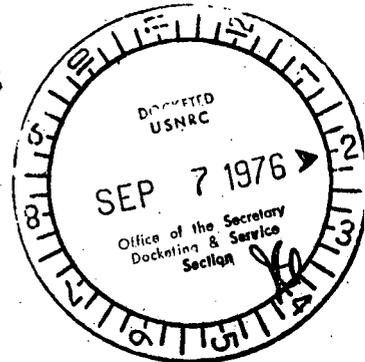


Consolidated Edison Company of New York, Inc.
4 Irving Place, New York, N.Y. 10003
Telephone (212) 460-3815

August 30, 1976



Director of Nuclear Reactor Regulation
Attn: Director, Division of Site
Safety and Environmental Analysis
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Sir:

Consolidated Edison Company of New York, Inc. (Con Edison) respectfully submits its comments on the Draft Environmental Statement for extension of operation with once-through cooling for Indian Point Unit No. 2 (DES), dated July 1976, prepared by the Office of Nuclear Reactor Regulation of the United States Nuclear Regulatory Commission (the staff). These comments are submitted pursuant to the notice of the Nuclear Regulatory Commission in the Federal Register on July 15, 1976.

The comments are organized into two parts. The first contains Con Edison's principal comments on the DES. The second part contains detailed comments.

Con Edison hopes that these comments will be of use to the Office of Nuclear Reactor Regulation in preparing the Final Environmental Statement.

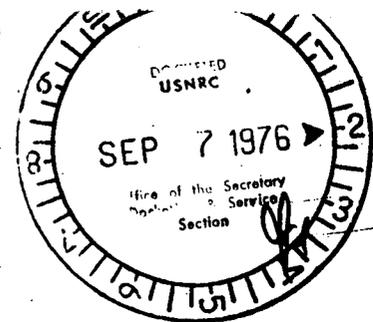
Very truly yours,

William J. Cahill, Jr.
William J. Cahill, Jr.
Vice President

Enc.

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COMMENTS ON DES
PART I - PRINCIPAL COMMENTS



1. Conclusion is Correct

Con Edison commends the staff for its conclusion that after considering various alternatives and weighing relevant factors in accordance with NEPA it has expressed a preference for a two year extension of operation of Indian Point Unit No. 2 with once-through cooling. Although this conclusion is consonant with Con Edison's application of June 1975, we consider it appropriate to point out certain significant differences between the staff's analysis and our own.

2. Additional Reason for Granting License Amendment is Important

Con Edison believes that the most important benefit of the proposed license amendment will be to preserve options with respect to the necessity for constructing a closed-cycle cooling system. Although the DES refers to this benefit as a factor (p. 4-1), it does not appear to place much weight on it.

The staff's jurisdiction in this matter derives from the National Environmental Policy Act of 1969 (NEPA). One of the fundamental purposes of that Act was to avoid

unnecessary adverse environmental effects by requiring a detailed analysis of environmental impacts prior to Federal authorization of major actions. Con Edison's Ecological Study Program was designed to obtain the data required for that kind of environmental analysis prior to construction of a closed-cycle cooling system.

There is no doubt that construction of any closed-cycle cooling system results in an irrevocable commitment of resources and an environmental impact of significant proportions. We believe the staff should recognize its obligations under NEPA to review carefully the results of the Ecological Study Program and to balance the costs and benefits of closed and open cycle cooling systems before recommending irrevocable environmental impacts. Since the proposed license amendment permits the type of analysis required by NEPA, we believe the opportunity to make that analysis should be a major reason for granting the amendment.

3. Ecological Study Program is Providing Significant New Data

The DES, perhaps unwittingly, appears to give the impression that the staff has prejudged the results of the Ecological Study Program when it says (p. 3-7) that the 1975 data will not provide "a quantum jump in ability to forecast the

impact of plant operation on the Hudson River ecosystem on fish populations". This appears to ignore the enormous quantity of data that has been presented to the staff since the application for the license amendment was filed and also the nature of the study program.

