

Rani/ Eric: For your action.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
One Blackburn Drive
Gloucester, MA 01930-2298

PT

JAN 23 2007

James A. Thomas
Enercon Services, Inc.
5100 E. Skelly Drive, Suite 450
Tulsa, Oklahoma 74135

Dear Mr. Thomas,

This in response to your letter dated November 22, 2006 requesting information on the presence of any listed species in the vicinity of Entergy's Indian Point power plant, located along the Hudson River in Buchanan, New York. Entergy announced in November 2006 that they are in the process of completing an application to be filed with the U.S. Nuclear Regulatory Commission (NRC) for a potential 20 year renewal of Indian Point's operating licenses. The operating license for Unit 2 expires on September 28, 2013 and the license for Unit 3 expires on December 12, 2015.

A population of federally endangered shortnose sturgeon (*Acipenser brevirostrum*) occurs in the Hudson River. Shortnose sturgeon have been documented to occur in the Hudson River from the northern end of Staten Island in New York Harbor (RM -3) to the Troy Dam (RM 151). From late fall to early spring, adult shortnose sturgeon concentrate in a few overwintering areas. Spawning adults concentrate near Kingston (RM 94) while one group of non-spawning adults concentrates near Kingston and another group of non-spawners concentrates near Haverstraw Bay (RM 33-40). When water temperatures reach 8°C, typically in early to mid-April, reproductively active adults begin a rapid, directed migration upstream to the spawning grounds that extend from below the Federal Dam at Troy to about Cossackie (RM 151-125). Spawning typically occurs until water temperatures reach 15°C (generally from late April through May) after which adults disperse quickly down river into their summer range. The broad summer range occupied by adult shortnose sturgeon extends from approximately RM 27 to RM 112. Similar to non-spawning adults, most juveniles occupy the broad region of Haverstraw Bay (RM 33-40) by late fall and early winter. Juveniles are distributed throughout the mid-river region during the summer (RM 27-112) and concentrate in the Haverstraw Bay region during the late fall. In recent years (since 2000), individual shortnose sturgeon have been documented as far downriver as Upper New York Harbor in January, March, April, November and December.

Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) are also present in the Hudson River. Atlantic sturgeon are considered a Candidate Species as NMFS has initiated a status review for this species to determine if listing as threatened or endangered under the ESA is warranted. If it is determined that listing is warranted, a final rule listing the species could be published within a year from the date of publication of the listing determination or proposed rule. Sturgeon yolk sac larvae (YSL) and post yolk sac larvae (PYSL) have been documented in the vicinity of Indian



Point. Given that two distinct distributions of YSL and PYSL have been identified in the river (above RM 120 and RM 48 to 110), it is assumed that the larvae in the lower river grouping are Atlantic sturgeon. As such, entrainment is a significant concern for Atlantic sturgeon in this area of the river.

NMFS has several concerns regarding the potential for the authorized withdrawals and discharges to affect sturgeon. NMFS' primary concern is the likelihood of impingement of sturgeon on screens or racks at plant intakes. Information provided in the application by Dynegy for an Endangered Species Act (ESA) Section 10(a)(1)(B) permit for their Roseton and Danskammer plants indicated that from 1972-1998, 37 shortnose sturgeon were impinged at Indian Point Unit 2 and from 1976-1998, 26 shortnose sturgeon were impinged at Indian Point Unit 3. NMFS has no information on likely impingement since 1998; however, we have no information that suggests it no longer occurs. Shortnose sturgeon impinged on intake screens or racks experience high levels of injury and/or mortality. This information suggests that unauthorized take has occurred in the past at these plants and may continue to occur. Additionally, Atlantic sturgeon eggs and/or larvae are likely to be present in this region of the river and may be subject to entrainment in the facility's intakes. Both shortnose and Atlantic sturgeon may also be affected by the discharge of heated effluent, chlorine, and other pollutants or antifouling agents.

It is the understanding of NMFS that Indian Point is currently operating pursuant to a New York State Pollutant Discharge Elimination System (NYPDES) permit issued in 1987. This permit expired in 1992 and has been administratively extended each year since. Currently, the facility operates with Ristroph modified traveling screens, a fish handling and return system, and variable speed pumps. These intake modifications are intended to reduce the potential for impingement and entrainment at the facility. According to Entergy, this design, along with required seasonal flow reductions and generation outages, attains an estimated 77% reduction in impingement mortality and a 35% reduction in entrainment mortality (ASA 2003). NMFS does not currently have any information on how this system may affect the impingement or entrainment of sturgeon.

In 2004, the New York Department of Environmental Conservation (NY DEC) issued a draft permit which would require Indian Point to use the Best Technology Available (BTA) to minimize the adverse environmental impact of the facility (i.e., impingement and entrainment). According to the NY DEC, each year Indian Point Units 2 and 3 causes the mortality of more than a billion fish from entrainment of various life stages of fishes through the plant and impingement of fishes on intake screens. NY DEC has determined that the BTA for Indian Point is the construction of a closed cycle cooling system to replace the existing once through cooling system. The closed cycle cooling system would dramatically decrease the amount of water withdrawn from the Hudson River and, as such, is likely to greatly decrease the number of organisms impinged and entrained at the facility's intakes. The potential of closed-cycle cooling for minimizing environmental impacts is substantial, with greater than a 98% reduction in fish mortality (ASA 2003). It is NMFS understanding that the NRC must review and approve the use of closed-cycle cooling at Indian Point and that this may become a condition of a renewed operating license for the facility. Due to administrative and legal challenges, a final NYPDES permit has not been issued by NY DEC.

While closed-cycle cooling is likely to minimize the potential for impingement and entrainment of sturgeon, NMFS will need additional information to determine whether any effects to these species are likely under the terms of a new NYPDES permit and renewed NRC license (e.g., volume of water to be withdrawn, intake velocity, screen size, pollutants to be discharged). Additionally, NMFS remains concerned about the impacts of the facility's current operations (i.e., with once-through cooling). As such, NMFS requests that Entergy provide NMFS with the best available information on impacts of the facility on sturgeon species. As noted above, NMFS has some information prior to 1998 but has no information on likely rates of impingement or entrainment since then. NMFS looks forward to working cooperatively with Entergy, the NY DEC and the NRC during the relicensing process to minimize the effects of Indian Point on sturgeon in the Hudson River. My staff would be interested in meeting with Entergy and/or NRC staff to further discuss this issue. Should you have any questions regarding this correspondence or to arrange a meeting to discuss the effects of Indian Point on sturgeon in the Hudson River, please contact Julie Crocker of my staff at (978)281-9300 x6530.

Sincerely,



Mary A. Colligan
Assistant Regional Administrator
for Protected Resources

Cc: Rusanowsky - F/NER4
Knutson - EPA NY
Jacobson, Wilson - NY DEC
Kuo - NRC
Lindow - F
Scida, Hartley, Damon-Randall - F/NER3

File Code: Sec 7 NRC Indian Point renewal of Operating License

PCTS: T/NER/2006/07100