

Natural Resources Defense Council, Inc.

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NEW YORK, N.Y. 10036

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November 19, 1971

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Leonard M. Trosten, Esq.
LeBoeuf, Lamb, Leiby & MacRae
1821 Jefferson Place, N.W.
Washington, D.C. 20036

In Re: Consolidated Edison Company of New
York (Indian Point Unit No. 2)
Docket No. 50-247

Dear Mr. Trosten:

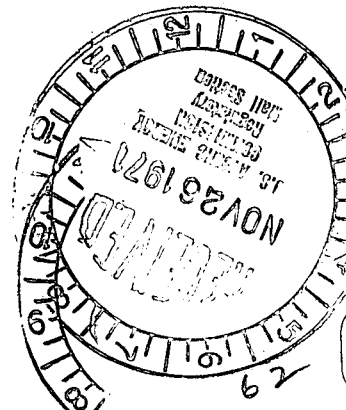
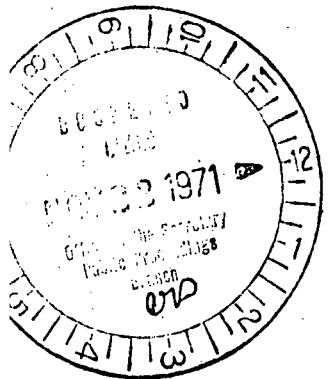
I am writing in reference to my letter to you of October 26, 1971, in which I requested from Con Edison various calculations on the probable movement of pelagic and planktonic organisms through Indian Point Unit No. 2 and other electric power generating plants on the Hudson River.

As I said in that letter, I was attempting to cut through what could well have been an interminable process of question and answer in order to present to you one of the major problems at Indian Point as the Intervenor saw it. I made this request in the spirit of our agreement to a full exchange of information before the hearing. In a conversation on November 5, 1971, you informed me that Con Edison would not comply with my request because of various legal objections, among them the contention that the information asked for was not within the control of Con Edison and was thus beyond the bounds of discovery.

Since that time I have had conversations with Edward J. Sack and Harry G. Woodbury of Con Edison. Both conversations were initiated by the Con Edison employers and in both the information was volunteered to me that Con Edison through its employees or consultants, is undertaking at least some and perhaps all of the calculations and estimates I requested in my letter of October 26th.

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PDR

hearing



I hereby request to be informed of the scope and expected date of completion of all studies presently in progress or firmly planned by Con Edison which touch on or involve calculations or estimates of the number of Hudson River pelagic and planktonic organisms which will pass through the cooling system of Indian Point Unit No. 2 or any other plant on the Hudson in which Con Edison has an interest in ownership or construction or has the right or option to buy or sell the electricity generated. I request to be informed not only of studies or calculations involving striped bass, but also any other species of fish or aquatic life.

If any of the studies or calculations referred to in the above paragraph are completed while the evidentiary record in this proceeding is open, I request that they be forwarded to me immediately upon completion. If any interim or progress reports are received by Con Edison on any of the studies or calculations referred to in the above paragraph while the evidentiary record in this proceeding is open, I request that they be forwarded to me immediately upon receipt.

I frankly feel that a great deal of misunderstanding and confusion would have been avoided if, in our first conversation about the letter of October 26th, you had told me that studies and calculations of this sort were in fact in progress at the request of Con Edison. Only through a full exchange of information of that kind can these hearings be expedited with a full and fair consideration of the issues.

I am enclosing copies of my letter of October 26th for the members of the Board and those parties who did not receive one at that time.

Anthony Z. Roisman on behalf of EDF, joins me in these requests.