The Ecological Study Program has developed a large body of data in the last few years all of which has been presented to the staff. The Detailed Comments contains a list of the reports submitted since the filing of the subject application. Reports furnished the staff to date include significant new data on the size of fish populations in the Hudson River, spawning areas, entrainment impacts, impingement impacts, the existence of compensation in striped bass populations, migratory range of the striped bass, influences of thermal discharges on biota and the characteristics of thermal plumes, and on the feasibility of a striped bass hatchery program to mitigate plant impacts.

Upon completion of the program relative to Indian Point 2 in January 1977, Con Edison intends not only to present the 1975 data but also a comprehensive analysis of the results of the Ecological Study Program and its conclusion as to impacts of power plant operation on the Hudson River ecosystem. This will be accompanied by a state of the art

benefit/cost analysis which will quantify environmental impacts to the extent possible as required by NEPA.

The accepted principles of scientific analysis and legal obligations under NEPA both preclude any prejudgment of this effort.

4. Deferral Benefits Are Not Minor

Con Edison questions the staff's conclusions that the benefits of a delay, assuming a closed-cycle cooling system is eventually constructed, are minor. The staff is aware of the fact that citizens of the communities effected by the cooling tower are deeply concerned with its impact on them. The comments of the Village of Buchanan and others on the DES for the Selection of the Preferred Closed-Cycle Cooling System reflect this deep concern. Two additional years without the adverse impacts of a closed cycle cooling system would be greatly appreciated by the community and should not be considered minor.

5. Proposed Amendment Should Include Provision for Governmental Approvals of Closed-Cycle Cooling System

The DES in its proposed amendment (p. ii-iii) has altered the terms of Con Edison's request. In particular the staff has omitted from Paragraph 2.E(1)(b) the following sentence:

"In the event the licensee has acted with due diligence in seeking all such governmental approvals, but has not obtained such approvals by December 1, 1977, then the May 1, 1981 date shall be postponed accordingly."

The Appeal Board in ALAB-188 made it abundantly clear that Con Edison cannot be responsible for the time it takes governmental agencies to act, and that it and its customers should not be penalized by regulatory delay. This applies with equal force to the new date. Con Edison believes that the changes in the license condition proposed by the staff, beyond those urged in the application, are inappropriate and inconsistent with the ground rules laid down in ALAB-188.

If the staff has based its views on the fact that the extended time should be sufficient to obtain regulatory approvals, it has failed to consider the problems which have arisen in the past year in this regard. The Village of Buchanan Zoning Board of Appeals denied Con Edison's request to build a natural-draft cooling tower. The matter is now in the State courts on appeal and this litigation is likely

to require a substantial period of additional time before a final decision can be obtained. Con Edison should not be required to proceed with construction of a cooling tower while the Village of Buchanan is continuing its legal battle on this issue.

COMMENTS ON DES

PART II - DETAILED COMMENTS

Page 1-2, section 1.4 Applicant's Basis for Proposed Extension

As discussed in Part I, a major reason for Con Edison's request for extending once through cooling is to make available enough data and analyses for an informed decision on the ecological need for closed cycle cooling. The staff's DES could have noted the fact that more information directly related to the extension issue had become available in the interval between Con Edison's application and the staff's issuance of the DES. The availability of this information supports the staff's conclusion that extension of once through cooling is merited. Furthermore, the staff could have emphasized that the information and analysis base was continually growing under Con Edison's comprehensive ecological study program. A list of reports, sent to the NRC since Con Edison's application and related to this application follows:

