

6/13/73

BEFORE THE UNITED STATES
ATOMIC ENERGY COMMISSION

In the Matter of)

Consolidated Edison Company)
of New York, Inc.)
(Indian Point Station, Unit No. 2.)

Docket No. 50-247

MEMORANDUM OF HUDSON RIVER
FISHERMEN'S ASSOCIATION IN
SUPPORT OF PROPOSED FINDINGS
OF FACT AND CONCLUSION

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Con Edison's application for an operating license for Indian Point 2 comes to this Atomic Safety and Licensing Board in the context of a considerable history involving the fisheries of the Hudson River, particularly the striped bass, and the development of power plants which are designed to use Hudson River water in the reach of the River between Coxsackie and the Tappan Zee and more particularly between Newburgh Bay and Haverstraw Bay.

In 1965 the Second Circuit Court of Appeals reviewed the license which the Federal Power Commission had granted Con Edison to build a pumped storage project at Cornwall, Scenic Hudson Preservation Conference v. F.P.C., 354 F.2d 608 (2d Cir. 1965), cert. denied, 384 U.S. 941 (1966).

In the course of an opinion which remanded that license application to the F.P.C. for further consideration the Court drew attention to the important questions on the Hudson fishery, particularly the evidence which various groups concerned with fishing wished to present:

that the major spawning grounds for the distinct race of Hudson River striped bass was in the immediate vicinity of Storm King project and not "much farther upstream" as inferred by Dr. Perlmutter, the one expert witness called by Consolidated Edison; to attempt to prove that, contrary to the impression given by Dr. Perlmutter, bass eggs and larvae float in the water, at the mercy of currents; that due to the location of the spawning ground and the Hudson's tidal flow, the eggs and larvae would be

directly subject to the influence of the plant and would be threatened with destruction; that "no screening device presently feasible would adequately protect these early stages of fish life" and that their loss would ultimately destroy the economically valuable fisheries. 1 ER at 1095.

The Court's concern was also stirred by statements made by representatives of the Department of Interior in Congressional hearings:

Practical screening methods are known which could prevent young-of-the-year striped bass and shad from being caught up in the [Storm King] project's pumps, but practical means of protection of eggs and larvae stages have yet to be devised. Furthermore the location of the proposed plant appears from available evidence to be at or very near the crucial spot as to potential for harm to the overall production of eggs and larvae of the Hudson River striped bass. The cumulative effect of unmitigated loss of eggs and larvae of striped bass by this power project could have a serious effect on the Hudson River striped bass fishery and the dependent fisheries around Long Island and offshore. 1 ER at 1096.

For this reason, the Court instructed the F.P.C. to "take the whole fisheries question into consideration before deciding whether the Storm King project is to be licensed". 1 ER at 1096.

Out of these instructions came the Hudson River Fisheries Investigation, 1965-1968, commonly known as the

Carlson-McCann Report, which focussed on the issue of the number of striped bass eggs and larvae which would be entrained at the Storm King project. In order to perform that analysis, the investigators collected and reported data on the relative abundance of striped bass eggs, larvae and juveniles on the Hudson River between Coxsackie and Haverstraw Bay. Carlson-McCann provided the central source of data on the striped bass in the Hudson which has been relied upon by all the parties to this proceeding in drawing up their estimates of what the effect of the operation of Indian Point 2's cooling system will be on the Hudson fishery. Con Edison financed the preparation of the Carlson-McCann Report and has been aware of the importance of the issue to which the Report was addressed since 1965: what is the effect on the eggs, larvae and young juvenile striped bass of the withdrawal of substantial amounts of Hudson River water for use in electrical generating plants?

The problems posed for the fishery by the operation of power plants on the Hudson has also been an issue of long standing at Indian Point 1. The killing of fish at the screens of the plant has been erratic, and it is unclear whether the decline in numbers killed at Indian Point 1

in recent years is the result of improvements in design or simply indicates a reduced fish population in the river which may well have been caused by the operation of the plants on the river. In either case Con Edison has repeatedly emphasized that it is hard at work doing research on the impingement problem and that the solution to impingement is just around the corner. The solution never quite arrives. In the Environmental Report Supplement, it was stated that:

As a long term solution in the area of fish protection for Unit No. 1 as well as for the other units at Indian Point, Con Edison engineers are developing a new intake water concept. ERS, Appendix S at 32.

This was the common intake and lagoon notion, and it was promised for the immediate future:

Engineering design and associated research and development have already begun on this project and it is hoped that the work will be completed and in operation by the spring of 1973. ERS, Appendix S at 34.

Somewhere along the line that plan was dropped, and the company is back to trying air bubble curtains, a scheme that it first tried ten years ago and judged unsatisfactory. ERS at 2.5-9.

