



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

September 12, 2016

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 – SEVERE ACCIDENT MITIGATION ALTERNATIVES (CAC NOS. MD5411 AND MD5412)**

Dear Sir or Madam:

By letter dated April 23, 2007, Entergy Nuclear Operations, Inc., submitted an application 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" (FSEIS), issued in December 2010. The NRC staff supplemented its evaluation in two FSEIS supplements issued in June 2013 and December 2015.

On May 4, 2016, the Commission directed the NRC staff to perform additional sensitivity analyses as part of its evaluation of severe accident mitigation alternatives for IP2 and IP3. Accordingly, the NRC staff requests that Entergy provide additional information for consideration in the staff's review, as described in the enclosure.

This request was discussed with Mr. Richard Louie, and a mutually agreeable date for Entergy's response is within 120 days from the date of this letter. If you have any questions, please contact me at 301-415-6459, or by email at [michael.wentzel@nrc.gov](mailto:michael.wentzel@nrc.gov).

Sincerely,

**/RA/**

Michael Wentzel, Project Manager  
Environmental Review and Projects Branch  
Division of License Renewal  
Office of Nuclear Reactor Regulation

Docket Nos. 50-247 and 50-286

Enclosure: As stated  
cc w/encl: Listserv

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 Indian Point Energy Center  
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 Michael Wentzel, Project Manager  
 Environmental Review and Projects Branch  
 Division of License Renewal  
 Office of Nuclear Reactor Regulation

Docket Nos. 50-247 and 50-286  
 Enclosure: As stated  
 cc w/encl: Listserv

**ADAMS Accession No.: ML16232A119**

\*concurring via email

<b>OFFICE</b>	LA:DLR	PM: DLR/RERP	OGC	BC: DRA/ARCB	BC:DLR/RERP	PM: DLR/RERP
<b>NAME</b>	IBetts	MWentzel	BHarris	UShoop	KFolk	MWentzel
<b>DATE</b>	8/26/16	9/7/16	9/8/16	9/9/16	9/9/16	9/12/16

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INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3, LICENSE  
RENEWAL APPLICATION ENVIRONMENTAL REVIEW – SEVERE ACCIDENT  
MITIGATION ALTERNATIVES (CAC NOS. MD5411 AND MD5412)

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

**SEVERE ACCIDENT MITIGATION ALTERNATIVES**

Background

On May 4, 2016, the Commission issued a decision (CLI-16-07) in the Indian Point Nuclear Generating Unit Nos. 2 and 3 (IP2 and IP3) license renewal proceeding, in which it directed the NRC staff to supplement the IP2 and IP3 severe accident mitigation alternatives (SAMA) analysis with additional sensitivity analyses. Specifically, the Commission held that documentation was lacking for two inputs—decontamination time (TIMDEC) and cost to decontaminate non-farmland (CDNFRM)—used in the MELCOR Accident Consequence Code (MACCS) computer analyses, and that uncertainties in those input values could potentially affect the SAMA analysis cost-benefit conclusions. The Commission therefore directed the NRC staff to perform additional sensitivity analyses.

Request

1. Entergy Nuclear Operations, Inc. (Entergy) is requested to scale up the value of non-farm wealth (VALWNF) input to the SAMA analysis' base-year dollars (see pp. 41-42 of CLI-16-07), and to re-run its base analyses using this corrected VALWNF input. Entergy is requested to evaluate how the change in VALWNF may affect its identification of potentially cost-beneficial SAMAs.
2. Using the revised baseline from Request 1, Entergy is requested to run supplemental sensitivity analyses using the input values specified in CLI-16-07. Specifically:
  - a. Apply the maximum values specified by the Commission and allowed by the MACCS code for TIMDEC and CDNFRM values (one year (365 days) and \$100,000, respectively) for "heavy decontamination" (i.e., the decontamination/dose reduction factor of 15).
  - b. Exercise the additional option to explain, with sufficient justification, its rationale for choosing any additional values for the TIMDEC and CDNFRM inputs for its sensitivity analyses.

Entergy at a minimum should run its sensitivity analyses for the four worst release categories, as specified in CLI-16-07. Entergy is requested to evaluate how these sensitivity analyses may affect its identification of potentially cost-beneficial SAMAs.

3. Upon completing these additional analyses, Entergy is requested to submit the input and output files for the IP2 and IP3 MACCS code. Additionally, Entergy is requested to submit the spreadsheet (or equivalent table if another method is used) that conveys the population dose and off-site economic cost for each release category and integrates the results into a Population Dose Risk and an Offsite Economic Cost Risk for IP2 and IP3.

ENCLOSURE