UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 28, 2015

Vice President, Operations
Entergy Nuclear Operations, Inc.
Indian Point Energy Center
450 Broadway, GSB
P.O. Box 249
Buchanan, NY 10511-0249

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT NO. 2 - REQUEST FOR ADDITIONAL INFORMATION REGARDING THE PROPOSED LICENSE AMENDMENT TO PERMANENTLY EXTEND THE CONTAINMENT TYPE A LEAK RATE TEST FREQUENCY TO 15 YEARS (TAC NO. MF5382)

Dear Sir or Madam:

By letter dated December 9, 2014, Entergy Nuclear Operations, Inc., submitted a license amendment request that would revise Technical Specification 5.5.14 for Indian Point Nuclear Generating Unit No. 2 in order to change the frequency of the Type A, or the containment integrated leak rate test, from once every 10 years to once every 15 years on a permanent basis.

The U.S. Nuclear Regulatory Commission staff has reviewed the submittal and determined that additional information is needed to complete its review. The specific questions are found in the enclosed request for additional information (RAI). Based on our discussions, we understand that a response to the RAI will be provided within 30 days of the date of this letter.

If you have any questions, please contact me at (301) 415-1364 or Douglas.Pickett@nrc.gov.

Sincerely,

Douglas V. Pickett

Douglas V. Pickett, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-247

Enclosure:
Request for Additional Information

cc w/enclosure: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION

PERMANENT EXTENSION OF THE TYPE A LEAK RATE TEST TO 15 YEARS

ENTERGY NUCLEAR OPERATIONS, INC.

INDIAN POINT NUCLEAR GENERATING UNIT NO. 2

DOCKET NO. 50-247

CONTAINMENT AND VENTILATION BRANCH (SCVB)

SCVB RAI-1

License Amendment Request (LAR) Section 4.3.1, "ILRT [Integrated Leak Rate Test] Results" (Attachment 1, pages 5 and 6 of 19 (Reference 1)), details all test pressures in the absolute pressure scale of "psia" [pounds per square inch absolute]. Without providing the corresponding atmospheric pressure for each test pressure, the U.S. Nuclear Regulatory Commission (NRC) staff cannot confirm that the "calculated peak containment internal pressure for the design basis loss of coolant accident, P_a, ..." of 47 psig [pounds per square inch gauge] was satisfied during ILRT performance (Reference Indian Point Nuclear Generating Unit No. 2 (IP2) Technical Specification (TS) 5.5.14.b), consistent with the direction of Nuclear Energy Institute (NEI) 94-01, Revision 2-A (Reference 2) and the test methodology of American National Standards Institute/American Nuclear Society (ANSI/ANS) 56.8–2002 (Reference 3).

For example, an excerpt from Section 4.3.1 reads:

> The last two tests were:
>
> 1. The last ILRT in April 2006 had a measured containment leak rate (Ltm) at the test pressure of 60.5 psia was 0.0636% containment air weight/day with a 95% confidence level.

Since P_a equals 47 psig, a test pressure of 60.5 psia prompts concern that the test pressure was not greater than P_a.

The NRC staff requests that the licensee provide the corresponding recorded atmospheric pressures from each of the five ILRT results recorded in Section 4.3.1.

SCVB RAI-2

The last sentence of Attachment 1, page 6 of 19 (Reference 1) from LAR Section 4.3.2, "Type B and C testing," reads, "Notes are provided for test failures." However, no notes in Table 4.3-2 or subsequent pages of the LAR were provided that detail (a) which Type B and Type C local leak rate tests (LLRTs) failed, (b) what corrective actions were performed, and (c) what historical test

failures have been repetitive from the total population of Type B penetrations and Type C isolation valves.

The NRC staff requests that the licensee provide this missing information.

SCVB RAI-3

The NRC staff notes that the use of NEI 94-01, Revision 2-A (Reference 2) is acceptable for referencing by licensees proposing to amend their TSs to permanently extend the ILRT surveillance interval to 15 years, provided six specific conditions are satisfied.

Condition 1 from Section 4.1 of NEI 94-01, Revision 2-A reads:

> For calculating the Type A leakage rate, the licensee should use the definition in the NEI TR 94-01, Revision 2, in lieu of that in ANSI/ANS-56.8-2002. (Refer to SE [Safety Evaluation] Section 3.1.1.1.).

