UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
55 Great Republic Drive
Gloucester, MA 01930-2276

MAY - 1 2014

Dara Gray
Entergy Nuclear Operations, Inc.
Indian Point Energy Center
450 Broadway, Suite 1
Buchanan, New York 10511

Dear Ms. Gray,

This is to follow up on comments we submitted on March 6, 2014 regarding the "Proposed Draft Monitoring Plan for Indian Point Energy Center Take of Atlantic and Shortnose Sturgeons by Impingement at Cooling Water Intakes, Revision 1" dated December 5, 2013 and a proposed meeting agenda you submitted to us on March 25, 2014. The comments provided here are to be considered in addition to the comments submitted to you on March 6, 2014. As you know, it has been over a year since we issued a Biological Opinion regarding the continued operations of Indian Point; we are anxious to get monitoring in place during the Fall of 2014. In order to accelerate the completion of the monitoring plan, we are providing you with additional direction for development of the plan. We will be happy to meet with you to discuss these requirements; however, as we note below, we require certain information from you before we can have a productive meeting.

Monitoring at the Trash Racks

IP1

You have indicated that the trash racks at IP1 are no longer intact. We recognize that if there is no potential for impingement of sturgeon at the IP1 trash racks, then requiring monitoring at the IP1 trash racks may not be reasonable or appropriate. However, without more information on the specific condition of the racks, including whether there are any trash bars remaining and what the spacing is between the remaining bars, we cannot determine appropriate monitoring at the IP1 racks. Please provide photographic evidence to us to confirm the state of the racks prior to our meeting so that we can review the information and consider monitoring requirements. .

IP2 and IP3

In the two drafts of the monitoring plan, you propose to monitor for impinged fish at the IP2 and IP3 racks with two separate monitoring technologies (ARIS and video cameras). It is our understanding that neither technology has been tested at Indian Point. Therefore, before we can determine if either of these technologies is appropriate for documenting impingement of shortnose and Atlantic sturgeon at the IP2 and IP3 trash racks, you must carry out a feasibility study with these technologies. The feasibility study testing these two technologies must occur

during the first year of monitoring so as to test the technologies under a wide variety of conditions and document their strengths and weaknesses. The feasibility study phase must include the following components:

- Demonstrate the feasibility of the proposed technology to provide a view of the trash racks clear enough to document impinged fish;
- Determine the efficiency of the detection system (i.e., what percentage of impinged fish are reliably detected, what percentage of the screen is covered at any one given time).
- Demonstrate the range of conditions (weather, tides, lighting, turbidity levels) in which the system is reliable.

We expect the feasibility study could be carried out with dummy fish or any native fish. For purposes of the pilot study, you could tie dead fish or dummies to the rack as the focus will be on detection ability of the equipment. During the one year feasibility study, you must submit monthly reports to us summarizing your findings regarding the ability of the technology to detect impinged fish.

Once the one year feasibility study is completed, you will need to submit the results with a recommendation of which technology(s) to carry forward into a pilot study of longer duration. The goals of the pilot study will be to provide data that can become the basis for the assumptions built into the statistical method for the long-term sampling proposal. From our initial review, we did not find any fundamental flaws with the proposed statistical method you provided on March 25; however, it is based on too many assumptions that have no available data to support them. Data must be obtained to fill these gaps before any calculations are conducted to extrapolate the data. Key assumptions include the following:

- Retention time is on the order of days so that all sturgeon impinged during a week will be observed during at least one of the two proposed sampling events;
- All impinged sturgeon present on the screen during a sampling day are observed;
- Individual sturgeon can be uniquely identified while still on the trash rack; and,
- All impinged sturgeon will have the same retention time (which you acknowledge is unlikely under field conditions).

The critical factors that will need to be established during the pilot study are:

- Retention time of sturgeon;
- Efficiency of the monitoring system (i.e., what percentage of impinged fish are reliably detected during each sampling event);
- Influence of seasonal, weather, tidal, or operational conditions on retention time and/or detection ability; and,
- Ability to uniquely identify impinged sturgeon.

Carrying out such a pilot study is critical to establish sufficient baseline data from which to make assumptions necessary for the statistical model. We expect that a pilot study will occur for at least one year and will involve intensive monitoring (at a minimum 4 randomly selected days per week for 24 hours per day). After a minimum of one year of pilot study data has been collected, you can then analyze the data and use it to support a proposal for scaled back monitoring if you can demonstrate that the reduced level of monitoring can be extrapolated to provide a full estimate. Until and unless such a scale-back is approved by NMFS, the pilot study phase must

continue. As required by the ITS, all observations of impinged sturgeon must be reported to NMFS within 24 hours.

Forebays

You must implement a pilot study to demonstrate the feasibility of the proposed camera system in the forebays. Before we can determine if the proposed monitoring plan is adequate, we must have confirmation that the proposed camera system is adequate to achieve the goals of the monitoring plan. A feasibility study must be carried out that establishes the following:

- Efficiency of the monitoring system (i.e., what percentage of fish located in the forebay are reliably detected during each sampling event and the size range of fish that can be reliably detected, what percentage of the forebay can be monitored at any one time);
- Influence of seasonal, weather, tidal, or operational conditions on detection ability; and,
- Verification that the proposed camera and lighting system will achieve sufficient visibility in the full range of turbidity conditions expected in the river. This feasibility testing needs to document the range for each camera and the size of the targets that can be readily distinguished with the cameras.

We expect that a feasibility study could be carried out with any native fish species and/or with dummy fish. The feasibility study must be carried out for one year. During that year, you must provide monthly reports summarizing your findings regarding the ability of the technology to detect fish.

