11-27-73

BEFORE THE UNITED STATES

ATOMIC ENERGY COMMISSION

In the Matter of	)	
	)	
CONSOLIDATED EDISON COMPANY	)	Docket No. 50-247
OF NEW YORK, INC.	)	
	)	
(Indian Point Station, Unit No. 2)		

BEFORE THE ATOMIC SAFETY
AND LICENSING APPEAL BOARD

BRIEF OF THE STATE OF NEW YORK IN RESPONSE TO APPLICANT'S EXCEPTIONS TO THE INITIAL DECISION AUTHORIZING FULL-TERM, FULL-POWER OPERATION

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POINT I

THE INITIAL DECISION OF THE ATOMIC SAFETY AND LICENSING BOARD COMPLIES WITH THE MANDATE OF NEPA REQUIRING THE AGENCY TO MINIMIZE ADVERSE ENVIRONMENTAL IMPACTS AS MUCH AS PRACTICABLE.

Applicant challenges the Board's finding (Initial Dec., 107) that NEPA "requires that a natural resource like the Hudson River fishery be protected from serious damage if economic means having less adverse environmental impact are available to provide such protection." Applicant's discussion of the requirements of NEPA (App. Br., 6-13) represents a narrow, regressive view of this environmental

protection statute, and is in conflict with the plain language of the legislation.

One of the purposes of this law is to "promote efforts which will prevent or eliminate damage to the environment..." 42 USC § 4321. (Emphasis supplied). Section 4331 declares it to be the responsibility of the Federal government to "(3) attain the widest range of beneficial uses of the environment without degradation..." (Emphasis supplied) Section 4332 requires that this policy be implemented by federal agencies "to the fullest extent possible".

The court decisions under NEPA also recognize the Commission's responsibility to minimize the adverse environmental impact of projects under its jurisdiction. Calvert Cliffs' Coordinating Comm. v. AEC, 449 F. 2d 1109, 2 ERC 1779 (D.C. Cir., 1971): "NEPA, first of all, makes environmental protection a part of the mandate of every federal agency and department." (449 F. 2d at 1112, 2 ERC at 1780). In Conservation Council of North Carolina v. Froehlke, 340 F. Supp. 222, 228 (D.C. No. Car., 1972), the court stated:

> "NEPA was ... intended to be a means of disclosing to Congress and other decision makers all environmental factors in order that decisions and appropriations could be made with

as little adverse effect on the environment as possible."

In Sierra Club v. Froehlke, 359 F. Supp. 1289, 5 ERC 1033 (S.D. Tex. 1973), the court held that it would be a violation of NEPA for an agency "merely to disclose the likely harm without reflecting a substantial effort to prevent or minimize environmental harm." (359 F. Supp. at 1340, 5 ERC at 1066).

Thus it is incumbent upon the Commission to minimize the environmental harm to the Hudson River estuary in this case where means are clearly available to do so.

The guidelines of both the Council on Environmental Quality and the Environmental Protection Agency also articulate this fundamental requirement of NEPA. CEQ Guidelines §6 (iv), 36 Fed. Reg. 7725 (1971), states: "A rigorous exploration and objective evaluation of alternative actions that might avoid some or all of the adverse environmental effects is essential." CEQ Guidelines § 2, 36 Fed. Reg. 7724 (1971), is even more forceful: "... Federal agencies will ... assess in detail the potential environmental impact in order that adverse effects are avoided, and environmental quality is restored or enhanced, to the fullest extent practicable." (Emphasis supplied).

EPA Guidelines also sets forth the responsibility of Federal agencies to minimize adverse environmental impact:

"The analysis of different courses of action shall include alternatives capable of substantially reducing or eliminating any adverse impacts, even at the expense of reduced project objectives". [§ 6.45(d)].

Such language indicates quite clearly the statutory responsibilities of the Commission in this proceeding, responsibilitites which were affirmed in the Initial Decision.

