



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

December 11, 2014

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 ENVIRONMENTAL REVIEW (TAC NOS. MD5411 AND MD5412)**

Dear Sir or Madam:

By letter dated April 23, 2007, Entergy Nuclear Operations, Inc. (Entergy), submitted an application and associated environmental report pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 54 and 10 CFR Part 51, to renew the operating licenses for Indian Point Nuclear Generating Unit Nos. 2 and 3 (IP2 and IP3), for review by the U.S. Nuclear Regulatory Commission (NRC). The NRC staff documented its findings related to the environmental review of Entergy's license renewal application in Supplement 38 to NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants (GEIS)" (FSEIS), which was issued in December 2010. In June 2013, NRC issued a supplement to the FSEIS, Volume 4 of Supplement 38 to NUREG-1437, to correct impingement and entrainment data presented in the FSEIS, revise conclusions regarding thermal impacts, and update the status of the NRC's consultations with the National Marine Fisheries Service under section 7 of the Endangered Species Act.

On June 20, 2013, the NRC amended its regulations at 10 CFR 51.53(c) and Appendix B to Subpart A of 10 CFR Part 51 to redefine the number and scope of the environmental issues that must be addressed during license renewal environmental reviews. This revision was supported by analyses conducted for and reported in Revision 1 to the GEIS issued concurrent with the revised rule. As a result of these changes, the NRC staff has identified the need for further review of certain environmental issues concerning the IP2 and IP3 license renewal application. The NRC staff plans to issue a second supplement to the IP2 and IP3 FSEIS to address these and other issues. To support its review of these issues, the NRC staff has identified in the enclosure, areas where additional information is needed to complete its review.

- 2 -

Items in the enclosure were discussed with Ms. Dara Gray, and a mutually agreeable date for the response is within 90 days from the date of this letter. If you have any questions, please contact me at 301-415-6459, or by e-mail at [michael.wentzel@nrc.gov](mailto:michael.wentzel@nrc.gov).

Sincerely,

***/RA/***

Michael Wentzel, 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

Items in the enclosure were discussed with Ms. Dara Gray, and a mutually agreeable date for the response is within 90 days from the date of this letter. If you have any questions, please contact me at 301-415-6459, or by e-mail at [michael.wentzel@nrc.gov](mailto:michael.wentzel@nrc.gov).

Sincerely,

*/RA/*

Michael Wentzel, 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

DISTRIBUTION: See next page

**ADAMS Accession No.: ML14308A471**

\*concurred via email

<b>OFFICE</b>	LA:RPB2:DLR	PM:RPB2:DLR	BC:RPB2:DLR	PM:RPB2:DLR
<b>NAME</b>	lKing	MWentzel	BWittick	MWentzel
<b>DATE</b>	11/10/14	12/10/14	12/10/14	12/11/14

**OFFICIAL RECORD COPY**

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3, LICENSE RENEWAL APPLICATION ENVIRONMENTAL REVIEW (TAC NOS. MD5411 AND MD5412)

DISTRIBUTION:

HARD COPY:

DLR RF

E-MAIL:

PUBLIC

RidsNrrDlr Resource  
RidsNrrDlrRpb1 Resource  
RidsNrrDlrRpb2 Resource  
RidsNrrDlrRarb Resource  
RidsNrrDlrRasb Resource  
RidsNrrDlrRapb Resource  
RidsNrrDlrRerb Resource  
RidsNrrDlrRsrg Resource  
RidsNrrDraAfpb Resource  
RidsOgcMailCenter Resource

-----  
MWentzel                      MGray, RI  
BWittick                      ABurritt, RI  
DWrona                        DonaldJackson, RI  
DPickett                      GMeyer, RI  
STurk, OGC                    MModes, RI  
BMizuno, OGC                NSheehan, RI OPA  
DRoth, OGC                   DScrenci, RI OPA  
BHarris, OGC                DTiff, RI  
AGhosh, OGC                NMcNamara, RI  
SBurnell, OPA                GNewman, RI  
DMcIntyre, OPA              JStewart, RI  
JWeil, OCA                    AmiPatel, RI

REQUESTS FOR ADDITIONAL INFORMATION  
RELATED TO INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3  
LICENSE RENEWAL APPLICATION ENVIRONMENTAL REVIEW

NUREG 1437, Revision 1, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" (GEIS), which incorporates lessons learned and knowledge gained from license renewal environmental reviews conducted by the U.S. Nuclear Regulatory Commission (NRC) since 1996, redefines the number and scope of the generic and site-specific environmental impact issues that must be addressed during license renewal environmental reviews. As documented in the GEIS, and codified in Table B-1 of Appendix B to Subpart A of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 51, the NRC has determined that there are 78 environmental issues associated with license renewal that are required, as applicable, to be evaluated as part of the NRC staff's review of a license renewal application. The NRC staff determined that 60 of these issues have been adequately addressed on a generic basis for all applicable nuclear plants. The GEIS identifies these as Category 1 (generic) issues. The NRC does not require additional analysis of those issues in site-specific environmental reviews unless there is new and significant information related to the conclusions in the GEIS that needs to be considered. Of the remaining 18 issues, 17 are identified as Category 2 issues, which require site-specific environmental reviews. The remaining issue, Chronic Effects of Electromagnetic Fields (EMFs), requires no site-specific analysis.

Based on its review of the GEIS and Table B-1 of Appendix B to Subpart A of 10 CFR Part 51, the NRC staff has determined that several environmental issues have been added to the scope of license renewal environmental reviews since the NRC staff issued the Indian Point Nuclear Generating Unit Nos. 2 and 3 (IP2 and IP3) final supplemental environmental impact statement (FSEIS) in December 2010 and the supplement to the FSEIS (Volume 4) in June 2013.