Yours sincerely,

Angus Macbeth

AM/js

Enclosures

cc:

Mr. Stanley T. Robinson, Jr.
Samuel W. Jensch, Esq.
J. Bruce MacDonald, Esq.
Myron Karman, Esq.
Anthony Z. Roisman, Esq.
Mr. R.B. Briggs
Dr. John C. Ceyer
Honorable William J. Burke

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October 26, 1971

Leonard M. Trosten, Esq.
LeBeauf, Lamb, Leiby & MacRae
1821 Jefferson Place, N.W.
Washington, D.C. 20056

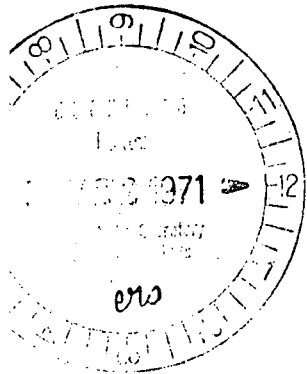
In re: Consolidated Edison Company of New
York (Indian Point Unit No. 2)
Docket No. 50-247

John H. Adams, Esq.
Executive Director

Dear Mr. Trosten:

During the period since October 13th when Con Edison made available many of the documents which the Intervenor requested, we identified one major problem on which there is virtually no data of a truly informative nature. This is the question of the effect Indian Point Unit No. 2 will have on the planktonic and pelagic organisms of non-screenable size which will pass through the cooling system of the plant. It is evident from Indian Point Ecological Survey, Final Report (IP-73) that such entrainment will take place. This is both a complicated and a major problem--there are many variables involved and it is fundamental to the Hudson River fishery. The full exchange of information which the expedited hearing schedule contemplated demands that we simplify the process of question and answer and try to cut through to the substantive issues at stake. Therefore I am setting out the problem as we presently see it and I am asking you to have Con Edison formulate the assumptions and produce the calculations that we request so that we can get an outline of the extent of this problem and the effect Indian Point Unit No. 2 will have on the river's fishery.

In order to reach an opinion about the possible effects of the entrainment of planktonic and pelagic organisms at Indian Point Unit No. 2 on the ecology of the Hudson estuary, one must be able to estimate the proportion of the total organisms in the estuary which are affected. Insofar as fish are concerned, the young



of most species are planktonic during the early weeks of their lives and subject to being entrained with any water withdrawn from the estuary. In their planktonic mode they are so small as to be non-screenable and no plan has yet been made for their protection from possible damage by transit through any Hudson River generating plant.

One must estimate the total proportion of estuarine fish in the planktonic mode that are subject to entrainment. The calculation of estimates will be complex because of the large array of variables involved. To simplify the matter to a practicable level we have selected a single species for consideration --- the striped bass (which may be the most important species that the estuary produces). Fortunately, the striped bass spawns within a narrow time frame and the young are pelagic and non-screenable for a rather brief period. In fact, the whole calculation can be encapsulated in a three-month interval. If Con Edison has reason to believe that damage to another species would be more harmful to the fishery, we request to be informed of the basis for their opinion.

It is basic to the matter that calculations be made to include the combined effect of all known withdrawals in the affected portion of the estuary, since Indian Point Unit No. 2 will be an increment to total damage. Thus, in our initial calculations we should treat Indian Point Unit No. 2 as an addition to Indian Point No. 1, Lovett, Danskammer and Bowline since they are all expected to be in operation simultaneously by mid-year 1972 and planktonic-stage striped bass are found in the vicinity of each of them. The addition of Indian Point Unit No. 3 should be considered next since it is under construction, will become part of the whole complex, and consideration of its operation is essential to an evaluation of the proposed common intake and discharge structure. Finally, it would be advantageous to Con Edison to make calculations for Roseton, Verplanck Units No. 1 and 2, and for Storm King so that we can objectively view the whole ecological future of the River.

There are at least five other variables besides the total number of plants which will influence the number of organisms which are entrained. We have set them out below with a brief discussion of each, including reference to Con Edison materials where approximate. With respect to each variable where precise knowledge is not available from adequate scientific data, we request Con Edison to make conservative assumptions so that we can accurately determine the possible impact of the worst case which may arise. A margin for safety analogous to the design safety margin in radiological safety should be considered in

reaching the conservative assumptions. These assumptions should be used as the basis of the calculations requested.

