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NL-12-043

March 7, 2012

Mr. David J. Wrona
Branch Chief
Projects Branch 2
Division of License Renewal
Office of Nuclear Reactor Programs
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: Endangered Species Act Consultation
Indian Point Nuclear Generating Unit Nos. 2 & 3
Docket Nos. 50-247 and 50-286
License Nos. DPR-26 and DPR-64

Dear Sir:

The purpose of this letter is to request the Nuclear Regulatory Commission ("NRC") to consider the following regarding reinitiation of consultation with the National Marine Fisheries Service ("NMFS") concerning potential impacts of Indian Point Units 2 and 3 continued operation on Atlantic sturgeon, and its proper scope.

As you are aware, on October 14, 2011, after concluding a formal consultation process under Section 7 of the Endangered Species Act ("ESA") in conjunction with Indian Point's license renewal, the National Marine Fisheries Service ("NMFS") issued a final Biological Opinion and Incidental Take Statement ("BiOp/ITS") for shortnose sturgeon (*Acipenser brevirostrum*). See Letter from Patricia Kurkle, Regional Administrator, NMFS, to David J. Wrona, Branch Chief, Division of License Renewal, NRC (Oct. 14, 2011); National Pollutant Discharge Elimination System—Cooling Water Intake Structures at Existing Facilities and Phase I Facilities, 76 Fed. Reg. 22174, 22202, 22204 (Apr. 20, 2011) (identifying Indian Point's Ristrop screens and fish return system as state of the art and the best technology available to address impingement mortality). As in NMFS's 1979 BiOp/ITS for Indian Point's initial operating licenses, NMFS's final BiOp/ITS for license renewal found that the continued operation of Indian Point during the twenty-year license renewal period is "not likely to jeopardize the continued existence of shortnose sturgeon." See BiOp/ITS at p. 61. NMFS's conclusion reflected the reality of shortnose sturgeon population dynamics in the Hudson River – first, that fishing pressure dominates the discussion of population dynamics, and second, that Indian Point's rare, non-lethal impingement of shortnose sturgeon has had no measureable effect on the Hudson River

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population of that species, which increased by more than 400% during the period of Indian Point's initial license. See BiOp/ITS at 26.

Prior to issuing its final BiOp/ITS for Indian Point, NMFS proposed listing as endangered another sturgeon species, the Atlantic sturgeon (*Acipenser oxyrinchus*), in certain northeastern regions, including the Hudson River area in the vicinity of Indian Point. See Proposed Listing Determinations for Three Distinct Population Segments of Atlantic Sturgeon in the Northeast Region, 75 Fed. Reg. 61872 (Oct. 6, 2010). Several states, including New York State, opposed the listing. See, e.g., Letter from Christopher A. Amato, New York State Department of Environmental Conservation, to Mary Colligan, Assistant Regional Administrator, Protected Resources Division, NMFS (Feb. 3, 2011). On February 6, 2012, NMFS published notification of its intent to finalize the listing for the New York Bight Distinct Population Segment of Atlantic sturgeon in the Hudson River area. See Threatened and Endangered Status for Distinct Population Segments of Atlantic Sturgeon in the Northeast Region, 77 Fed. Reg. 5880 (Feb. 6, 2012). Absent challenge, the Atlantic sturgeon listing is expected to become effective on April 6, 2012.

As a result of the anticipated listing of Atlantic sturgeon, the Nuclear Regulatory Commission ("NRC") staff has indicated that it expects to reinitiate consultation with NMFS regarding potential impacts of Indian Point's continued operation on Atlantic sturgeon. See *In the Matter of Entergy Nuclear Operations, Inc.*, Docket Nos. 50-247-LR/286-LR, NRC Staff's Statement in Response to the Atomic Safety and Licensing Board's Order of February 3, 2012, ADAMS No. ML12039A298 (Feb. 8, 2012) ("The staff expects to communicate with NMFS and to reinitiate consultations regarding [the listing of Atlantic sturgeon] under Section 7 of the ESA.").