POINT II

THE INITIAL DECISION STRIKES A BALANCE BETWEEN APPLICANT'S CLAIMED NEED TO GENERATE MORE POWER AND THE NEED RECOGNIZED BY ALL PARTIES TO PRESERVE THE NATURAL ENVIRONMENT OF THE HUDSON RIVER, AND ARRIVES AT THE "OPTIMALLY BENEFICIAL ACTION" REQUIRED BY NEPA.

The ASLB did not "establish environmental protection as an exclusive goal", as Applicant suggests (App. Br., 8), but rather balanced the need for electric power with the need to perserve our environment, and devised a solution to satisfy both. The Board granted an operating license to Applicant despite serious risks to the environment. The Board further

permitted Applicant to operate its power plant with once-thru-cooling until May 1, 1978, despite the fact that some damage will be done to the Hudson River fishery during this time. The Board therefore decided that the need for power took precedence over the environment during the short-term, although it is true that the Board did not judge the environmental impact to be serious for that term (Init. Dec., 92, 100-1). Furthermore, the Board also refused to require shutdown of Unit 2 during high entrainment and impingement seasons [Init. Dec., 92]. Once again, the Board did engage in the systematic balancing analysis that Applicant was seeking (App. Br., 11) and ruled against HRFA's request for restricted operation. The Board found that "the incremental generating costs, environmental costs of increased stack emissions in New York City, increased capital equipment replacement costs, and reduction in system reliability cannot be balanced by the environmental benefits that would accrue to the Hudson River biota ..." (Init. Dec., 92).

Cognizant of economic and social considerations, as well as the importance of supplying the New York Metropolitan area with additional energy capacity, the ASLB adopted a decision which balanced the various considerations as NEPA intended.

This compromise is particularly significant when one considers that Indian Point Units 1, 2, and 3 will all be operating with once-thru-cooling systems at various times during the next five years, thereby putting additional cumulative stresses on the river's ecosystem. Following is a table illustrating what plants are likely to be operating with once-thru-cooling at Indian Point during the next five years:

1974	1975	1976	1977	1978
I, II	I, II, III	I, II, III	1, II, III	I, III

There will also be power plants at Lovett, Danskammer, Bowline, Roseton, and Storm King, all drawing large volumes of water from the Hudson and subjecting passive organisms to entrainment (See Goodyear on Other Plants, Feb. 8, 1973). In light of these facts, the Licensing Board was quite generous in permitting Applicant to operate Unit 2 with once-thru-cooling until May 1, 1978.

POINT III

ON CAREFUL ANALYSIS, THE COST-BENEFIT RATIO WARRANTS THE INSTALLATION OF A CLOSED-CYCLE COOLING SYSTEM AT INDIAN POINT 2 AS SOON AS PRACTICABLE.

a. The unquantifiable value of the fishery.

Balancing costs and benefits in a case like the present one is an extremely difficult thing to do. In monetary

terms alone, it is impossible. One cannot put a price tag on a healthful environment or on the economic effects of its destruction. If, because of destruction or depletion of a fishery, people are unable to obtain a food staple important to their health and well-being, they have lost much more than the price of the food. Fish may have a market price, but its value to the public as a life-sustaining resource cannot be quantified. Such is the case here. In fact, all of the parties agree that there are nonquantifiable benefits to be derived from the Hudson River fishery [Tr. 6988, 9418, 9440-2, 9862-3].

And under § 102(2)(B) of NEPA, 42 USC 4332(2)(B), the Board is required to give unquantified values appropriate consideration in decisionmaking. This the Licensing Board has done.

In like manner, one cannot ultimately quantify in monetary terms applicant's need to provide electric power to its customers. The health and welfare of New Yorkers require an adequate supply of electric power. To deprive people of electricity is to seriously undermine the general health, safety, and welfare, just as is the depletion of a natural resource like the Hudson fishery. Thus the two great needs that the Board sought to protect are both ultimately unquantifiable, and the cost-benefit analysis is thus of limited value in this case.

