete. These valves are located in close proximity to the RCS loop piping and thus require personnel entry into high radiation areas within the containment. Based on previous outage data, estimated radiation exposure associated with valve alignment and realignment would be approximately 0.5 man-Rem per test. Since this test would be performed near the end of an outage when all RCPB work has been completed, the time required to open and close these VTDB lines and connections would impact the outage schedule. Thus, compliance with this specific ASME Code requirement results in unnecessary hardship pursuant to 10 CFR 50.55a(a)(3)(ii) without a sufficient compensating increase in the level of quality and safety.

The proposed alternative provides an acceptable level of safety and quality based on the following:

1. ASME Section XI Code, paragraph IWA-4700, provides the requirements for hydrostatic pressure testing of piping and components after repairs by welding to the pressure boundary. IWA-4700(b)(5) excludes component connections, piping and associated valves that are 1-inch nominal pipe size and smaller from the hydrostatic pressure test requirement after welded repairs.

Therefore, requiring a hydrostatic test and visual examination of these RCPB VTDB lines (# 1-inch diameter) and connections once each 10-year interval is unwarranted considering that hydrostatic pressure testing a repair weld on the same connections is not required by the ASME Code, Section XI.

2. The non-isolable portion of the RCPB VTDB lines and connections will be pressurized and visually examined as required. Only the isolable portion of those small diameter VTDB lines and connections will not be pressurized, but a VT-2 examination will still be performed in these cases.

3. A typical VTDB line and connection includes two manual valves separated by a short pipe nipple, which is connected to the RCPB via another short pipe nipple and a half coupling. All connections are typically socket-welded and the welds receive a surface examination after installation. The piping and valves are normally heavy wall. The VTDB lines and connections are not subject to high stresses or cyclic loads and design ratings are significantly greater than RCPB operating or design pressure.

2.5 Licensee's Proposed Alternative

The licensee proposes to perform a system leakage test of the Class 1 systems and components during the current 10-year inspection intervals, in accordance with the 1989 Edition of the ASME Code, Section XI, Table IAB 2500-1 and IWB-5221 requirements, with the isolation valves in the normally closed position. The RCPB VTDB lines and connections will be visually examined with the isolation valves in the normally closed position. This examination will be performed at nominal operating pressure associated with 100% reactor power after satisfying the ASME Code required hold time.

3.0 TECHNICAL EVALUATION

The ASME Code requires that all Class 1 components within the RCS boundary undergo a system hydrostatic test once per interval. The licensee has proposed an alternative to the hydrostatic test requirements of the ASME Code for some line segments as described in RR-72 and RR-3-41. The line segments, as stated by the licensee, typically include two manually operated valves separated by a short pipe nipple that is connected to the RCS via another short pipe nipple and half coupling. The line configuration, as outlined, provides double isolation of the RCS. Under normal plant operating conditions, the subject line segments would see RCS temperatures and pressures only if leakage through the inboard valves occurs. For the licensee to perform the ASME Code-required test, it would be necessary to manually open the inboard valves to pressurize the line segments. Pressurization by this method would defeat the RCS double isolation and may cause safety concerns for the personnel performing the examination.

Typical VTDB lines and connections are in close proximity to the RCS loop piping. Manual actuation (opening and closing) of the VTDB valves is estimated to expose plant personnel to 0.5 man-Rem per test. Therefore, the ASME Code requirement to perform the system hydrostatic test on these isolated line segments presents a hardship for the licensee. The licensee proposed to visually examine the isolation valves in the normally closed position for leaks and evidence of past leakage during the system leakage test each refueling outage. Also, the RCS vent and drain connections will be visually examined with the isolation valves in

the normally closed position during the 10-year ISI pressure test. Therefore, the licensee's proposed alternative will provide reasonable assurance that structural integrity is maintained for the subject line segments. Imposition of the ASME Code requirement on IP2 and IP3 would result in hardship without a compensating increase in the level of quality and safety. Therefore, the licensee's proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(ii) for IP2 and IP3's third 10-year ISI interval.

4.0 CONCLUSION

The Nuclear Regulatory Commission (NRC) staff has reviewed the licensee's submittal and determined that, in accordance with 10 CFR 50.55a(a)(3)(ii), compliance with the requirements of the ASME Code, Section XI, 1989 Edition, Table IWB-2500-1, Examination Category B-P, Items B15.51 and B15.71 for all ASME Code Class 1 RCPB vent, drain and branch lines and connections results in a hardship or difficulty without a compensating increase in the level of quality and safety. The licensee's proposed alternative inspection provides reasonable assurance of structural integrity. Therefore, pursuant to 10 CFR 50.55a(a)(3)(ii), the NRC staff authorizes the proposed alternative, described in Section 2.5 above, for IP2 and IP3's third 10-year ISI interval (request for relief RR-72 and RR 3-41). All other ASME Code, Section XI requirements for which relief was not specifically requested and approved in this relief request remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: N. Ray

Date: December 7, 2005