In response to that stated expectation, Entergy respectfully requests that the NRC staff consider the enclosed regarding the reinitiation of consultation, and its proper scope. Briefly, and as discussed below, Entergy believes that NRC has demonstrated its commitment to a thorough and rigorous assessment of the potential effects of Indian Points' license renewal on endangered species. The formal consultation process associated with the ongoing license renewal proceeding has been extensive and lengthy. In particular, it encompassed a conference on Atlantic sturgeon based on substantial information provided about this species, comparable to what was provided for shortnose sturgeon. Therefore, although NMFS technically could not have rendered an opinion on Atlantic sturgeon when it issued its BiOp/ITS, because the species was not yet listed, Atlantic sturgeon were the subject of the conference within the formal consultation process between NMFS and NRC in support of Indian Point license renewal. As such, the processes completed to date provide a sufficient basis upon which to complete any additional consultation for Atlantic sturgeon that may be needed, and any such consultation can and should be limited to an abbreviated consultation not exceeding sixty (60) days.

Indian Point's formal consultation and conference process for shortnose and Atlantic sturgeon

As noted above, the formal consultation process for Indian Point, which found that continued operation of Indian Point during the period of license renewal is "not likely to jeopardize the continued existence of shortnose sturgeon," included a "conference" related to Atlantic sturgeon. See, e.g., 50 C.F.R. §§402.02 (defining conference as, in this case, informal discussions between NRC and NMFS regarding the impact of an action on proposed species) and 402.10 (applying conference process to proposed listed species, such as Atlantic sturgeon);

Letter from Patricia A. Kurkul, Regional Administrator, NMFS to David J. Wrona, Branch Chief, Division of License Renewal, NRC (Feb. 16, 2011) (agreeing that NRC's request for a conference on Atlantic sturgeon is appropriate); communication from Julie Crocker, NMFS to Andrew Stuyvenberg, NRC (Jan. 20, 2011) (confirming that it is NMFS's understanding that NRC would like to include a conference for Atlantic sturgeon in the formal consultation for shortnose sturgeon). More specifically, the formal consultation and conference process encompassed substantial technical information relating to *both shortnose sturgeon and Atlantic sturgeon*. For instance, Entergy included information on Atlantic sturgeon (equivalent to the information it provided for shortnose sturgeon) in its numerous submissions to NRC and NMFS, including its April 2011 Technical Assessment. See, e.g., Barnhouse, L., Mattson, M., & Young, J., Shortnose Sturgeon: A Technical Assessment Pursuant to the Endangered Species Act, (Prepared for Entergy Nuclear Operations, Inc., Entergy Nuclear Indian Point 2, LLC, and Entergy Nuclear Indian Point 3, LLC) (Apr. 2011) (ADAMS No. ML11126A202) ("Technical Assessment"). The key technical reports that Entergy and/or NRC provided to NMFS expressly including information on Atlantic sturgeon, and a summary of the key conclusions in those reports, are identified and set forth in Attachment A.

In addition, throughout the consultation and conference process, Entergy responded to multiple NMFS inquiries regarding Indian Point. For instance, Dr. Mark Mattson responded to NMFS's inquiries regarding Indian Point's thermal discharge with respect to shortnose and Atlantic sturgeon. See, e.g., communications from Dr. Mattson, Normandeau Associates Inc., to Mary Colligan, Assistant Regional Administrator Protected Resources, NMFS (July 8, 2011; July 25, 2011; August 5, 2011). Entergy also responded to questions posed by NMFS during conferences held on June 20, June 22, and June 29, 2011. See, e.g., NRC, Summary of Telephone Conference Calls Held on June 20, June 22, and June 29, 2011, Regarding the Ongoing Endangered Species Act Consultation for the Proposed Indian Point Nuclear Generating Unit Nos. 2 And 3 License Renewal (July 29, 2011) (ADAMS No. ML11201A306).¹

This information on Atlantic sturgeon provided during consultation and conference, as summarized in Attachment A, was sufficient to complete consultation for Atlantic sturgeon. Compare 50 C.F.R. §402.14(c) (listing information necessary for formal consultation) to Attachment A (listing documents related to Atlantic sturgeon provided to NMFS during formal consultation that establish compliance with formal consultation requirements); see also 50 C.F.R. §402.10(a, d) (providing for conference, which may be within the formal consultation process, for proposed listed species). As a result, NMFS already possesses sufficient technical information to determine that Indian Point's continued operation during the license renewal period creates no measurable effect, and certainly no risk of jeopardizing, the New York Bight Distinct Population Segment of Atlantic sturgeon, even at the current population level that has prompted NMFS' listing.