Assumptions:

1. Period during which striped bass larvae remain passive and planktonic. The Carlson-McCann study contains figures of spawning periods and periods at which fish reach one inch length which are suggestive but not dispositive on this point. IP - 54 figs 7, 8, 10. (references are to the numbering system for documents produced by Con Edison)

Information as to when juvenile fish take up a demersal life and relate themselves to the bottom more than to the water column would be useful on this issue.

2. Distribution of planktonic fish vertically through the river. Stripped base larvae apparently rise at night toward the surface and return in the daytime toward the bottom, causing hourly changes, but no systematic study of the vertical distribution has been made. IP - 54; IP - 73. It would be particularly helpful to refine the data relating to this issue so that the relation between the vertical distribution and the intake "plume" could be determined.

3. Distribution of planktonic fish horizontally through the river. Some data for the Indian Point transect are available giving figures for surface, and mid-depths and bottom. IP - 73 Table 9-11. But again no systematic work has been done. It is not known what thickness of layer the bottom and surface tows represent or what part of the water column is represented by the mid-depth samples. It is not evident what proportion of cooling water will be drawn from the bottom, mid-depth, and surface areas. It is not clear what differences may result for Indian Point Units No. 1, 2 and 3 and Lovett from the removal of the mothball fleet.

4. Downriver movement of striped bass in the planktonic mode. This point is not directly dealt with. Studies indicate that striped bass spawn 74% in the 80 river miles from the Peekskill sector north to Coxsack. IP-54, table 11. But the young are concentrated from Peekskill south, usually on broad shoal areas. IP-54; App P, tables 7-15,16. If eggs are concentrated above Indian Point and early young are concentrated below, there must be passage of young downriver past Indian Point and other power plant locations.

5. Rate of downriver movement of striped bass in the planktonic mode. This issue is not directly discussed.

The movement of any inanimate buoyant particle downriver depends upon a complex variety of conditions relating to its vertical and lateral position in the cross-section because of unriver flow on the bottom. "Salt wedge," uneven flow rates from surface to bottom and bank-to-bank, vertical transit of bottom water to the surface, eddy formations, frictional resistance at the bottom, and so forth. Added to this is the fact that striped bass larvae are reactive to all sorts of influences, larvae migrate to the surface at night and toward the bottom during the day, crossing all the various flow strata. The data suggest some conjectures on rate of movement. IP-54, tables 21, 23.

As to each of these variables, Con Edison should make conservative assumptions, describing the process by which the assumption is arrived at. If there is any difficulty in understanding what is meant by each variable, I should be called at once so that the question can be ironed out.

Calculations:

On the basis of those assumptions, the following calculations should be performed:

Calculate the proportion of the striped bass in the planktonic mode which would be taken into the intake of an electric power generator on the Hudson River in the vicinity of Indian Point considering all relevant factors as they could occur from May 15 to July 30. Make separate calculations to include full operation under May 15 to July 30 flow conditions, of the following:

1. Indian Point Unit No. 1, Lovett, Danskammer and Bowline.
2. Everything included in 1 above plus Indian Point Unit No. 2.
3. Everything included in 2 above plus Indian Point Unit No. 3.
4. Everything included in 2 above plus the Storm King pumped storage project.
5. Everything included in 3 above plus the Storm King pumped storage project.
6. Everything included in 5 above plus Verplanck Units No. 1 and 2, and Roseton.
7. Take each of the following plants separately: Indian Point Unit No. 1, Indian Point Unit No. 2, Indian Point Unit No. 3, Storm King, Verplanck Unit No. 1, Verplanck Unit No. 2, Lovett, Danskammer, Bowline, and Roseton.

It is crucial that the discussion of the conservative assumptions and the calculations based on those assumptions, be provided rapidly, within the next two weeks.

Anthony Z. Roisman, on behalf of EDF, joins me in this request.

Yours sincerely,

Angus Macbeth

AM/jis

cc: Anthony Z. Roisman, Esq.