Part of the fishery (the striped bass) is valued in monetary terms only while power generation is assessed no quantified value at all.

b. The cost-benefit analysis.

The cost-benefit analysis in this case does not support Applicant's view that the costs of cooling tower technology outweigh the environmental benefits to be derived therefrom. First of all, the quantified environmental benefit relates only to the striped bass species plus a small increment to represent the value of other species (Init. Dec., 36). Since the Hudson estuary contains millions of fish of various species, the value of the total fishery is much greater than the valuation of only one species, albeit an important one. The dollar estimate for the striped bass does not include the value of other Hudson River fish species which would be adversely affected by Applicant's operations [Tr. 9757-8]. In addition, as the Board properly noted (Init. Dec., 66), the value of the fishery can be expected to increase with time.

Secondly, the cost of the cooling tower must be measured against the costs of operating the once-thru-cooling system. The latter costs are likely to be prohibitive in view of the civil penalty imposed by State law on the impingement of

fish,* and the likelihood that the State may have to order Applicant to close the plant down (as it did on February 29, 1972) during periods of heavy impingement or entrainment [See the State of New York's Exception II to the Init. Dec.,10-13]. Seen in this light, the installation of a closed-cycle cooling system at Indian Point 2 becomes an economic as well as an environmental necessity.

Thirdly, applicant has grossly overestimated the costs of installing a closed-cycle system. As the Board held, it is not proper for Con Edison to include Federal income and property taxes in the system's annual levelized cost [Init. Dec. 80-1, App. Excep. 19, App. Br., 52). Since this money is paid by the consumer (through the Applicant) to the Federal government, that money is returned to the public in the form of services and money payments. It cannot therefore be properly considered a cost to the consumer. In fact, it may more accurately be termed a benefit to the public.

Applicant's projected cost figures for "contingencies" and "escalation" are unduly high and are not justified by the Applicant. The contingencies figure increases its multiple

*New York law expressly prohibits the taking of fish by drawing off water. Env. Cons. Law §11-1321. Fish are specifically considered a resource of the people of the state. Id. §11-0105.

base costs by 20% [Tr. 7559-60], the escalation figure by 7% per annum (Tr. 7551]. These are not categories known to general accounting principles [Cioffi on Accounting, Answers, April 20, 1973, foll. Tr. 11044], and there is no evidence in the record to permit this Board to accept such inflated figures. It should also be noted here that a faster construction schedule would reduce the escalation costs. [Exh. 3, Carter on Revised Generating Costs, Feb. 14, 1973 foll. Tr. 9892]. Furthermore, less than 1% would have to be added to the consumer's bill to pay for a cooling tower [Knighton, Rebuttal, Feb. 22, 1973 at 4, foll. Tr. 9892].

NEPA does not require, indeed it would prohibit, a decision based on a mere mathematical consideration of monetary costs and benefits. It does require the minimization of adverse environmental impact "to the fullest extent possible". The Initial Decision of the ASLB is eminently proper in this regard.

POINT IV

APPLICANT FAILED TO MEET ITS BURDEN OF PROOF IN THIS PROCEEDING ON THE ENVIRONMENTAL ADEQUACY OF THE ONCE-THRU-COOLING SYSTEM.

Under AEC Regulations § 2.732, 37 Fed. Reg. 15127, the Applicant has the burden of proof in this proceeding. Applicant

has failed to establish the validity of its "f" factors and its "compensation" hypotheses in response to the evidence presented by the Commission Staff and the Intervenors and has failed to prove by a preponderance of the evidence that its once-thru-cooling system at Indian Point 2 will not have a serious adverse effect on the Hudson River fishery in general and the striped bass fishery in particular.

