



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

June 15, 2011

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3, LICENSE
RENEWAL APPLICATION

Dear Sir or Madam:

By letter dated April 23, 2007, as supplemented by letters dated May 3, 2007, and June 21, 2007, Entergy Nuclear Operations, Inc., submitted an application pursuant to Title 10 of the *Code of Federal Regulations* Part 54, to renew the operating licenses for Indian Point Nuclear Generating Unit Nos. 2 and 3, for review by the U.S. Nuclear Regulatory Commission (NRC or the staff). The staff documented its findings in the Safety Evaluation Report Related to the License Renewal of Indian Point Nuclear Generating Unit Nos. 2 and 3 which was issued in August 2009. Since the issuance of the safety evaluation report, the staff has identified the need for additional information with respect to certain aging management programs based on lessons learned from past license renewal applications (LRAs) and recent industry operating experience. Additionally, the staff has identified issues that need additional clarification for the LRA. Therefore, the staff requests additional information as described in the enclosure.

Items in the enclosure were discussed with Mr. Robert Walpole, and a mutually agreeable date for the response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-3733, or via e-mail Robert.Kuntz@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to be "R. Kuntz", written over a white background.

Robert F. Kuntz, Sr. Project Manager
Projects Branch 2
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-247 and 50-286

Enclosure:
As stated

cc w/encl: Listserv

INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3
LICENSE RENEWAL APPLICATION
REQUEST FOR ADDITIONAL INFORMATION

RAI 3.0.3.1.2-2

Background:

The response to RAI 3.0.3.1.2-1 dated March 28, 2011, proposed to manage the effects of aging for buried steel propane piping and tanks within the scope of license renewal by monitoring tank level. License renewal application (LRA) Section 2.3.3.15 states that the license renewal function of these components is to provide a pressure boundary. NUREG-1800, "Standard Review Plan for License Renewal" (SRP-LR), Rev. 1, Section A.1.2.3.4, item 2, states that a program based solely on detecting structure and component failure is not considered an effective aging management program for license renewal.

Issue:

In order to detect the effects of aging via a change in tank level, the license renewal pressure boundary function would already have had to fail (i.e., leak). Consistent with the SRP-LR, this methodology should not be considered an effective aging management program.

Request:

Explain the basis for concluding that monitoring the propane tank level provides reasonable assurance that the license renewal pressure boundary function of the tank and piping is met.

RAI 3.0.3.1.2-3

Background:

The response to RAI 3.0.3.1.2-1 dated March 28, 2011, revised the number and frequency of buried pipe inspections and stated the number and frequency of soil testing to determine corrosivity of the soil in the vicinity of in-scope buried pipe.

Title 10 of the *Code of Federal Regulations* (10 CFR) 54.21(d) states, in part, that the final safety analysis report (FSAR) supplement must contain a summary description of the programs and activities for managing the effects of aging. SRP-LR 3.3.2.4, Rev. 1, states, in part, that the summary description of the programs and activities for managing the effects of aging for the period of extended operation in the FSAR Supplement should be sufficiently comprehensive such that later changes can be controlled by 10 CFR 50.59, and the description should contain information associated with the bases for determining that aging effects will be managed during the period of extended operation.

ENCLOSURE

Issue:

The updated final safety analysis report (UFSAR) supplement does not reflect the planned number and frequency of buried in-scope piping inspections and soil testing to be conducted during the thirty-year period starting ten years prior to the period of extended operation.

Request:

Revise the UFSAR supplement to reflect the number and frequency of buried in-scope piping inspections and soil testing to be conducted during the 30-year period starting ten years prior to the period of extended operation.

RAI 3.0.3.1.10-3

Background:

By letter dated March 28, 2011, the applicant provided its response to RAI 3.0.3.1.10-1. Regarding its ASME Class 1 small bore socket weld inspection plan at IP2 during the extended period of operation, the applicant stated that it will perform volumetric examination of "at least ten socket welds" during each 10-year period [interval] of the period of extended operation" in Part 1 and Part 3 of the response. However, it also stated "ten socket welds" in Part 4 of the response.

Also regarding its socket weld inspection plan at IP2, the applicant stated that it will perform volumetric examination of "ten socket welds in 2012" in Part 1 and Part 4 of the response. However, it also stated "at least ten socket welds in 2012" in Part 3 of the response.

Issue:

It is not clear to the staff whether the applicant intends to examine "ten" or "at least ten" socket welds during each 10-year interval of the period of extended operation. Based on IP2's plant specific operating experience, IP2 appears to have experienced five cases of socket weld failures. The staff's expectation is that a robust inspection program of socket welds is warranted and the inspection sampling should be sufficiently significant so that cracking, if exists, will be detected.

Request:

Justify the sampling adequacy for each 10-year period [interval] during the period of extended operation.

RAI B.0.4-1

Background:

Pursuant to 10 CFR 54.21(a)(3), a license renewal applicant is required to demonstrate that the effects of aging on structures and components subject to an aging management review are adequately managed so that their intended functions will be maintained consistent with the

current licensing basis for the period of extended operation. Section 3.0.1 of NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants" Revision 1 (SRP-LR), defines an aging management review as the identification of the materials, environments, aging effects, and aging management programs (AMPs) credited for managing the aging effects. In turn, SRP-LR Section A.1.2.3 defines an acceptable AMP as consisting of ten elements, including Element 10, "Operating Experience."