At the end of all of this, Con Edison itself is predicting that nearly a million fish will be killed annually in the screens at Indian Point 2 and the estimates of the Staff and HRFA are much higher.

The work on impingement has been part of a constant show of activity from Con Edison over the last ten years with a maze of research projects on fish and power plants. The work varies in quality but very little of it gives any clear indication that the operation of the once-through cooling systems at Indian Point will not have a significant impact on the Hudson fishery.

During this same period in which the problems of fish entrainment and fish impingement at Hudson River power plants were becoming manifest, there has been a dramatic increase in the generating capacity installed along the Hudson between Haverstraw Bay and Newburgh Bay. In 1970 three units were operating in this reach of the River with a total capacity of 1276 MW - 508 MW at the Danskammer plant at River Mile 66, 265 MW net at Indian Point 1 at River Mile 43 and 503 MW at Lovett at River Mile 42. In 1972, the first 600 MW unit at Bowline Point, River Mile 38, went into operation and the second 600 MW unit is scheduled

to go into operation before the summer of 1974. In the course of 1973, two units with a total capacity of 1200 MW are planned to go on line at Roseton, River Mile 65, and Indian Point 2 would add an additional 873 MW at River Mile 43. Thus, by the end of 1974, without considering the additional capacity of 965 MW at Indian Point 3 which Con Edison hopes to have in operation in 1974 and which is the subject of another AEC licensing proceeding, the capacity of plants designed to have once-through cooling on the reach of the River between Newburgh Bay and Haverstraw Bay will have increased by 3273 MW to 4549 MW. In these circumstances, Indian Point 2 must be reviewed in the context of the immediate increase of vast quantities of electrical generating capacity with its consequent demand for Hudson River cooling water. All of these plants are located in areas important to either the spawning or nursery habitat of the striped bass.

It was against this history that the draft environmental statement was published last April with the prediction that "up to 25% of the eggs and larvae of certain species of fish that annually pass by the Plant may be killed," DES ✓ at ii. This prognosis was, of course, for considerably

less damage than was predicted in the Final Statement. Nevertheless, the draft brought a strong response from the Federal agencies with special expertise in fisheries and water quality matters. The Department of the Interior recommended that the operating license for Indian Point 2 contain the following conditions, among others:

The applicant shall construct and place in operation at the earliest possible time, and in no case later than July 1, 1975, the closed-cycle cooling system. . . . During the interim period, any operation of Indian Point No. 1 and No. 2 with a once-through cooling system should be held to the minimum by drawing on other sources of power available to the applicant's system, and by publicly discouraging all unnecessary uses of electric energy within its service area, consistent with existing authorities. 2 FES at 48.

The Environmental Protection Agency made a similar recommendation:

The major potential environmental impact of operating the Indian Point-2 Nuclear Plant involves the effects of the once-through cooling system on aquatic biota. We agree with the Atomic Energy Commission that the potential for severe environmental effects exists for this facility and, therefore, are recommending implementation of a closed-cycle cooling system at the earliest date practicable. 2 FES at 15.

It is against this background that the contentions of the parties must be viewed. HRFA and the Staff have reviewed the research done on the River and the data which that research provided and concluded that enough information is presently in hand on the life history, population dynamics, and coastal populations of the striped bass to predict that it is likely that 30-50% of the annual production of striped bass in the Hudson will be destroyed by the cooling systems of Indian Point 1 and 2, and the figure is likely to be over 50% when the other plants - excluding Indian Point 3 - which will be in operation in 1974 are considered.

Con Edison's position is essentially two-fold: first, innocent ignorance about the fish in the Hudson and the new fangled problem of entrainment; and, second, a prediction that the striped bass population would suffer negligible damage from plant operation. The first proposition results in the program of research - a classical before/after study - and the second assures that the plant should operate full blast while the research was done.

A little less has been heard about how entrainment was discovered in 1970, since the company rediscovered

what the Carlson-McCann Report was all about. Instead the emphasis is now on the need to discover the compensatory mechanism in the Hudson striped bass population. This is, of course, a quantum jump beyond Carlson-McCann or any of the other research the company has undertaken in the last ten years.

There is fine surface plausibility to this investigation in the classic before/after mode. But one has to remember that Con Edison has not a shred of evidence supporting the existence of compensatory processes in the Hudson-spawned striped bass, while the Staff and HRFA have presented considerable evidence that no such mechanism exists. Moreover in the analysis of what has happened to the fishery in the course of the last ten years, we have had a preview of what the next quantum jump in research aims is likely to be: an investigation into those "natural" fluctuations which have reduced the mid-Atlantic catch so drastically in the last few years. Thus the road of research is a long and virtually unending one in the hunt for the answer that is proven with mathematical precision and finality. One must recognize that there is more than a grain of truth in Dr. McFadden's statement that "the standard management situation is one of managing in the face

of a large component of uncertainty." Tr. 11, 368.