¹ Following submission of the original BA in December 2008, NRC undertook a detailed environmental assessment of Indian Point's proposed license renewal as required by the National Environmental Policy Act, which culminated in its publication of a Final Supplemental Environmental Impact Statement ("FSEIS") on December 10, 2010. See NRC, Final Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 38, Regarding Indian Point Nuclear Generating Unit Nos. 2 and 3 (Dec. 2010). In the FSEIS, NRC concluded that continued operation of Indian Point during the license renewal period would have "no discernible effect" on either Atlantic sturgeon or shortnose sturgeon, a conclusion with which we have no indication that NMFS has taken issue. See *id.* at p. 4-23 (Table indicating "SMALL" impact determinations for shortnose and Atlantic sturgeon potentially susceptible to Indian Point).

Suggestions regarding consultation

While NRC was not obligated to prepare a BA for the proposed Indian Point license renewal² or necessarily to undertake formal consultation, NRC did so, underscoring its commitment to the thorough and rigorous assessment of endangered species. Moreover, the Indian Point formal consultation process, including the conference for Atlantic sturgeon, was comprehensive and protracted.

For this reason, NRC reasonably may proceed, in either of two ways with regard to Atlantic sturgeon. NRC reasonably could elect not to provide NMFS with any additional consultation opportunity, but rather could simply request that, within forty-five (45) days, NMFS issue a revised BiOp/ITS in which NMFS provides its final (*i.e.*, non-jeopardy) conclusions and an incidental take statement for Atlantic sturgeon. See, e.g., 50 C.F.R. §402.10(d) (allowing findings issued at the conclusion of conference to be adopted as the biological opinion upon listing of species); 50 C.F.R. §402.14(e) (forty five day timeframe within which NMFS must issue a BiOp/ITS following formal consultation). Alternatively, NRC could elect to provide NMFS with a limited additional consultation opportunity, consistent with a regulatory framework that neither expressly provides for, nor contemplates, the circumstances that exist here. If NRC elects to allow additional consultation for Atlantic sturgeon, it should be limited to – at most – an abbreviated consultation to allow NMFS to resolve questions, if any, relating to Atlantic sturgeon. See 50 C.F.R. §402.14(f) (allowing NMFS to request additional data); BiOp at 56 (noting that, setting aside impingement, “all other effects to shortnose sturgeon [and therefore presumptively Atlantic sturgeon], including to their prey and from the discharge of heat, will be insignificant or discountable.”).

With respect to consultation timing, Entergy respectfully submits that sixty (60) days is sufficient here, and supported by NMFS’s regulatory framework and applicable law. As described above, NRC and Entergy *already* have provided NMFS – through the conference process during formal consultation – with sufficient information to establish that Indian Point has no impact on Atlantic sturgeon, including because impingement of Atlantic sturgeon at Indian Point is rare and highly unlikely to result in mortality. Moreover, NMFS *already* has had years to consider this information. As such, it is reasonable to conclude any additional consultation within sixty (60) days. Indeed, while Entergy is sensitive to the importance of addressing potential risks to endangered species, it is likewise sensitive to the importance of timely completion of the federal licensing processes. See, e.g., Letter from Pao-Tsin Kuo, Program Director, License Renewal and Environmental Impacts Program, NRC to Joseph E. Power, Acting Regional Administrator, NMFS (Jul. 30, 2002) (ADAMS No. ML0221304250) (reflecting NRC’s increasing concern with NMFS’s consultation delays).

Entergy appreciates the NRC’s consideration of this information regarding the appropriateness of reinitiating consultation with respect to Atlantic sturgeon, and looks forward to assisting NRC and NMFS in completing the process in as efficient a manner as possible. Should consultation on Atlantic sturgeon proceed, Entergy hereby requests the right to: 1) participate; and 2)

² Pursuant to 50 C.F.R. §402.12(b), NRC is required to produce a BA only for federal actions that are “major construction activities,” defined as “a construction project (or other undertaking having similar physical impacts) which is a major Federal action significantly affecting the quality of the human environment....” 50 C.F.R. §402.02. The NRC performed the BA in support of IPEC’s license renewal, which does not involve a “major construction activity” as defined in the regulations. Therefore, the ESA did not require that NRC prepare a BA for Indian Point’s license renewal.

receive, review and comment on any draft biological opinion and incidental take statement for Atlantic sturgeon, consistent with the practice to date for Indian Point and applicable law regarding consultation. If you have any questions or concerns, please do not hesitate to contact Dara Gray at (914) 254-8414.

