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

MAY - 2 2016

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

Re: Indian Point Monitoring Plan

Dear Ms. Gray,

We have been working with you since December 2013 to develop a monitoring plan as required by the Reasonable and Prudent Measures (RPMs) and Terms and Conditions of the January 30, 2013, Biological Opinion issued by us to the Nuclear Regulatory Commission (NRC) regarding the continued operations of Indian Point Units 2 and 3, pursuant to existing licenses and proposed extended operating licenses. As indicated in an April 2015 letter, we agree in principal to the proposed monitoring plan. We drafted and signed a letter in January 2016 that identified specific revisions to the last proposed plan to be made prior to approval. It is our understanding that you and other intended recipients did not receive that letter. The purpose of this correspondence is to update and resend those substantive comments. We are prepared to approve the monitoring plan with the revisions noted in this letter.

Once you submit a revised plan that contains these modifications, we expect to approve it within 30 days. During that time, we will also issue an amendment to the January 30, 2013 Opinion to modify the requirement for monitoring the IP1 forebay and trash racks given the deteriorated condition of the trash racks and modifications to the genetic sampling requirement (see below). We will also need to receive an updated schedule for implementation of the monitoring plan before we issue our approval.

Trash Rack Monitoring

You will conduct a feasibility study and then a pilot study using remote imaging (sonar) to monitor for impinged sturgeon at the IP2 and IP3 trash racks. Acceptable results mean that the sonar set up is capable of monitoring the trash racks in compliance with the ITS. You requested guidance on the species and size of fish to use for the quarter 4 feasibility study (i.e., securing fish to the rack to test the sonar). As explained in our 2013 Biological Opinion, the only sturgeon anticipated to be impinged on the trash racks would be sufficiently large that they could not pass between the bars spaced 3" apart. As noted in the Opinion, we expect sturgeon with body lengths larger than 600 mm to be too large to pass through the racks. Testing should be done with a range of fish sizes with the goal of determining the smallest target that is detectable with the imaging system. While we expect 600 mm to be the smallest sturgeon that would be impinged and assume that detection ability will increase with the size of the target, the study should use

target size with 600 mm as a midpoint, rather than a minimum. A range of targets of 300 mm to 900 mm should be sufficient to determine if the imaging system will be capable of detecting impinged sturgeon. Because shortnose and Atlantic sturgeon are not available for this testing, and there are no other sturgeon species native to the Hudson River, it would be appropriate to use a variety of native fish in the targeted size classes for the imaging test. Using a variety of species would allow for an assessment of any differences in detectability due to morphology of different species, which would provide valuable information for determining the effectiveness of detecting sturgeon in the absence of actually using sturgeon for the study.

Your plan for the feasibility study indicates you will provide us a report at the end of the study; while we agree a formal written report is only necessary at the end of the pilot study, the plan must be modified to provide us with a written update (via email) within 30 days of the conclusion of each of the four study quarters. This report must summarize the activities carried out during the preceding quarter as well as any findings related to the success, failure, or limitations of the equipment tested. In the event that sonar technology does not allow for monitoring that complies with the requirements of the terms and conditions of the Incidental Take Statement, you will need to develop an alternate proposal for our approval. At the end of the feasibility study, you will need to submit a plan for the pilot study. Following the pilot study, you will need to submit a plan for monitoring of the trash racks through the duration of the operating licenses. The monitoring plan needs to be revised to incorporate submittal of these reports to us.

Forebay Studies

You will use sonar technologies to monitor the forebays. In the event that sonar technology does not allow for monitoring that complies with the requirements of the terms and conditions of the Incidental Take Statement, you will need to develop an alternate proposal for our approval. The monitoring plan needs to be revised to include procedures and a schedule for developing an alternate proposal if the sonar technology does not meet the requirements of the ITS.

Ristroph Traveling Screens

You will install sampling nets to filter the screen wash contents from all operating traveling screens at IP1, IP2 and IP3 with the fish sluice and debris sluice at each unit being sampled. Sampling will occur for three 24-hour sampling days per week. Field crews of three will continuously monitor the collection nets during the 24-hour sampling day. Sturgeon will be removed from the nets as quickly as possible from the net. Live sturgeon will be placed in a 150-gallon holding tank for processing with flow-through river water and after processing, released into the river. Dead sturgeon will be processed and retained for necropsy. We request that a second 150-gallon tank be available for holding of any sturgeon that are injured or are otherwise in poor condition so that these fish can be observed for the remainder of the 24-hour sampling period. At the end of the 24-hour period, live fish should be returned to the river, while any fish that died should be retained for necropsy. The monitoring plan must be revised to include this procedure for holding sturgeon that are injured or otherwise in poor condition and include a protocol for determining which sturgeon need to be retained.

We understand you are proposing to carry out the sluice net sampling for one year and then hope to use the results to carry out sampling on a reduced schedule. As noted in previous correspondence, any changes to the monitoring protocol must be approved by us in advance.

As noted in previous correspondence, we remain concerned about the potential for crowding in the sluice nets to result in stress, injury or mortality (due to crowding and predation) to non-sturgeon species. Because sturgeon will be removed from the nets as quickly as possible, we expect the sluice net sampling methodology to result in little opportunity for stress, injury or mortality of sturgeon. You are not proposing to collect or record any information on non-sturgeon species. The draft plan indicates that the nets will be cleared frequently, but there is no time period set. We are concerned about the impacts of the proposed sampling methodology on non-sturgeon species and note that many of the species that are expected to be collected (e.g., blueback herring and alewife) are NOAA trust resources that we are committed to protecting. We do not want to approve a monitoring plan for one trust resource (sturgeon) that ends up harming other trust resources, and we hope that you will work with us to ensure that does not happen.