By letter dated September 8, 2014, the NRC staff notified Entergy Nuclear Operations, Inc. (Entergy) of its intent to prepare a second supplement to the FSEIS to address Entergy's (a) revised severe accident mitigation alternatives cost estimates, and (b) new aquatic impact information. In addition to those two issues, the NRC staff's FSEIS supplement will address continued storage of spent nuclear fuel, and new environmental issues identified in the NRC's 2013 revisions to the GEIS and 10 CFR Part 51.

Accordingly, the NRC staff requests the following additional information to support its evaluation of environmental issues related to the license renewal of IP2 and IP3. Your answers may incorporate or specifically refer to information previously evaluated by the NRC staff, as appropriate.

ENCLOSURE

**RAI 1 (Category 1 Issues)**

**Table 1. New Category 1 Issues**

<b>Resource Category</b>		<b>Issue</b>
1.	Air Quality	Air quality impacts (all plants)
2.	Geologic Environment	Geology and soils
3.	Surface Water Resources	Effects of dredging on surface water quality
4.	Terrestrial Resources	Exposure of terrestrial organisms to radionuclides
5.	Aquatic Resources	Exposure of aquatic organisms to radionuclides
6.		Effects of dredging on aquatic organisms
7.		Impacts of transmission line right-of-way (ROW) management on aquatic resources
8.	Human Health	Human health impact from chemicals
9.		Physical occupational hazards

1. Based on the guidance in Regulatory Guide 4.2, Supplement 1, Revision 1 (RG 4.2)(June 2013), provide a description of the affected environment and any environmental resources pertinent to the new Category 1 issues listed in Table 1 above that apply to the IP2 and IP3 site. Include information on environmental characteristics, personnel protection programs, physical features and, as appropriate, historical monitoring data that may be relevant to the NRC staff's discussion of these issues in the FSEIS supplement.

In addition to the guidance in RG 4.2, include the following matters in your description of the affected environment for the identified resource areas:

- a. **Air quality impacts:** On November 3, 2009, the Commission issued a decision in the *William States Lee and Bellefonte* combined license proceedings (CLI-09-21), in which it provided guidance to the NRC staff regarding the need to include consideration of carbon dioxide and other greenhouse gas emissions (GHG) in its environmental reviews for major licensing actions under the National Environmental Policy Act.
  - i. In support of NRC staff's GHG and climate change impact analysis, provide any significant information beyond that addressed in the GEIS. This should include site-wide emission data (annual) for GHGs for the most recent 5 years. Emissions data should include stationary combustion sources (e.g., generators, boilers, etc.), mobile sources (e.g. commuters, visitors, delivery vehicle, etc.) and other sources (e.g., refrigerant leakage, emissions from switchyard). Please:

1. identify and discuss the GHG emission sources
  2. provide information (e.g. operating hours per year, fuel consumption and rates, and energy rating as applicable for each source) used to support the GHG emission values provided;
- ii. State whether Entergy has received any Notices of Violation for the most recent 5 years from the New York State Department of Environmental Conservation (NYSDEC) associated with IP2 and IP3 air permits (3-5522-00011/00026 and 3-5522-000105/00009)? If, so identify and summarize the violations and any corrective actions taken.
  - iii. Describe the compliance history associated with the IP2 and IP3 air permits for the most recent 5 years.
- b. **Effects of dredging on surface water quality:** Provide a summary discussion of dredging practices conducted in the vicinity of surface water intakes, discharge structures, or shoreline structures, and of associated dredge spoil disposal practices. Consider activities conducted over the past 5 years and identify methods, frequency, and whether associated sediment and/or water quality analyses are performed (and summarize results). Provide copies of current, applicable U.S. Army Corps of Engineers (USACE) or NYSDEC permits which govern Entergy's dredging and discharge activities.
  - c. **Effects of dredging on aquatic organisms:** Provide a written discussion of the effects on aquatic organisms due to dredging conducted in the vicinity of IP2 and IP3 surface water intakes, discharge structures, and shoreline structures. Consider dredging activities conducted over the past 5 years. Also, include a discussion of any biological studies of species, populations, or communities that are potentially affected by dredging operations near Indian Point, including the stated purpose, methods, results, and discussion of those studies. If the USACE or NYSDEC permits assessed the environmental impacts of dredging, provide copies of those assessments.
  - d. **Human health impact from chemicals:** Provide a summary discussion of the nonradioactive chemical management program and procedures for the use, storage, and discharge of chemicals and sanitary wastes at the IP2 and IP3 site to minimize the impacts to human health.
  - e. **Physical occupational hazards:** Provide a summary discussion of occupational safety program at IP2 and IP3.
2. Provide an evaluation of any new and significant information that pertains to these issues of which you are aware, beyond the information addressed in the GEIS, regarding the environmental impacts of IP2 and IP3 license renewal.

**RAI 2 (Category 2 Issues)**

**Table 2. New Category 2 Issues**

<b>Resource Category</b>		<b>Issue</b>
1.	Groundwater Resources	Radionuclides released to groundwater
2.	Terrestrial Resources	Effects on terrestrial resources (non-cooling system impacts)
3.	Environmental Justice	Minority and low-income populations
4.	Cumulative Impacts	Cumulative impacts

1. Based on the guidance in RG 4.2, provide relevant information and an analysis of the new Category 2 issues listed in Table 2 above. To the extent that an issue may have been reviewed previously in the 2010 FSEIS or the 2013 FSEIS supplement, you may identify and incorporate the relevant information that was previously reviewed in your response, and provide any additional information needed to satisfy the guidance in RG 4.2. Further, provide an evaluation of any new and significant information regarding the affected environment and the environmental impacts of license renewal of which you are aware, beyond the information considered in the 2010 FSEIS or the 2013 FSEIS supplement.