POINT V

THE PREPONDERANCE OF EVIDENCE IN THE RECORD SUPPORTS THE ASLB's DECISION TO REQUIRE THE INSTALLATION OF A CLOSED-CYCLE COOLING SYSTEM AT UNIT 2.

a. Striped bass modelling

The mathematical models employed by the Staff and the Applicant are based on present knowledge of the spawning and migratory patterns of the Hudson River striped bass eggs and larvae, and also on the hydraulic forces which propel these organisms through the water. The Staff model is superior in this regard [See 1 FESV-40; Clark on Effects of Indian Point, Oct. 30, 1972, foll. Tr. 6276]. Extensive data on the Hudson River striped bass are contained in the Hudson River Fisheries Investigation (commonly known as the Carlson-McCann Report). These data, along with the Rathjen-Miller data of 1955, form the basis on which the models have been operated and verified

[Tr. 7253-7; Clark, Ibid.]. The Staff model forecast a loss through entrainment at Indian Point 2 of 30-50% of the year 1 recruits [1 FESV-48]. HRFA forecast a loss of 39%, [Clark, Ibid.], the Applicant 2-5% [Lawler on Effects, Oct. 30, 1972, foll. Tr. 6256]. The Applicant's lower figures resulted in part from its model's insensitivity to the fact that the salt wedge in the Hudson estuary would concentrate the eggs and larvae within the wedge. This deficiency in Applicant's model incorrectly results in the organisms being liable to entrainment at only one point in time. This supposition is contrary to our knowledge of the effects of salt and fresh water mixing on transport phenomena in the Hudson estuary, and Applicant was unable to demonstrate that the passive organisms would be able to move through this salt wedge unrestricted. The testimony of the Staff's witness, Dr. Goodyear, remains unrefuted on this point [Goodyear on Factors Re: Striped Bass, April 9, 1973 at 5, foll. Tr. 10826; Tr. 9248-71; 1 FES A-V-81].

b. Compensation and "f" factors

Applicant, in the light of dire estimates of adverse environmental impact by the Commission Staff and HRFA, also attempted to minimize the mathematical model estimates by the use of "f" factors and "compensation". The "f" factors and "compensation" are the most important factors affecting the

accuracy of Applicant's model predictions of minimum adverse impact. [Lawler on Sensitivity, Oct. 30, 1972, foll. Tr. 9405]. If Applicant failed to establish the validity of these factors and their applicability to the Hudson striped bass population, then the Board was justified in accepting Applicant's most conservative estimates [i.e., its model estimates without the claimed mitigating factors] as its real estimates of environmental impact.

The Applicant produced no evidence which would demonstrate a compensatory mechanism at work in the early stages of the striped bass life cycle [McFadden on Impact, Oct. 30, 1972, at 10, foll. Tr. 6254; Tr. 7441-2, 9807-8]. The Staff and Intervenors, on the other hand, presented substantial evidence to indicate that no compensatory mechanism can be seen at work here [Tr. 6656-70, 6724, 11278; Goodyear on Rate of Growth, Feb. 22, 1973, foll. Tr. 9892; Goodyear on Compensation, Feb. 22, 1973 at 4-8, foll. Tr. 9892; Clark on Effects of Indian Point, Oct. 30, 1972 at 49-56, foll. Tr. 6276]. Applicant's expert witness did not know at what life stage compensation operates in striped bass [Tr. 7476] and that studies of striped bass in the San Joaquin River showed them to be largely density-independent [Tr. 7446]. Although Applicant's witness, Dr. Lawler, had determined the compensation

value to be .8, he admitted that Appellant had no tests to confirm this value [Tr. 9807-8]. Dr. Lawler's estimate seems to be little more than the choice of a number favorable to the Applicant.