Sincerely,

Patricia W. Conroy for F. Dacimo

FRD/cbr

Attachment A: Key Technical Reports and Conclusions

cc: U.S. Nuclear Regulatory Commission Document Control Desk
Mr. William Dean, Regional Administrator, NRC Region I
Mr. John Boska, NRR Senior Project Manager
Ms. Kimberly Green, NRC Environmental Project Manager
NRC Resident Inspector's Office
Patricia A. Kurkul, Regional Administrator, National Marine Fisheries Service
Mr. Sherwin E. Turk, Office of General Council, U.S. Nuclear Regulatory Commission
Ms. Bridget Frymire, New York State Department of Public Service

Key Technical Reports and Conclusions

- NRC, Biological Assessment, Indian Point Nuclear Generating Plant Unit Nos. 2 and 3 License Renewal (Dec. 2008) (ADAMS No. ML083540614) (referencing and incorporating the assessment of Atlantic sturgeon contained in the Draft Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 38, Regarding Indian Point Nuclear Generating Unit Nos. 2 and 3 (Dec. 2008) (ADAMS nos. ML083540594 and ML083540614));
- NRC, Revised Biological Assessment, Indian Point Nuclear Generating Plant Unit Nos. 2 and 3 License Renewal (Dec. 2010) (ADAMS No. ML102990046) (referencing and incorporating the assessment of Atlantic sturgeon contained in the Final Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 38, Regarding Indian Point Nuclear Generating Unit Nos. 2 and 3 (Dec. 2010) (ADAMS nos. ML103350405 and ML103350442)). Indeed, NRC's shortnose sturgeon BA expressly acknowledges that, while its scope must by regulation be limited to federally listed species, *i.e.*, shortnose sturgeon, it nonetheless references and incorporates the information on Atlantic sturgeon contained within chapters 2 and 4 of the Final SEIS. See Revised BA at 2; Final SEIS at 2-77 to 2-79, 4-57 to 4-60;
- ASA, 2010 Field Program And Modeling Analysis Of The Cooling Water Discharge From The Indian Point Energy Center, Final Report (Prepared For Indian Point Energy Center) (Jan. 31, 2011); ASA, Part 1 of Response to the NYSDEC Staff Review of the 2010 Field Program and Modeling Analysis of the Cooling Water Discharge from the Indian Point Energy Center (Prepared For Entergy Nuclear Indian Point 2, LLC and Entergy Nuclear Indian Point 3, LLC) (March 29, 2011); ASA, Part 2 of Response to the NYSDEC Staff Review of the 2010 Field Program and Modeling Analysis of the Cooling Water Discharge from the Indian Point Energy Center (Prepared For Entergy Nuclear Indian Point 2, LLC and Entergy Nuclear Indian Point 3, LLC) (March 31, 2011);
- NRC, Supplement to Revised Biological Assessment, Indian Point Nuclear Generating Unit Nos. 2 and 3 License Renewal (July 2011) (ADAMS No. ML11203A100);
- Barnthouse, L., Mattson, M., & Young, J., Shortnose Sturgeon: A Technical Assessment Pursuant to the Endangered Species Act, (Prepared for Entergy Nuclear Operations, Inc., Entergy Nuclear Indian Point 2, LLC, and Entergy Nuclear Indian Point 3, LLC) (Apr. 2011) (ADAMS No. ML11126A202) (Hereinafter "Technical Assessment");
- Letter from Elise N. Zoli, Goodwin Procter, Counsel for Entergy Nuclear Operations, Inc., to David J. Wrona, Branch Chief, NRC Division of License Renewal (Sept. 6, 2011) (providing comments on NMFS's shortnose sturgeon draft BiOp); and
- Email from Elise N. Zoli Goodwin Procter, Counsel for Entergy Nuclear Operations, Inc., to Julie Crocker, NMFS (Sept. 20, 22, 23 2011) (answering questions on draft biological opinion regarding radiological releases and attaching relevant reports).

- Entergy Nuclear, Inc., Annual Radiological Environmental Operating Report, Indian Point Nuclear Generating Station Units 1, 2, and 3, January 1-Decemebt 31, 2010 (2011).
- Skinner L. & Sinnot, Timothy, New York State Department of Environmental Conservation, Measurement of strontium-90 (^{90}Sr) and other Radionuclides in Edible Tissues and Bone/Carapace of Fish and Blue Crabs from the Lower Hudson River, New York (Nov. 2009).