The second proposition that no harm will be done by plant operation while the research goes forward turns out to rest on one's hydraulic and biological assumptions. Accepting only the essentials of the biological position put forward by the Staff and HRFA, Con Edison's prediction of damage is significant: 15.4% of the first year class in the first year of operation and rising to 38.7% of the first year class after 10 years. Lawler on Sensitivity, February 5, 1973 at Table 1.

There are two connected points to be recognized here. First, these figures do not take account of the average 5% annually increase of the Hudson striped bass fishery which has been achieved over the past 40 years. The potential for such further growth is simply foregone. Second, the absence of a compensatory mechanism in the first year of life which has allowed the growth of the last 40 years also means that when the plant takes significant percentages of the annual production which are considerably less than 40% the fishery is set for a long and serious decline. Thus the 15% reduction - well below the 25% reduction that Con Edison claims it will be able to detect (Tr. 11, 337) - will, over

the life of the plant, have a devastating effect on the population, one which it would take decades to recover from after the plant ceased operation in 2013. This is a very sobering situation and indicates the fundamental limits and inadequacies of the proposed research program.

It also raises the issue of Con Edison's proposed test of the research program whereby it would propose a closed-cycle cooling system if the study showed a 40% annual reduction of Hudson River recruits to the striped bass fishery and a 32% reduction in the mid-Atlantic. Response to Chairman Jensch, May 24, 1973 at 1-2. It is difficult to draw a line by which one can say that damage to the fishery beyond this point must require cooling towers and, not surprisingly, Con Edison has avoided this problem by ingenuously choosing the figures predicted by the Staff and HRFA. HRFA would draw the line at a lower number. Nevertheless it is important to recognize that Con Edison agrees with the Staff and HRFA that damage beyond this point is impermissible. After Con Edison's repeated emphasis on its interpretation of "irreversible" damage, it must be the ultimate effect on the fishery which concerns the company here.

This position must be viewed in light of Con Edison's own analysis. The company has shown if it is right on hydraulics but wrong on biology it will simply achieve

the same result as that predicted by the Staff and HRFA over a longer period of time. It must follow that if the process of decimating the fishery takes twice the time which the Staff and HRFA believes likely the end result still requires the installation of a closed-cycle cooling system. Con Edison does not contend that the research program can detect these changes. Simply put, the research program is inadequate to give the answers needed to settle this controversy without uncertainty in 1977.

There is no escape from the necessity of making a decision now. It remains the position of HRFA that there is an adequate record before the Board on which to find that the prediction of a 30-50% reduction is supported by the preponderance of the evidence and that, as Con Edison concedes, such figures require the installation of a closed-cycle cooling system. Apart from being unnecessary, the research program is incapable of giving the definitive answers which Con Edison hopes for from it in 1977.

If the basic position of HRFA and the Staff prevails, then every measure should be taken to expedite the building of the closed-cycle system. Nothing is to be gained in saving money or in protecting the fishery by delaying action. This requires diligent effort by Con Edison and

by the other parties to this proceeding and for that reason HRFA propose a tight construction schedule and a report on the governmental hurdles to be cleared in building the cooling system so that all parties can address themselves to the rapid completion of the new cooling system. Also, with the basic decision made, there is no reason to operate the plant in the period of entrainment except the need for power in New York City and Westchester County. For that reason, HRFA has proposed a schedule of restricted operation which provides for that need and for the reasonable operation of the plant and beyond that minimizes the unnecessary destruction of the fishery.

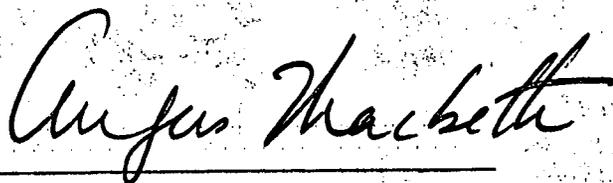
Con Edison's long years of investigation on the Hudson have borne fruit. In conjunction with the other studies of the river, they show the need for a closed-cycle cooling system now to preserve the fisheries of the Hudson - not only the striped bass but perhaps also the species about which not as much is known but which are vulnerable to Indian Point. Much of the fate of the Hudson and its fisheries is dependent on this proceeding. Its outcome is to be governed by the Congressional mandate in the National Environmental Policy Act whose purpose was:

To declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man. . . . 42 U.S.C. 4321.

That policy and mandate can best be fulfilled by including in the grant of an operating license the conditions for the protection of the environment proposed by the Hudson River Fishermen's Association.

Anthony Z. Roisman authorizes me to state that he joins me in this brief on behalf of the Environmental Defense Fund.

Respectfully submitted,



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Dated: New York, New York
June 13, 1973