Applicant also used several other dubious factors which it claimed would reduce the environmental impact of Unit 2's once-thru-cooling system. "f_1", postulated a lower concentration of organisms in the vicinity of the intake than the average river concentration of such organisms. Lawler assumed that water would be withdrawn from the upper east quadrant of the river and that there are fewer larvae there than in the lower quadrant. The evidence, however, showed neither assumption to be correct. Not only is there no basis for assuming more larvae in the lower quadrant, but also it was evident that, if anything, more water would be drawn from the lower quadrant because of the location of the intake [1 FES III-14; Goodyear on Susceptibility, Feb. 22, 1973, foll. Tr. 9892]. "f_2" postulated that the concentration in front of the intake would be smaller than the average concentration in the quadrant [Lawler on Table 19, Feb. 5, 1973, foll. Tr. 9405]. This factor is also utterly unsupported, first, because it is based on the unwarranted assumption that the organisms would be withdrawn from the upper east quadrant and, second, because the conclusion

is based on collection of white perch rather than striped bass, and thus was not even addressed to the species that was the subject of the modelling [Tr. 7370]. Applicant even asserts that white perch spawn in a different manner from striped bass (App. Brief, 37) yet still seeks to base "f_2" on its white perch count. Evidence was presented by the Staff to show that no statistically significant difference exists between the intake concentration of organisms and the average number present throughout the quadrant [Goodyear on Statistical Analysis Feb. 22, 1973, foll. Tr. 9892]. "f_3", which postulated a delay in the entrainment of organisms, was finally acknowledged by the Applicant to have no measurable mitigating effect on entrainment [Lawler on Effects, Oct. 30, 1972, foll. Tr. 6256]. "f_c" postulated that some of the striped bass eggs and larvae entrained in the plant would survive. However, the only data accumulated by Applicant at the Unit 2 outfall showed a mortality of 97.5% of the entrained organisms [Griemsmann, April 6, 1973, foll. Tr. 10349; Griemsmann on Distribution, Feb. 19, 1973, foll. Tr. 9859;Clark, Feb. 12, 1973, foll. Tr. 9858]. It is also reasonable to assume that any organisms which do survive the experience will be so stunned that their survival in the natural ecosystem would be rendered highly

improbable, but Applicant ignored this aspect of the problem [Goodyear on Biological Effects, Feb. 22, 1973, foll. Tr. 9892; 1 FES A-V-16 to 18]. In light of all of the above, the Board was correct in not accepting Applicant's mitigating factors (Init. Dec., 48, 50).

It is ironic for applicant to object that the Board based its decision on mathematical models rather than "empirical evidence" (App. Except. 1, App. Br., 17). The Board based its decision on the evidence submitted by the Applicant, the Staff and the Intervenors. Just like the Staff, the Applicant based its estimate of environmental impact on mathematical models, adding "f" factors and a theory of compensation to reduce the high entrainment figures that its own model would otherwise produce. Applicant's presentation was not based on empirical data, and its "f" factors were little more than wishful thinking in mathematical form. Since Appellant had the burden of proof in this proceeding, it was incumbent on it to produce substantiated evidence in support of its claim of mitigating factors. This the Applicant utterly failed to do. Without mitigation, Applicant's own model indicates a serious adverse impact on the striped bass fishery (See Init. Dec., 43-4).

c. Contribution of Hudson to Middle Atlantic fishery.

There was considerable conflict among the parties concerning the percentage contribution of Hudson River striped bass to the important Middle Atlantic striped bass fishery. Con Edison tried to minimize this contribution by expert testimony to the effect that Chesapeake Bay is the main source of Middle-Atlantic striped bass. However, Applicant's assertion in its brief (p. 29) that the Hudson River contributes not more than 5 to 10% of the Middle Atlantic striped bass fishery is contradicted by the testimony of Applicant's own expert witness on the subject, Dr. Raney. Raney estimated that the Hudson contribution is between 5 and 40% [Tr. 9624]. Analysis of the tagging results, seining experiments, and regression analysis demonstrates that the Hudson is more predominant than Chesapeake Bay in supplying striped bass to the Middle Atlantic fishery [Goodyear on Origin, March 1, 1973, foll. Tr. 9892; Tr. 8560-65; Tr. 8696-7; Tr. 9024-33; Tr. 9906; Tr. 9926-7; 1 FES X11, 29-38]. Raney's contrary opinion on that point is contradicted by an analysis of tagging results [Raney on Striped Bass, Oct. 30, 1972 at 8-10 foll. Tr. 6254; Tr. 9036]. Lawler's opinion was very uncertain [Lawler, Cumulative Effects, March 30, 1973 at 8 foll. Tr. 10339; Lawler on Contribution,