Briefly, these technical reports can be summarized as follows:

- *Indian Point does not, and is not expected to, entrain Atlantic sturgeon.* As for the shortnose sturgeon, historical entrainment monitoring data demonstrate the total absence of Atlantic sturgeon entrainment at Indian Point. See, e.g., Technical Assessment at 17. As with the shortnose sturgeon, Atlantic sturgeon eggs adhere to the river bottom and are found only in spawning grounds outside the vicinity of Indian Point (typically in freshwater approximately 38 miles upstream from Indian Point near Hyde Park, or, at a minimum, upstream of the salt wedge, which is usually located upstream of Indian Point). See *Id.* at 14-15. Also as with shortnose sturgeon, newly hatched Atlantic sturgeon larvae inhabit deep channels located upriver from Indian Point, and remain in deep water channels when they disperse down river (*Id.* at 6, 15), so would not be expected to – and in fact do not – encounter Indian Point's intake structures.
- *Impingement of Atlantic sturgeon at Indian Point is rare, and survival is high.* Atlantic sturgeon have low impingement rates (averaging 6.5 per year at Indian Point 2 and 7 per year at Indian Point 3 from 1980 to 1990; Technical Assessment at 17), and sturgeon impingement survival rates for the modified Ristrop screens later installed at Indian Point are expected to be 85% or higher (Technical Assessment at 20). As such, the level of impingement resulting from the continued operation of Indian Point likewise should be “not likely to result in jeopardy” to Atlantic sturgeon. Moreover, although Atlantic sturgeon share many life history traits with shortnose sturgeon that serve to minimize, if not eliminate, the risk of entrainment at Indian Point, Atlantic sturgeon’s life history differs from shortnose sturgeon in a key aspect that makes Atlantic sturgeon even less susceptible than shortnose sturgeon to impingement at Indian Point. Specifically, where the shortnose sturgeon is an estuary-resident species, the Atlantic sturgeon is truly anadromous, living in the ocean as an adult and returning to the Hudson River only to spawn. As a result, the Atlantic sturgeon spends much less of its adult life actually in the Hudson River; therefore, over the course of an individual’s lifetime, is considerably less susceptible than the shortnose sturgeon to impingement at Indian Point. Moreover, survival from Indian Point’s state-of-the-art impingement system is expected to be high. See Technical Assessment at 2; EPA, Technical Development Document for the Proposed Section 316(b) Phase II Existing Facilities Rule 6-30 (EPA-821-R-11-001) (Mar. 28 2011).
- NMFS concluded in its BiOp/ITS that Indian Point’s thermal discharge should have no effect on shortnose sturgeon. See BiOp/ITS at 44, 46-47. The same rationale applies to Atlantic sturgeon. See Technical Assessment, p. 21.

- NMFS concluded in its BiOp/ITS that the effects to shortnose sturgeon from radionuclides are “insignificant and discountable.” BiOp/ITS at 51. The same rationale applies to Atlantic sturgeon.
- NMFS concluded in its BiOp/ITS that the concentrations of other pollutants allowed by Indian Point’s State Pollution Discharge Elimination System permit were likewise “insignificant and discountable.” See BiOp/ITS at 51-54. The same rationale applies to Atlantic sturgeon.
- In the final analysis, the reason that Indian Point is not expected to affect, let alone jeopardize, Atlantic sturgeon is clear and well documented; much as with shortnose sturgeon, the population dynamics of Atlantic sturgeon are overwhelmingly determined by fishing. See, e.g., Threatened and Endangered Status for Distinct Population Segments of Atlantic Sturgeon in the Northeast Region, 77 Fed. Reg. 5880, 5908, 5910 (Feb. 6, 2012) (reviewing potential impingement and entrainment impacts on Atlantic sturgeon but not including those potential threats as a basis for the Atlantic sturgeon’s risk of extinction and instead citing unsustainable bycatch). Moreover, the Atlantic sturgeon’s life history is similar to that of the shortnose sturgeon as it relates to Indian Point. As a result, Atlantic sturgeon also are not susceptible to entrainment and only very rarely subject to non-lethal impingement at Indian Point; indeed, over their lifetime, Atlantic sturgeon are less susceptible to impingement at Indian Point than shortnose sturgeon, and likewise experience high survival (*i.e.*, negligible mortality).