Additionally, as noted in our March comments, you must provide a detailed QA/QC plan for the use of image processing software, including information on how you will groundtruth detections. Following the one year feasibility study, you must present the data obtained and your analysis as to the effectiveness of the camera system in the forebay and any recommendations for changes (number of cameras, locations, alternative technology, etc.).

Monitoring at the Traveling Screens

The proposal outlined in the December 5, 2013 plan for monitoring at the IP1, IP2 and IP3 traveling screens is largely acceptable. However, as noted in our March 2014 letter, before we can approve this portion of the plan, you must provide the following:

- Detailed implementation plan for the collection procedures, including handling plans for shortnose and Atlantic sturgeon and a detailed description of how the nets will be monitored (i.e., the number of staff, how often the net will be checked and cleared).
- An analysis of the impacts to sturgeon (i.e., potential for stress, entanglement, injury) due to remaining in the nets in relatively shallow water with other fish during that time period.

While we agree that sampling 3 days per week should satisfy the requirements of the Reasonable and Prudent Measures, before we can approve your proposed sampling schedule (Monday, Wednesday, Friday), you must provide information on plant operating conditions which demonstrates that operations are no different on Monday, Wednesday, or Friday than the rest of the week (for example, is the facility more or less likely to be operational on a weekend and/or is it reasonable to assume that operational conditions and the amount of water withdrawn are the same during the week compared to the weekends). If you do anticipate differences in operations during the week compared to the weekend, you must provide an analysis that demonstrates how

you will incorporate those changes into the impingement estimate. This information, as well as the implementation plan, should be provided to us prior to our meeting. On a related note, for the overall monitoring plan, notes on operating conditions of the plant should be kept alongside notes on fish monitoring as well as notes on operating conditions of the plant on days that monitoring did not occur

Implementation Schedule
The information you have provided on the length of time it will take you to put the various monitoring components in place is inadequate. The terms and conditions of the Opinion require:

> The implementation schedule must identify the timeline for implementing each of the following components of the monitoring plan. For all components, Entergy must identify any approvals that are required by law from NRC or the State of New York as well as the specific statutory requirement and the anticipated timeframe associated with obtaining those approvals. In those instances, Entergy must identify the steps they will take to obtain those approvals and the anticipated timeline for implementing that component of the monitoring plan. The implementation schedule for each component must also identify any physical plant alterations that are necessary to allow each component to be implemented, steps that must be taken to make these alterations and the timeline for making these alterations. In instances where a portion of the monitoring component could be implemented without additional approvals and/or physical plant alterations, implementation must occur within 120 days of NMFS approval of the monitoring plan.

We expect you to provide this additional detail in any future submittal to us. As stated previously, the monitoring plan needs to be fully in place by this fall. We expect you to include a schedule that meets that objective.

Field Verification of Intake Velocities
You have mentioned several times that you anticipate "serious challenges" to actually measuring intake velocities at the traveling screens. Based on our knowledge and experience with this issue, we do not understand what difficulties you anticipate. While we recognize that CFD modeling is a sophisticated technology that can provide valuable information and that Alden is a leader in carrying out CFD models, we fail to see how a CFD model would achieve the requirement to carry out field verification of the intake velocities. Essentially you are proposing another model of an already modeled scenario. The CFD modeling would still require the field verification we are seeking. We expect you to develop a plan that involves actual in-field measurements of the intake velocities so that the assumptions made in the Opinion (i.e., intake velocities are below 1.5 feet per second in all operating and environmental conditions) can be verified.

Duration of Required Monitoring
Please note that when we approve the final monitoring plan, you will be required to carry out the plan as approved until we determine that modifications are appropriate. Because there has been no monitoring at the traveling screens in over 20 years and there has never been any monitoring at the trash racks, you must establish a baseline data set before we can even consider reducing the sampling/monitoring frequency.

While scaling back monitoring after an initial intensive monitoring period may be appropriate in the future, any MP must clearly document the decision points and process, including approval from NMFS, for determining whether changes in the MP are appropriate. Any proposed reduction in monitoring frequency for the future can only occur if sufficient data has been collected that allows a reduced frequency design to be implemented that still allows for documenting the total number of shortnose and Atlantic sturgeon collected annually and the condition of these fish. It is our understanding that you are proposing a shorter-term (i.e., 1 to 2 year) monitoring protocol to establish a baseline from which reductions in the frequency and/or intensity of monitoring could be scaled back from in the future. The MP must also include protocols for this long-term monitoring or, at least protocols for how long-term monitoring plans will be developed. As noted above, to remain in compliance with the RPMs and Terms and Conditions, you must continue to implement any MP approved by NMFS until we approve a revised plan.

Conclusions

My staff is available to discuss these comments. Please contact Julie Crocker (Julie.Crocker@noaa.gov or 978-282-8480) to schedule a conference call. We will provide a copy of this letter to the NRC and to the New York Department of Environmental Conservation to keep them informed of the status of our review of the monitoring plan. Please note that while we continue to coordinate with NYDEC staff regarding the implementation of a monitoring plan at Indian Point, these comments are solely NMFS and are not reflective of any NYDEC position on this matter. Please provide a revised monitoring plan and, if you would like to meet with us, a proposed agenda and dates you are available to meet, within 30 days of your receipt of this letter. If you prefer to meet prior to submitting the revised monitoring plan, you should provide a proposed agenda and your availability within 10 days of receipt of this letter. We look forward to continuing to work with Entergy and your consultants to develop a monitoring plan that meets the requirements of the ITS provided with our January 30, 2013 Biological Opinion.

Sincerely,

for John K. Bullard
Regional Administrator

EC: Colligan, Crocker, Dow -F/NER3
Williams – GCNE
Nieder – NYDEC
Grange, Logan, Moser – NRC

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