April 20, 1973 at 1, foll. Tr. 11044]. Based on the above evidence and the unverified nature of Applicant's claims, it was proper for the Board to conclude that the Hudson contribution was 20 to 80% of the total Middle Atlantic fishery (Init. Dec., 63). It should also be noted that the Hudson contribution to the New England fishery may also be seriously depleted by Unit 2's operations, yet Applicant offered no estimate of this effect.

d. Stocking

Applicant has offered to stock the Hudson River with striped bass to make up for any losses caused by its plant. This proposal suffers from numerous defects. First, it has not been shown that artificial propagation techniques are a reliable method for replacing lost striped bass and maintaining the stocks in the natural environment [Goodyear on Artificial Propagation, April 23, 1973, foll. Tr. 11220]. Applicant's witness admitted that his experience was limited to stocking fresh-water bodies, not estuarine rivers [Stevens on Stocking, April 5, 1973, foll. Tr. 10339]. Hatcheries would have to make up for the generations lost through destruction of the brood stock, over and above those killed by the plant, but Dr. Stevens' calculations did not take this into account

[Tr. 11147]. Stevens had no data on how many fingerlings would survive once they were placed in the estuary [Tr. 10382-88], and admitted that hatcheries are open to the vagaries of chance and nature [Tr. 11182-3]. Dr. McFadden, another witness of applicant, said that they "were not sure that striped bass stocking would be successful in the Hudson" [Tr. 11345].

Second, applicant makes no offer to replace other species, such as the white perch, who will inevitably be affected by Unit 2's present system [see Init. Dec., 90], nor to determine how such losses may affect the propagation of striped bass [Clark on Effects of Indian Point, Oct. 30, 1972 at 51, foll. Tr. 6276]. Third, Applicant has applied for a license to operate a third power plant at Indian Point, also with a once-thru-cooling system. Applicant's stocking would thus have to make up for losses from that plant also. Fourth, Applicant's stocking may have to make up losses of 50% (Staff maximum estimate, FES V-48) of the yearly striped bass recruits due to Unit 2's operations alone, a virtually impossible task.

e. Applicant's research program.

Applicant attempts as a last resort to stave off the construction of a closed-cycle cooling system by asking for a delay so that Applicant can complete its latest research

program. An incomplete research program, however, is not a satisfactory basis for delaying the construction of a cooling tower in light of the evidence in this record demonstrating a serious threat to the environment from Unit 2's present cooling system. Added to this is the fact that the program is unlikely to resolve many of the major questions raised in these proceedings. For example, there is no mechanism to distinguish natural fluctuations in fish populations from those caused by Unit 2 [Tr. 9502-3, 11280-2]. There is also no mechanism to measure compensatory effects which Applicant alleges will take place [Tr. 9835]. Furthermore, Applicant has admitted that little usable data were gathered in 1972 [Tr. 11340]. The risk of inflicting permanent damage on a priceless natural resource is too great to permit Applicant to forego installation of a cooling tower for additional years in order to collect and analyze data of dubious significance.

f. Damage to species other than striped bass.

The impact of Unit 2 on species other than striped bass has not been adequately assessed by the Applicant other than the bland reassurance that no significant harm will result to them [McFadden on Impact, Oct. 30, 1972, foll. Tr. 6254]. One can safely say that such reassurance does not amount to legal

proof under the AEC regulations, especially after the Staff and HRFA have concluded that other species will be adversely affected by Unit 2 operations [1 FES iii; Clark on Effects, Oct. 30, 1972, 56-7, foll. Tr. 6276].

