



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

April 20, 2017

Mr. Anthony Vitale  
Site Vice-President, IPEC  
Entergy Nuclear Operations, Inc.  
450 Broadway, GSB PO Box 249  
Buchanan, NY 10511-0249

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE  
INDIAN POINT LICENSE RENEWAL APPLICATION RAI SET 2017-03 (CAC  
NOS. MD5407 AND MD5408)

Dear Mr. Vitale:

By letter dated April 30, 2007, Entergy Nuclear Operations, Inc. submitted an application pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 54, to renew the operating license DPR-26 and DPR-64 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.

This request for additional information was discussed with Richard Burrone, 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 301-415-6332 or e-mail [william.burton@nrc.gov](mailto:william.burton@nrc.gov).

Sincerely,

*/RA/*

William Burton, Senior Project Manager  
Project Management and Guidance Branch  
Division of License Renewal  
Office of Nuclear Reactor Regulation

Docket Nos. 50-247 and 50-286

Enclosure:  
Requests for Additional Information

cc w/encl: Listserv

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INDIAN POINT  
LICENSE RENEWAL APPLICATION (LRA)  
REQUESTS FOR ADDITIONAL INFORMATION (RAI)

**RAI B.1.2-1**

Background

Section 54.21(a)(3) of 10 CFR requires the applicant to demonstrate that the effects of aging for structures and components will be adequately managed so that the intended function(s) will be maintained consistent with the current licensing basis for the period of extended operation. As described in SRP-LR, an applicant may demonstrate compliance with 10 CFR 54.21(a)(3) by referencing the GALL Report and when evaluation of the matter in the GALL Report applies to the plant.

GALL Report AMP XI.M18 states:

Degradation of pressure boundary closure bolting due to crack initiation, loss of preload, or loss of material may result in leakage from the mating surfaces or joint connections of pressure boundary components. Periodic inspection of pressure boundary components for signs of leakage ensures that age-related degradation of closure bolting is detected and corrected before component leakage becomes excessive. Accordingly, pressure retaining bolted connections should be inspected at least once per refueling cycle.

LRA Section B.1.2 states that the Bolting Integrity Program includes “periodic inspection of closure bolting for signs of leakage that may be due to...loss of preload.” However, from its review of the program implementing document during the onsite audit, the staff determined that the program did not appear to manage loss of preload. The staff identified this concern in Audit Items 241 and 270. In response to Audit Items 241 and 270, by letter dated December 18, 2007, the applicant stated that the program will manage loss of preload. The applicant revised LRA Table 3.4.1, Item 3.4.1-22, Table 3.3.1, Item 3.3.1-45, and Table 3.2.1, Item 3.2.1-24, to state “the Bolting Integrity Program manages loss of preload for all bolting” in the respective systems. In addition, the applicant revised Commitment #2 to state “[t]he Bolting Integrity Program manages loss of preload and loss of material for all external bolting.”

Issue

It is not clear what methods will be used to detect leakage that would indicate loss of preload of closure bolting. If visual inspections will be used, the staff notes that while visual inspections would be capable of detecting leakage of liquid-filled systems, visual inspection may not be sufficient to detect leakage for air- or gas-filled systems.

LRA Table 3.3.2-4-IP2 (and IP3), “Compressed Air System,” is an example of a system that cites the Bolting Integrity Program to manage aging effects associated with closure bolting that could be or are air-filled or gas-filled. Based on a review of LRA Section B.1.2 and SER Section 3.0.3.2.2, “Bolting Integrity,” it is not clear how aging effects for closure bolting installed in air-filled or gas-filled systems will be effectively managed because in these systems there is typically limited or no visual signs of leakage.

Enclosure

Request

1. List the in-scope systems that have portions that are air-filled and gas-filled for which aging effects associated with closure bolting are being managed by the Bolting Integrity Program.
2. State how the aging effects will be managed.
3. State any enhancements to plant-specific procedures and/or to the Bolting Integrity Program necessary to incorporate how these aging effects are managed.