

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))

SUMMARY OF CON EDISON'S POSITION
CONCERNING ENVIRONMENTAL ISSUES

This statement is submitted to summarize Con Edison's position on environmental issues to be determined by the Atomic Safety and Licensing Board regarding an operating license for Indian Point 2.

Con Edison agrees with the conclusions of the Regulatory Staff, as expressed in the Final Environmental Statement, in a number of important respects. We believe the Staff correctly recommended that an operating license should be issued for the facility with its present once-through cooling system; that the environmental effects of operating the plant should be carefully studied; and that a detailed evaluation needs to be made of the environmental and economic benefits and costs of an alternative closed-cycle system.

The fundamental disagreement is over the Staff's

judgment that enough information is now available to decide that a closed-cycle cooling system should be installed in Indian Point 2 and the requirement that this be accomplished by January 1, 1978. Con Edison contends that a study program should be conducted for a period of five years before a considered decision can be made whether an alternative system is required. It is Con Edison's position that the aquatic biota will not be irreversibly damaged during the period of this study and the additional three years needed to construct an alternative system if it is ultimately determined to be required.

Section 101(b) of NEPA enjoins all Federal agencies to use "all practicable means, consistent with other essential considerations of national policy" to achieve environmental goals. In reaching its conclusion on the basis of presently available information that installation of a closed-cycle cooling system must be completed by January 1, 1978, the Staff has failed to carry out the substantive policy of section 101(b) and has not adequately performed the "rigorous balancing of costs and benefits" which Judge Wright described in the Calvert Cliffs' decision as an essential requirement for conformity with NEPA.

The cost of a closed-cycle cooling system for Indian

Point 2 will approach an additional \$150 million in terms of generating costs even according to the figures presented in the Final Environmental Statement and will result in both known and presently unknown effects upon the environment in the vicinity of Indian Point. At a time when inflationary pressures, rising taxes and foreign competition are forcing reexamination of the uncritical assumption of our unlimited resources, the expenditure of this sum without compelling cause should be a matter of serious concern to everyone. Nevertheless, it is symptomatic of the Staff's insufficient attention to economic factors that one must search in the body of the Final Environmental Statement to discover some of the economic implications of the Staff's recommendations.

Analysis of the Final Environmental Statement also reveals the sharp contrast between the risks to the aquatic environment from the once-through cooling system postulated by the Staff and the reality of the economic burdens which would be created by adopting the Staff's recommendation. The Staff's ultimate conclusion rests upon the unstated premise of ascribing greater weight in the cost-benefit equation to hypothetical environmental risks than to economic values. Such an illogical weighing of costs and benefits has led to a precipitous recommendation for installation of a closed-cycle cooling system on

which little study has been performed and without permitting the time to accomplish the necessary work to determine if the alternative is even necessary. This is both contrary to the public interest and illegal under NEPA.

This Board has been directed to consider the matters in controversy between the parties to this proceeding in order to determine whether the conditions proposed by the Staff should be required. Con Edison is confident this Board will fairly and competently evaluate the evidence that will be presented to it and will conclude there is inadequate justification at this time to require the installation of a closed-cycle cooling system for Indian Point 2; that the possibilities of damage to aquatic biota from the once-through system should be scientifically investigated; that the studies which Con Edison has described to this Board should be carried out over a period not less than five years, consistent with the life cycles of the fishes in the Hudson River estuary; and that at the same time the economic and environmental aspects of alternative cooling systems should be investigated as promptly as practicable. These actions can reasonably be taken in time to have an alternative cooling system installed, if determined necessary, within eight years.

Con Edison's five-year program for developing the

information necessary for an evaluation of the environmental impact of operating Indian Point 2 with its present cooling system is already underway. In the light of the best scientific advice available to it, Con Edison believes that the adverse impact of Indian Point 2 operations on Hudson River biota during the period of this study (and the period required for taking corrective measures) will not be irreversible. Con Edison is also proceeding to evaluate the economic and environmental factors associated with alternative, closed-cycle cooling system designs and is prepared to take the necessary steps to implement as quickly as practicable any decision to install such a system.