By not recording information on other species, there is no way to determine if the sampling methodology is having a negative impact on other species. While we find the sluice net methodology in compliance with the requirements of the ITS, if it causes negative impacts on other species, we would request the methodology be terminated and an alternate sampling methodology be developed to ensure the protection of other NOAA trust resources. We believe the methodology proposed by you in an earlier version of the monitoring plan, involving diversion of sluice flow to large holding tanks, would minimize impacts to non-sturgeon species (however, with inspection and removal of fish once an hour, not once every 24 hours). We believe that methodology would be better suited for longterm monitoring (i.e., duration of more than one year). It is our understanding that this tank-based methodology was successfully used at Entergy's Fitzpatrick nuclear facility and that the equipment used there is no longer being used and may be available. We urge you to consider the tank-based methodology (proposed in the first draft of the monitoring plan) as a method of minimizing the potential impacts of the sturgeon monitoring program on non-sturgeon species, provided the removal rate is acceptable to avoid harm.

We have repeatedly encouraged you to consider recording at least basic data on the other species that are being collected including the number and condition of these fish. While we believe that the best solution would be for you to record species and condition of all fish captured during all days and hours of impingement sampling, we recognize the additional costs and resources, including deployment of additional biologists, which this may entail. As such, for the purposes of determining the effect of the sluice net monitoring protocol on non-sturgeon species, we would be satisfied with you recording information on non-sturgeon species for a subset of the total sampling time (e.g., one 24-hour period per week or 8-hours per sampling day, distributed between daylight and nighttime sampling). In addition to ensuring that the proposed monitoring protocol is not resulting in negative impacts to non-sturgeon species, information on the number and condition of other species collected during impingement sampling may be useful in understanding more about the impingement of shortnose and Atlantic sturgeon (e.g., size of fish vulnerable to impingement, condition of fish, peak seasons or flow conditions that may require

more or less intense monitoring, etc.). Please do not consider this our position on whether such a sampling plan would be sufficient for obtaining information for other purposes. We would like to set up a conference call to discuss our concerns about the impacts of the proposed monitoring protocol on non-sturgeon species. We would expect to discuss these concerns, potential measures to minimize impacts on other species, and the value of obtaining information on other species collected at Indian Point.

Sturgeon Handling (alive and dead)
Your proposal for handling and tagging live sturgeon is acceptable. Please note the changes to the genetic sampling requirement noted below. Your proposal for handling dead sturgeon is acceptable. We expect that any necropsies will need to be carried out at soon as possible, and it may be preferable to keep the fish in cold storage, but not frozen. You must secure a laboratory that is qualified to carry out necropsy and obtain information from them on proper handling and storage of dead fish.

Genetic Samples
The sturgeon genetic archive was recently moved from the NOAA lab in Charleston to Dr. Tim King's lab with the U.S. Geological Survey. Transfer of samples must occur once ten samples are accumulated or every six months, whichever occurs first. The plan must be revised to require this change to the frequency of transfer of samples.

Ancillary Data (temperature, water velocity, plant operating data)
Your proposal for capturing and reporting temperature, water velocity and plant operating data is acceptable. We look forward to reviewing the results of the Computational Fluid Dynamics results.

Reporting
The 24-hour take reports should be provided via email to incidental.take@noaa.gov. Any necropsy reports should be provided to us within 15 days of being sent to you and not wait until the annual report. A sturgeon salvage form does not need to be completed when samples, parts or whole fish are being handled or tested as required by the ITS. The salvage form is required if parts or whole fish are being handled, tested or sampled in a manner outside the scope of the ITS (e.g., some researchers are interested in obtaining spines for aging studies); however, parts or fish can not be transferred or disposed of without coordinating with us in advance. The monitoring plan must be modified to reflect this.

Other Comments
On page 16 of the plan, you state "genetic sampling, in connection with tagging, effects on sturgeon may confound subsequent movement and survival, and must be accounted for in subsequent assessment." We are not aware of any information to indicate that removal of a $1 cm^2$ section of pelvic fin for genetic sample or the insertion of PIT tags has any negative impact on movement or survival of sturgeon. If you have information to the contrary, please provide it to us.

As noted above, we are working on revised Reasonable and Prudent Measures and Terms and Conditions which reflect the July 2015 draft monitoring plan, the modifications outlined in this

letter and changes to the genetic sampling requirements. We plan to issue the amendment to the January 2013 Opinion within 45 days of receiving your updated implementation schedule. As noted above, we would like to schedule a call to discuss collecting information on non-sturgeon species. This call should be held before you submit any revisions to the monitoring plan or the implementation schedule. Should you have any questions regarding this letter, please contact Julie Crocker of my staff (978-282-8480 or Julie.Crocker@noaa.gov).

Sincerely,

Julia E. Crocker
for

Kimberly B. Damon-Randall
Assistant Regional Administrator
for Protected Resources

EC: Crocker, Dow -F/GAR3
Williams – GCNE
Nieder – NYDEC
Grange, Logan, Moser – NRC

PCTS: NER-2012-619