Section 5.0 of the SE for NEI 94-01, Revision 2-A, reads:

> The performance leakage rate is calculated as the sum of the Type A upper confidence limit (UCL) and as-left minimum pathway leakage rate (MNPLR) leakage rate for all Type B and Type C pathways that were in service, isolated, or not lined up in their test position (i.e., drained and vented to containment atmosphere) prior to performing the Type A test. In addition, leakage pathways that were isolated during performance of the test because of excessive leakage must be factored into the performance determination. The performance criterion for Type A tests is a performance leak rate of less than 1.0 L_a.

Section 3.2.9, "Type A test performance criterion," of ANSI/ANS-56.8-2002 (Reference 3) defines the "performance leakage rate" and reads, in part:

> The performance criterion for a Type A test is met if the performance leakage rate is less than L_a. The performance leakage rate is equal to the sum of the measured Type A test UCL and the total as-left MNPLR of all Type B or Type C pathways isolated during performance of the Type A test.

Attachment 1, page 4 of 19 of Entergy's LAR (Reference 1) for IP2 compliance with Condition 1 reads:

> Implementation of NEI 94-01 Rev 2A will require use of the definition of "performance leakage rate" defined in Section 5.0 for calculating the Type A leakage rate when performing Type A tests.

The NRC staff notes that the "As found Leakage" is on a continuous trend towards eclipsing the IP2 TS 5.5.14.d.1 leakage rate acceptance criteria of less than or equal to (≤) 0.75 L_a (i.e., 0.075 percent containment weight per day) as reflected in SCVB RAI-4 (below). The staff needs to develop a better understanding of why this phenomenon is occurring to make its regulatory decision. The staff notes that IP2's statement of compliance indicates future tense (i.e., "will

require"). To make its regulatory decision, the staff needs to understand whether IP2's Type A ILRT plant test procedures currently reflect the NEI 94-01, Revision 2-A definition of "performance leakage rate." If the IRLT test procedures currently reflect the requisite definition, the staff requests historical information as to when the requisite NEI 94-01, Revision 2-A, definition was adopted into IRLT test procedures. In addition, the staff requests that Entergy Nuclear Operations, Inc. (Entergy), provide a copy of the current IP2 IRLT test procedures, plant drawings, etc. (or procedural excerpts from these documents), to aid the staff in understanding why this phenomenon is occurring,

SCVB RAI-4

LAR Section 4.3.1, "ILRT Test Results" (Attachment 1, pages 5 and 6 of 19 (Reference 1)) summarizes the IP2 Type A ILRT test results since August 1979. These test results are summarized in the following table:

Date	As found Leakage (Percent Containment weight per day)	Test Pressure (psia)
April 2006	0.0636	60.5
June 1991	0.0478	61.7
December 1987	0.0342	62.9
September 1984	0.0320	65.6
August 1979	0.0260	62.7

The NRC staff notes that the historical trend indicates that consistently, for all five historical ILRTs, the "As found Leakage" is on a continuous trend towards eclipsing the IP2 TS 5.5.14.d.1 leakage rate acceptance criteria of $\leq 0.75\ L_a$ (i.e., 0.075 percent containment weight per day).

Given the above ILRT results trend, the NRC staff requests that:

(1) The licensee explain why this phenomenon is occurring at IP2. More importantly, what is IP2's long-term corrective action plan to arrest or reverse this trend?

(2) Entergy should include in its response a discussion of any IP2 containment modifications (major or minor) that may have affected containment integrity since August 1979.

(3) For each ILRT, the licensee provide the individual cumulative MNPLR leakage rate for all Type B and Type C pathway test values that constitute a part of the total performance leakage rate (i.e., "As found Leakage") values identified in the table above.

(4) Additional information about how IP2 plant programs satisfy the guidance of Regulatory Position 3, "Element 3: Define Implementation and Monitoring Program," of Regulatory Guide (RG) 1.174, Revision 2 (Reference 4).

REFERENCES:

1. Letter NL-14-128, dated December 9, 2014, from Lawrence Coyle, Entergy Nuclear Operations to U.S. Nuclear Regulatory Commission regarding the Proposed License Amendment Regarding Extending the Containment Type A Leak Rate Testing Frequency to 15 Years (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14353A015).

2. NEI 94-01, Revision 2-A, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," October 2008 (ADAMS Accession No. ML100620847).

3. ANSI/ANS-56.8-2002, Reaffirmed August 9, 2011, "Containment System Leakage Testing Requirements."

4. RG 1.174, Revision 2, dated May, 2011, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis" (ADAMS Accession No. ML100910006).

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