Should Con Edison conclude on the basis of information gathered during the five-year study period that the need has been demonstrated for modification of the once-through cooling system for Indian Point 2, Con Edison would on its own initiative propose such a modification to the appropriate governmental agencies. In any event, the data would be made available to the agencies having jurisdiction and they would have the information needed to determine what changes in the system were required.

In summary, the Staff has not shown that the requirements for installation of a closed-cycle cooling system have

been adequately justified, as required by section 101(b) of NEPA. This Board should conclude, instead, that Indian Point 2 should be licensed to operate with its present once-through cooling system subject to the condition that Con Edison make the studies and prepare to take remedial actions, if necessary, as discussed above.

Respectfully submitted,

LEBOEUF, LAMB, LEIBY & MACRAE
1821 Jefferson Place, N.W.
Washington, D.C. 20036

Attorneys for Consolidated Edison
Company of New York, Inc.

By

Leonard M. Trosten

Leonard M. Trosten
Partner

Dated: October 16, 1972

Attachment to Letter to Board
from LeBoeuf, Lamb, Leiby & MacRae,
dated October 30, 1972

APPLICANT'S STATEMENT
OF KEY ISSUES IN
CONTROVERSY CONCERNING
THE STAFF'S FINAL
ENVIRONMENTAL STATEMENT

- I. The Staff has not shown it is probable that the combined effects of entrainment of striped bass eggs and larvae and impingement of striped bass juveniles at Indian Point Plants 1 and 2 will in a period of eight years result in a substantial, irreversible adverse impact upon the adult population of striped bass in the mid-Atlantic region.
- II. The Staff has not shown it is probable that the effects of entrainment of planktonic aquatic organisms (phytoplankton and zooplankton, and larval stages of invertebrates and fishes other than striped bass) in Indian Point Plants 1 and 2 will in eight years result in a substantial, irreversible adverse impact upon the abundance and composition of these organisms in the Hudson River.
- III. The Staff has not shown it is probable that impingement of white perch and other fishes (other than striped bass) on the intake screens of Indian Point Plants 1 and 2 will in eight years result in a substantial, irreversible adverse impact upon the abundance and composition of the fish species in the River.
- IV. The Staff has not shown that the heat discharged from Indian Point Plants 1 and 2 will probably cause significant, adverse changes in the aquatic life in the River.
- V. The Staff has not shown that residual chlorine contained in the cooling water released from Indian Point Plants 1 and 2 (and any chloramines formed from reaction with nitrogenous materials in the river water) will probably be toxic to aquatic life of the Hudson River in the thermal plume and in the immediate vicinity of the cooling water outfall.

- VI. The Staff has not shown that the dissolved oxygen content in the thermal plume resulting from operation of Indian Point Plants 1 and 2 may be reduced to levels detrimental to aquatic life.
- VII. The Staff's conclusion that a closed-cycle cooling system should be installed by January 1, 1978 rests upon an insufficient, speculative analysis of the costs and benefits of the present once-through cooling system versus a closed-cycle system. The Staff's schedule does not provide adequate time for evaluation of the effects of the once-through cooling system nor does it provide adequate time for an analysis based on field data of the potential environmental effects of a closed-cycle system.
- VIII. Even if there were an adequate factual basis now for requiring a closed-cycle cooling system to be installed, the Staff has failed to allow adequate time for completion of environmental studies on an alternative system; for design, procurement of components and construction of the system; and for appropriate governmental review and approval.