The Commission Staff and the Intervenors have determined that the other species which will be adversely affected by Unit 2 include the following: alewife, American eel, American shad, bay anchovy, blueback herring, smelt, tomcod, and white perch [1 FES III; Clark on Effects, Oct. 30, 1972 at 56-7, foll. Tr. 6276]. The white perch population, for example, is expected to suffer losses of 1.25 to 6.5-million fish per year from impingement alone [See Init. Dec., 55]. There are indications that the Hudson's white perch population is already declining, probably as a result of past and present kills at Indian Point Unit 1 and other plants along the river (Goodyear on Population Trends, Feb. 22, 1973, foll. Tr. 9892; 1 FES V, 61-62; Init Dec., 56). It is likely, due to the interrelationship of all species in the natural system, that such losses among one species will cause disruptions among other species as well (see Init. Dec., 69), but Applicant has failed to consider this particular factor in its presentation to the Board.

g. Multi-plant impact on the fishery.

In this proceeding, it is imperative for the Appeal Board to consider the effect that all of the Hudson River power plants will have on the fishery since Indian Point 2 will not be operating in a vacuum. A loss at Unit 2 of even 10% of the annual reproduction of striped bass becomes more critical when one considers that there are other power plants in the vicinity also decimating the same species. Thus it is wrong for the Applicant to assert (App. Br., 26) that the Licensing Board's decision would be unfounded if the impact were 10%. When one considers that over the next few years, there will be nine power plants drawing huge quantities of water from the same river, an impact of 10% by just one plant becomes totally unacceptable. Moreover, the mandate of NEPA requires a consideration herein of multi-plant impact on the fishery. See Natural Resources Defense Council, Inc. v. Grant, 355 F. Supp. 280, 5 ERC 1005 (E.D. N.C., 1973), where the court stated that, in determining whether a project significantly affects the quality of the human environment, the cumulative impact with other projects must be considered. (355 F. Supp. at 288-9, 5 ERC at 1006]. See also Conservation Council of North Carolina v. Froehlke, supra, 340 F. Supp. at 227.

The Commission Staff estimates this multi-plant reduction for one year to be 38-64% of the Class 1 recruits, HRFA estimates 56%, and Applicant 30% (most conservative estimate) [See Init. Dec., 43]. Surely such a devastating impact on the fishery may not be permitted by this Commission, especially when there are means available to minimize this effect.

h. Thermal pollution and other adverse effects.

There are other adverse effects which a once-thru-system at Unit 2 would cause in addition to entrainment and impingement. For one, Applicant's water discharges must comply with State thermal criteria. With its present system, there are grave doubts that such criteria will be met. During normal operation, the temperature in Unit 2's discharge canal in June will be over 90 degrees F., thereby exposing the striped bass and other species to substantial mortality [1 FES XII, 27-8]. The Applicant, of course, claims that the criteria will be met, but the Licensing Board made no definite finding on this point (Init. Dec., 30). However, Applicant once again failed to meet its burden of proof, and this Board must consider the likelihood that Unit 2 will violate the State's thermal criteria if the once-thru-cooling system is permitted to continue.

This Board should not permit Applicant to impose additional environmental stresses on the Hudson biota by

thermal pollution, especially in light of the fact that there will be other power plants adding to the stresses and thereby compounding the problem.

Adverse effects on the Hudson River fishery may result from a reduction in the dissolved oxygen concentration in the river near Indian Point [Goodyear on Dissolved Oxygen, Feb. 22, 1973, foll. Tr. 9892]. Adverse effects may also result from the discharge of chlorine and its residuals into the river [Goodyear and Mattice on Chlorination, March 1, 1973, foll. Tr. 9892]. Although these effects may not be so great as the entrainment, impingement and thermal pollution problems already discussed (See Init. Dec., 73-4), they take on increased significance when added to the host of other problems associated with the once-thru-cooling system.

