



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

August 28, 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 51 and 10 CFR Part 54, 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)" (SEIS), which was issued in December 2010. In June 2013, NRC issued a final plant-specific supplement to the GEIS. The 2013 supplement to the final SEIS included corrections to impingement and entrainment data presented in the final SEIS, revised conclusions regarding thermal impacts based on newly available thermal plume studies, and an update of the status of the NRC's consultation under section 7 of the Endangered Species Act with the National Marine Fisheries Service regarding the shortnose sturgeon and Atlantic sturgeon.

By letter dated February 19, 2014, Entergy submitted updated information relevant to the impacts from the operation of IP2 and IP3 on various aquatic species in the Hudson River. The NRC staff is reviewing the updated information, 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.

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Items in the enclosure were discussed with Ms. Dara Gray, 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 301-287-9249, or by e-mail [michael.wentzel@nrc.gov](mailto:michael.wentzel@nrc.gov).

Sincerely,

***/RA Lois James for/***

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

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Sincerely,

**/RA Lois James for/**

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

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DISTRIBUTION: See next page

**ADAMS Accession No.: ML14225A847**

\*concurrent via email

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<b>DATE</b>	8/26/14	8/26/14	8/26/14	8/28/14

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RENEWAL APPLICATION ENVIRONMENTAL REVIEW (TAC NOS. MD5411  
AND MD5412)

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

Please provide data related to Entergy's February 19, 2014 letter transmitting updated aquatic impact information two different formats, referred to here as Format 1 and Format 2. The NRC staff request the data as CSV (comma-separated variable) files with column formats specified below. The NRC staff request the data for taxon and region codes defined in Tables 1 and 2.

**Table 1. Taxon Codes**

Taxon	Species
1	Alewife
2	Bay Anchovy
3	American Shad
4	Bluefish
13	Hogchoker
19	Atlantic Menhaden
22	Blueback Herring
25	Rainbow Smelt
27	Shortnose Sturgeon
28	Spottail Shiner
29	Atlantic Sturgeon
30	Striped Bass
32	Atlantic Tomcod
34	White Catfish
35	White Perch
45	Weakfish
75	Gizzard Shad

**Table 2. Region Codes**

Region	River Region
1	YK (Mile 12- 23)
2	TZ (Mile 24- 33)
3	CH (Mile 34- 38)
4	IP (Mile 39- 46)
5	WP (Mile 47- 55)
6	CW (Mile 56- 61)
7	PK (Mile 62- 76)
8	HP (Mile 77- 85)
9	KG (Mile 86- 93)
10	SG (Mile 94-106)
11	CS (Mile 107-124)
12	AL (Mile 125-152)
13	all regions 1 - 12 combined

**Format 1 Data:** Please provide the following data from the Fall Shoals Survey (FSS), Beach Seine Survey (BSS) and Long River Survey (LRS):

- (1) the unstandardized River Segment 4 annual densities (if AKRF calculated these as in the FSEIS as the 75<sup>th</sup> percentile of the weekly densities--if AKRF used some other measure, then please submit both that measure and the 75<sup>th</sup> percentile of the weekly densities) for each survey (FSS, BSS, and LRS);
- (2) the unstandardized River Segment 4 annual CPUE (catch per unit effort) used in the AKRF analysis for each survey (FSS and LRS);
- (3) the unstandardized Riverwide CPUE for each survey (FSS, BSS, and LRS); and
- (4) the Riverwide unstandardized abundance index (with an indication for each taxon of which sampling program was used for its construction) used by AKRF for trends analysis for each year and taxon listed in Table 1.

ENCLOSURE

Note that the NRC staff recognizes that the updated analysis provided in the February 19 submittal used only YOY (young-of-the year) data collected during weeks 28 through 42 during the BSS, weeks 29 through 42 during the FSS, and weeks 17 through 27 for the LRS. Please provide the units for each measurement. The NRC staff requests that the format of each of these files be supplied in the format shown in Table 3, with each taxon in Table 1 presented in an individual column and each year presented in an individual row.

**Table 3. Format for the nine Format 1 data files.**

Year	Alewife	Bay Anchovy	American Shad	Bluefish	...	Gizzard Shad
1985						
⋮						
2011						

**Format 2 Data:** The NRC staff requests the weekly YOY density; weekly YOY catch; weekly total catch; weekly number of samples; and weekly volume sampled, all by year, region, and taxon for each sampling program (FSS, BSS, and LRS). Please provide the units for each measurement. Note, Region 13 as used in the tables of weekly catch is the total weekly catch from regions 1 – 12 as defined in Table 2. The format of each of these files is presented in Table 4.

**Table 4. Detailed format for nine Format 2 files.**

For regional trend analysis based on density:										
FSS Weekly Density										
TAX ON	Region	program	lifestage	year	startdate	enddate	Week	Density (#/m <sup>3</sup> )	sedensity	nsample
1-75	1-12	FSS	YOY	1979 - 2011			Each Week			
LRS Weekly Density										
TAX ON	region	program	lifestage	year	startdate	enddate	Week	Density (#/m <sup>3</sup> )	sedensity	nsample
1-75	1-12	LRS	YOY	1979 - 2011			Each Week			
BSS Weekly Density										
TAX ON	region	program	lifestage	year	startdate	enddate	Week	Density (#/m <sup>3</sup> )	sedensity	nsample

								3)		
1-75	1-12	BSS	YOY	1979 - 2011			Each Week			

**For regional and riverwide trend analysis based on CPUE:**

**FSS Weekly Catch**

Progr am	Year	Week	Regi on	River Regio n	Taxon	Commo n Name	Count LC1/Y OY	Total Count	# Sampl es	Vol um e (m3 )
FSS	1979- 2011	Each Week	1-13		1-75					

<b>LRS Weekly Catch</b>										
Program	Year	Week	Region	River Region	Taxon	Common Name	Count LC1/YOY	Total Count	# Samples	Volume
LRS	1979-2011	Each Week	1-13		1-75					

<b>BSS Weekly Catch</b>									
Program	Year	Week	Region	River Region	Taxon	Common Name	Count LC1/YOY	Total Count	# Samples
BSS	1979-2011	Each Week	1-13		1-75				

**For riverwide trend analysis based on the Abundance Index:**

<b>FSS Abundance Index</b>					
Year	Program	Lifestage	Taxon	Index	Seindex
1979-2011	FSS	YOY	1-75		

<b>LRS Abundance Index</b>					
Year	Program	Lifestage	Taxon	Index	Seindex
1979-2011	LRS	YOY	1-75		

<b>BSS Abundance Index</b>					
Year	Program	Lifestage	Taxon	Index	Seindex
1979-2011	BSS	YOY	1-75		