November 13, 1972

APPLICANT'S STATEMENT OF FACTUAL
MATTERS IN CONTROVERSY CONCERNING
POSITION OF INTERVENORS HRFA-EDF

Applicant controverts the following portions of the "Outline Summary of Intervenors' Factual Position," submitted on October 30, 1972 on the grounds that they are either false, unsubstantiated, misleading or some combination of the three, without necessarily agreeing or disagreeing with the remaining portions or their relevancy to this proceeding:

- 2.c. Striped bass are in the planktonic mode for approximately the first six weeks of life.
- 2.d. During the planktonic stage of life, striped bass are moved southward from the major spawning areas to their nurseries in the areas of brackish water.
- 2.e. Significant numbers of striped bass in the planktonic form are present in the immediate vicinity of Indian Point between approximately May 15th and July 30th.
- 3. While in the planktonic mode, and in the first weeks of the immediately following pelagic mode, striped bass in the Hudson are largely distributed by hydrological forces.
- 3.d. There is no reliable evidence that the fish in the planktonic mode in the vicinity of Indian Point vary significantly in horizontal distribution.

9. Under normal operating conditions, planktonic and early pelagic organisms entering Indian Point Unit No. 1 between May 15th and July 30th will be subjected to:
 - 9.a. A speedy temperature rise of 12.4° F. and will be exposed to the raised temperature for some time.
 - 9.b. Repeated rapid changes of pressure.
 - 9.c. Mechanical damage.
 - 9.d. Periodic chemical damage.
10. Under normal operating conditions, planktonic and early pelagic organisms entering Indian Point Unit No. 2 between May 15th and July 30th will be subjected to:
 - 10.a. A speedy temperature rise of 14.9° F. and will be exposed to the raised temperature for some time.
 - 10.b. Repeated rapid changes of pressure.
 - 10.c. Mechanical damage.
 - 10.d. Periodic chemical damage.
13. Fish in the planktonic form and in the first weeks of the immediately following pelagic mode entering the cooling systems of Indian Point Unit No. 1, Indian Point Unit No. 2, Bowline Point and Roseton will suffer a severe adverse impact; it is most likely that all or nearly all striped bass will be killed by passage through the cooling systems as presently planned for operation.
14. Approximately 20% of the annual production of striped bass in the Hudson will pass through the cooling systems of Indian Point Units 1 and 2 combined in the planktonic mode and the first weeks of the immediately following pelagic mode.

16. Significant damage to the Hudson populations of white perch, alewife, blueback herring, bay anchovy, smelt and Atlantic silverside is probably due to their passage through the cooling systems at Indian Point Units 1 and 2, Bowline Point and Roseton.
20. A significant proportion of Gammarus and Neomysis passing through the cooling systems of the plants will be killed during the summer period.
21. The proportion of Gammarus and Neomysis in the Hudson which will pass through the cooling systems of the plants is unknown.
22. The precise impact of the loss of Gammarus and Neomysis passing through the cooling systems of the plants on the food supply of juvenile fish in the Hudson is unknown, but will involve a significant loss of food organisms.
23. A further adverse impact on the food chain will occur through a significant loss of phytoplankton as a result of passage through the cooling systems of Indian Point Unit No. 1, Indian Point Unit No. 2, Bowline Point and Roseton.
- 24.a. Con Edison's records of fish kills have not been kept in a complete and uniform manner which would facilitate determining the influence on total fish killed of such factors as: (i) ambient temperature of the River, (ii) plume of heated water from discharge, (iii) velocity of water at intake, (iv) total volume of water withdrawn from the Hudson, (v) fish protection devices such as screens (fixed and travelling), louvres, baffles, sonic devices, electric fields or lights.

24.b. Con Edison's records of fish kills have:
(i) omissions of days when counts were not made, (ii) periods within the day when screen washings were missed, (iii) omissions of fish killed and not counted.

