

May 7, 2008

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 – OPERATING EXPERIENCE

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 is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review. Further requests for additional information may be issued in the future.

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 301-415-1627, or via e-mail at Kimberly.green@nrc.gov.

Sincerely,

/RA/

Kimberly Green, Safety 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: See next page

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

RAI RCS-1

The staff's review of the condition report (CR) summaries of operating experience related to Class 1 mechanical systems identified four areas of degraded conditions. Those areas are as follows: (1) borated water leakage/boric acid deposits associated with control rod drive, control rod drive mechanism, resistance temperature device, reactor pressure vessel (RPV) bottom head, seal tables, penetrations, fittings and thimble tubes; (2) seal housing bolt cracks; (3) steam generator tube indications; and (4) RPV head weld indications.

Please provide the following information for each type of degraded condition identified above, in sufficient detail for the staff to make a determination about the adequacy of corrective actions for the extended period of operation:

- (a) history of the degradation;
- (b) evaluation of the extent of degradation;
- (c) corrective actions already taken or planned;
- (d) the current status of the degraded condition;
- (e) special or augmented aging management requirements during the period of extended operation;
- (f) license renewal commitments.

Based on the staff's review of the CR list, it is not clear to the staff if this list contains all significant plant-specific reactor coolant system (RCS) component degradation experienced at Indian Point Unit 2 (IP2) and Indian Point Unit 3 (IP3). Please identify and provide the same information (items a-f) for any other significant existing conditions of aging for the RCS not specifically identified in this RAI.

In addition, please identify and provide the same information (items a-f) for other significant existing conditions of aging, if applicable, in any Class 1 mechanical components for included in LRA Section 3.2 through 3.4.

RAI RCS-2

Based on the review of the plant basis documents associated with operating experience discussions for aging management programs (AMPs) B.1.16, B.1.18, B.1.30, and B.1.31, the staff found that additional information is needed to complete its operating experience review. Therefore, please provide the following additional information to assist the staff in its review:

- (i) For AMPs B.1.16, B.1.18, B.1.30, and B.1.31, please describe in sufficient detail the plant-specific CR review that forms the basis to conclude that each of these existing programs will be effective in managing applicable aging effects, as identified in the LRA.

ENCLOSURE

(ii) For new AMPs B.1.37 and B.1.38, which are currently being developed, the AMP description of each program identifies that RCS components will be managed for thermal and/or irradiation embrittlement. Please describe in sufficient detail any operating experience for these AMPs, and the review of plant-specific and industry-wide operating experience for those RCS components that have been identified as potentially susceptible to thermal and/or irradiation embrittlement at IP2 and IP3.

RAI AUX-1

In reviewing IP2 and IP3 CR summaries related to operating experience applicable to non-Class 1 mechanical systems, and operating experience summaries for the Diesel Fuel Monitoring, Oil Analysis, Service Water Integrity, Water Chemistry Control -- Auxiliary Systems, and Water Chemistry Control -- Closed Cooling Water Systems AMPs, the staff identified conditions of aging degradation that are not described in detail in the LRA or plant basis documents. The following areas of aging degradation were identified by the staff: (1) degraded IP2 traveling screens; (2) eroded fuel line in IP2 utility tunnel caused by in-leakage; (3) erosion/corrosion of IP2 components and thru-wall leaks; (4) IP3 feedwater outer-diameter thinning; and (5) IP3 service water degradation.

The applicant is requested to provide the following information for each type of degraded condition identified above, in sufficient detail for the staff to make a determination about the adequacy of corrective actions for the extended period of operation:

- (a) history of the degradation;
- (b) evaluation of the extent of degradation;
- (c) corrective actions already taken or planned;
- (d) the current status of the degraded condition;
- (e) special or augmented aging management requirements during the period of extended operation; and
- (f) license renewal commitments.

In addition, the applicant is requested to identify and provide the same information (items a-f) for other significant existing conditions of aging in non-Class 1 mechanical components included in LRA Sections 3.2 and 3.4, which are not specifically addressed in this RAI.

RAI AUX-2

Appendix B of the LRA concluded that the Service Water Integrity Program has been effective in managing those aging effects for which it is credited based on the results of one peer assessment, one self assessment and five NRC inspections of the Generic Letter (GL) 89-13 program. NRC GL 89-13 guidelines are directed to ensure the performance of safety-related systems and components exposed to service water. It is not clear to the staff how the results of these inspections are used to confirm the effectiveness of managing aging effects in nonsafety-related components of the service water system (SWS) that are within scope for license renewal.

The staff requests the applicant to clarify whether the Service Water Integrity Program is credited for aging management of the nonsafety-related components of the SWS that are within scope for license renewal. If so, please provide evidence for the conclusion presented in the LRA, that this AMP is effective in managing age-related degradation of the SWS. If not, identify the AMP(s) that are credited for aging management of the nonsafety-related components of the SWS that are within scope for license renewal. Provide the basis for concluding that these programs will be effective for managing aging during the period of extended operation.

Letter to Entergy from K. Green, dated May 7, 2008

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RENEWAL APPLICATION – OPERATING EXPERIENCE

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