In addition, 10 CFR 54.21(d) requires the application to contain a FSAR supplement. This supplement must contain a summary description of the programs and activities for managing the effects of aging and the evaluation of time-limited aging analyses for the period of extended operation.

The Indian Point Nuclear Generating Units 2 and 3 license renewal application (LRA), Section B.0.4, provides a general description of how the applicant operating experience was gathered and considered in preparing the LRA. This section also states that, "Site procedures require reviews of site and relevant industry OE [operating experience] as the site continues operation through the license renewal period."

Issue:

Although LRA Section B.0.4 states that operating experience will be reviewed in the future, it does not fully describe the details of how the applicant will use future operating experience to ensure that the AMPs will remain effective for managing the aging effects during the period of extended operation. Also, it is not clear as to which AMPs will be updated based on these operating experience reviews. In addition, the LRA does not state whether new AMPs will be developed, as necessary. Further, LRA Section B.0.4 does not provide the staff reasonable assurance that ongoing operating experience reviews will continue to inform AMP updates for license renewal.

Request:

Describe in detail the programmatic activities that will be used to continually identify aging issues, evaluate them, and, as necessary, enhance the AMPs or develop new AMPs for license renewal. In this description, address the following:

- Describe the sources of plant-specific and industry operating experience that are monitored on an ongoing basis to identify potential aging issues. Indicate whether these plant-specific sources require monitoring: corrective action program, system health reports, licensee event reports (LERs), and the results of inspections performed under the AMPs. Similarly, indicate whether these industry sources require monitoring: vendor recommendations, revisions to industry standards on which the AMPs are based, LERs from other plants, NRC Bulletins, Generic Letters, Regulatory Issue Summaries, Information Notices, Regulatory Guides, License Renewal Interim Staff Guidance, and revisions to NUREG-1801, "Generic Aging Lessons Learned (GALL) Report." Describe the criteria used to classify a particular piece of information as aging related and outline the training provided to plant personnel so that they can adequately make such classifications.

- Describe how the identified aging issues are further evaluated to determine their potential impact on the plant aging management activities. Indicate whether the affected structures and components and their materials, environments, aging effects, aging mechanisms, and AMPs are identified and documented consistent with the methods used to prepare the LRA. Describe how the results of AMP inspections are considered to adjust the frequency of future inspections, establish new inspections, and ensure an adequate depth and breadth of component, material, environment, and aging effect combinations. Describe the records of these evaluations and indicate whether they are maintained in an auditable and retrievable form.
- Describe the process and criteria used to ensure that the identified enhancements are implemented in a timely manner.
- Describe the administrative controls over these programmatic activities.

Provide a summary description of these activities for the UFSAR supplement required by 10 CFR 54.21(d). If enhancements for license renewal are necessary, also provide the updates for the UFSAR supplement.

If such an operating experience program is determined to be unnecessary, provide a detailed explanation of the bases for this determination.

RAI B.1.4-1

Background:

LRA Section B.1.4 states that the Boral Surveillance Program measures physical and chemical properties of sample coupons at specified intervals. Sufficiently detailed information as to the inspection and testing intervals, and how they account for plant-specific operating experience has not been provided

10 CFR 54.21(d) states, in part, that the FSAR supplement must contain a summary description of the program and the activities for managing the effects of aging. SRP-LR 3.3.2.4, Rev. 1, states that the summary description of the programs and activities for managing the effects of aging for the period of extended operation in the FSAR supplement should be sufficiently comprehensive such that later changes can be controlled by 10 CFR 50.59, and the description should contain information associated with the bases for determining that aging effects will be managed during the period of extended operation.

Issue:

The license renewal application description of the Boral Surveillance Program does not discuss the frequency of inspection and testing activities to be performed during the period of extended operation and how they will be adequate to manage the aging effects of loss of material and loss of neutron-absorbing capability. Additionally, the UFSAR supplement does not reflect the planned number and frequency of inspections and testing.

Request:

1. State how often Boral inspection and testing activities will be conducted during the period of extended operation and, if the inspection and testing interval exceeds 10 years, explain why the frequency is adequate to manage the aging effects of loss of material and loss of neutron-absorbing capability.
2. Revise the UFSAR Supplement to reflect the number and frequency of inspections and testing to be conducted during the period of extended operation.

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Robert F. Kuntz, Sr. Project Manager
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Office of Nuclear Reactor Regulation

Docket Nos. 50-247 and 50-286

Enclosure:
As stated

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*concurrence via email

OFFICE	LA: DLR*	PM: DLR/RPB2	BC:DLR/RPB2	PM: DLR/RPB2
NAME	lKing	RKuntz	DWrona	RKuntz
DATE	05/25/2011	06/15/2011	06/07/2011	06/15/2011

OFFICIAL RECORD COPY

Letter to Vice President for Operations from Robert F. Kuntz dated June 15, 2011

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INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3, LICENSE
RENEWAL APPLICATION

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