27. Extrapolations from records of fish kills indicate that in a typical year approximately the following numbers of fish will probably be killed at the intake screens to Indian Point Unit No. 1 when the Plant is at full capacity under normal operating conditions:

| <u>Month</u> | <u>Fish Killed Per Day</u> |
|--------------|----------------------------|
| Jan. | 20,300 |
| Feb. | 7,600 |
| March | 4,200 |
| April | 1,000 |
| May | 500 |
| June | 500 |
| July | 1,900 |
| Aug. | 3,300 |
| Sept. | 1,900 |
| Oct. | 1,700 |
| Nov. | 1,600 |
| Dec. | 6,900 |

29. During the winter months, fish will be attracted to the plant site by the thermal discharge plume from Indian Point Unit No. 1 and Indian Point Unit No. 2 and their vulnerability to death by impingement will be increased.

30. On the average, at least 4 times as many fish will be killed at the Indian Point Unit No. 2 intake screens as will be killed at the Indian Point Unit No. 1 screens.

31. It is likely that when Indian Point Unit Nos. 1 and 2 are operating at full capacity under normal conditions at least 7.5 million fish will be killed on the intake screens of the two plants, assuming continuing high population size.
32. It is probable that the total fish kills will be made up of at least 5% striped bass.
34. The killing of fish on the intake screens of Indian Point Unit No. 1 and Indian Point Unit No. 2 will have a significant adverse impact on the fishery and general ecology of the Hudson, particularly on the white perch population.
35. The killing of eggs, larvae and fish by passage through the cooling systems at Indian Point Unit Nos. 1 and 2, Bowline Point and Roseton or by impingement will have a significant adverse impact on the fishery and ecology of the Hudson, particularly on the annual production of striped bass which will be reduced by approximately 56%.
36. The Hudson nursery ground is a major contributor to the Mid-Atlantic and New England striped bass fishery.
37. There is no indication that compensatory effects will reduce the significance in the adult population of the percentage reduction in the larval, juvenile and young of year population.
38. The reduction of the annual striped bass population in the Hudson by 56% will result in a massive reduction in the striped bass fishery along the Mid- and North Atlantic coast as that year class enters the fishery four to five years later.

39. A serious reduction of the fishery will be caused by any continued reduction of the breeding stock.
40. The total adverse impact on the fishery of the Hudson from the discharge of heated water is unknown.
41. Cooling water passing through Indian Point Unit No. 1 shows a loss of dissolved oxygen varying from .5 to 1.6 mg/litre.
43. The dissolved oxygen in the water entering Indian Point Unit No. 2 is below 6.0 mg/litre from June through September.
45. Control over expected chemical discharge from Indian Point Unit No. 2 is inadequate.
- 45.a. Chemical releases are dependent on operating and plant conditions, the timing of which cannot be controlled in most circumstances.'
46. The release of chlorine and its compounds will have a significant adverse impact on the fish and other aquatic biota in the vicinity of Indian Point.
- 47.a. The present cooling system has a significant adverse impact on fish of screenable and non-screenable sizes.
- 47.b. The present cooling system has a significant adverse impact on the other aquatic life of the Hudson.
- 48.a. Reduction of volume of water withdrawn will proportionately reduce the amount of fish and other non-screenable organisms passing through the cooling system of Indian Point Unit No. 2.

49. The cost of a closed-cycle natural draft cooling towers at Indian Point is approximately \$17.5 to \$30 million.
54. It will take no more than two and one-half years to construct a natural draft closed-cycle cooling system and place it in operation.
56. The rate of production of power at Indian Point Unit No. 2 can be altered between 10 and 100% of full power in less than 20 minutes; Indian Point 2 can be brought from hot shutdown to 10% of full power in a short period.
57. The fishery dependent on the Hudson has a multi-million dollar value.
 - 57.a. The 1970 value of the Atlantic striped bass fishery supported by the Hudson in terms of sports catch is approximately \$73 million dollars.
 - 57.b. The 1970 value of the Atlantic striped bass fishery supported by the Hudson in terms of commercial catch is approximately \$2.4 million dollars.