POINT VI

THE EXCEPTION BY APPLICANT (APP. BR., 57-8) THAT THE ATTORNEY GENERAL OF THE STATE OF NEW YORK MUST BE DISTINGUISHED FROM THE STATE OF NEW YORK IS WITHOUT MERIT.

The Attorney General is the chief legal officer of the State and represents the State's interests, and those of its people, in the present proceedings, just as he does in other

legal proceedings. When the Attorney General brings suit, he does so on behalf of the State of New York, and of the people of the State as parens patriae. It is the same here. The Applicant is totally without standing to challenge the Attorney General's representation here -- especially at this late stage. Further, to follow Applicant's argument to its logical conclusion, one would have to say that the views expressed in Applicant's submissions to the Licensing Board and this Board do not represent the views of Consolidated Edison, but only those of its counsel.

The State Atomic Energy Council, which acts as the coordinating body for several State agencies, has not supported Applicant's position on environmental matters in this proceeding.

POINT VII

THE CONSTRUCTION OF A CLOSED-CYCLE COOLING SYSTEM AT INDIAN POINT 2 IS THE MOST FEASIBLE METHOD TO PROTECT THE HUDSON RIVER FISHERY WHILE AT THE SAME TIME PERMITTING APPLICANT TO SUPPLY POWER TO ITS CUSTOMERS.

a. Environmental impact of closed cycle cooling.

The record demonstrates that the environmental impact from a natural draft cooling tower will be minimal. There is no basis for asserting, and indeed even Applicant does not

assert, that fogging, icing, saline drift, or noise will be caused by such a tower [Applicant's Exh. 3-A, Supp. 3; HRFA Exh. V, foll. Tr. 7562; 1 FES XI; Aynsley on Alternative, Oct. 30, 1972, foll. Tr. 6276]. The aesthetic problem, a highly subjective one in any event, is clearly outweighed by the necessity of preserving the Hudson River fishery.

b. Applicant's time schedules.

Applicant has utterly failed to show that it needs a year's time (App. Br., 39-42) within which to complete its meteorological and terrestrial environmental studies preparatory to cooling tower construction. The record demonstrates that information can be obtained in a relatively short period of time, especially with information from the cooling tower industry readily available [Tr. 6961-5, 6969, 6973, 7569, 7576].

(Applicant's Exceptions 14 and 15, on the time required for review and installation of a cooling tower, are answered in the State of New York's Brief on Exceptions, Exception I, 4-9.)

c. Applicant's cooling tower proposal.

It is important to note that Applicant has not agreed to install a closed-cycle cooling system by September, 1981.

It is simply attempting to prevent this needed construction from taking place. One can anticipate that the Applicant will make the same objections in 1977 as it makes now, and that it will challenge any AEC determination to require such construction at that time.

The Licensing Board's monetary estimate of the value of the plant's impact (Init. Dec. 106) is proper in assuming total annihilation of the Hudson striped bass. The Board may not limit its calculations to September 1981 because there is no assurance that Applicant will have constructed a cooling tower by that time (see App. Excep. 9, Appl Br., 33). There is no justification in permitting Applicant, who had the burden of proof in this proceeding and failed to meet it, to continue to disrupt the ecosystem of the Hudson River while it conducts more tests and analyzes still more data. As it is, Applicant will be permitted to employ its once-thru-cooling system at Unit 2 until May 1, 1978, which is a substantial concession in Applicant's favor. There is no justification for permitting any further compromise with our precious natural resources.

CONCLUSION

APPLICANT'S EXCEPTIONS TO THE INITIAL DECISION OF THE LICENSING BOARD SHOULD BE DENIED.

Dated: New York, New York
November 27, 1973

Respectfully submitted,

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