<u>Report Title</u>	<u>Date Sent</u>
(1) TI (Texas Instruments Inc.) - Semiannual Progress Report for Hudson River Ecological Study in the Area of Indian Point, 1 January - 30 June 1974 (April 1975)	7/8/75
(2) URI (University of Rhode Island) - Racial Investigation of the Striped Bass Using Critical Scale Analysis (May 23, 1975)	7/8/75
(3) UMA (UMA Engineering Pacific, Inc.) - Feasibility Study and De- sign Development, Striped Bass Fish Hatchery, Hudson River, N.Y. (December 15, 1974)	7/8/75
(4) TI - Hudson River Ecological Study in the area of Indian Point - 1974 Annual Report (July 1975)	8/4/75
(5) TI - Final Report of the Synoptic Subpopulation Analysis, Phase I: Report on the Feasibility of Using Innate Tags to Identify Striped Bass (<u>Morone saxatilis</u>) from Various Spawning Rivers (September 1975)	10/22/75
(6) S&W (Stone & Webster Engineering) - First Progress Report, Indian Point Flume Study (August 1975)	10/22/75
(7) TI - Indian Point Impingement Study Report for the Period 1 January 1974 through 31 December 1974 (November 1975)	12/17/75
(8) TI - Feasibility of Culturing and Stocking Hudson River Striped Bass 1974 Annual Report (November 1975)	12/17/75

- (9) TI - Bluefish Predation In The Lower Hudson River (February 1976) 3/26/76
- (10) NYU (New York University) - Effects of Entrainment by the Indian Point Power Plant on Biota in the Hudson River Estuary - Progress Report for 1974 (February 1976) 4/7/76
- (11) NYU - The Effects of Temperature and Chlorine on Entrained Hudson River Organisms (June 1976) 7/2/76
- (12) TI - Fisheries Survey of the Hudson River Volume IV March - December 1973 (Revised edition June 1976) 7/28/76

Page 2-1, section 2.1.1. The Site, General

The plan for an 80 acre recreation area is based on the existing once through cooling system. Under the existing license the plan cannot be implemented and the size of the recreation area will have to be reduced to accomodate the cooling tower.

Dissolved oxygen (D.O.) levels in the vicinity of Indian Point are usually about 5 ppm in summer and 12 ppm in late winter, not the 3 ppm and 11 ppm the staff suggests. D.O. values of 4 ppm may occur during summer months in some areas, but generally for only very short periods of time (days). (See Fig. V-2, page V-6, Hudson River Ecological Study, 1973 Annual Report dated July, 1974 prepared by Texas

Instruments.) The Staff should use recent data, when available, in view of the improving quality of the water in the Hudson River.

Page 2-4, section 2.1.2.2 Aquatic Biota

Although the Texas Instruments report "Hudson River Ecological Study, 1974 Annual Report", dated July, 1975, does state that Hudson River tagged striped bass do move into New England waters (page IX-8), it in no way implies that the Hudson River is a major source of the striped bass caught in New England waters.

The anadromous species listed at Section 2.1.2.2 paragraph 5 of the DES use a considerable portion of the Hudson River for spawning and/or nursery areas, and most of these species spawn considerable distances above Indian Point. It is incorrect to imply that Indian Point is a critical spawning area for these species.

Page 2-7, section 2.2.2.3 Closed-Cycle Cooling Systems

In assessing the impact on the aquatic biota of the Indian Point Plant, the staff assumed that the intake flow rate would be 4585 cfs with all three units operating with once-through cooling, and 2772 cfs with Units Nos. 1 and 3 operating with once-through cooling and with Unit No. 2 operating with closed-cycle cooling. The actual annual

average intake flow will be significantly lower than the staff estimate because the flow is reduced by 40% when the ambient river temperature falls below 40 F (generally from December 15 to about March 31) and because the flow is reduced during the refueling outages. Accounting for flow reductions during these periods, the annual average intake flow rate would be approximately 3550 cfs with all three units on once-through cooling and only 2150 cfs with Indian Point Unit No. 2 operating with closed-cycle cooling.

Page 3-1, section 3.1, b. Terrestrial Ecosystem

Con Edison's studies have shown that operation of a natural draft cooling tower can be expected to produce cumulative visible injury to Eastern hemlock. This injury to hemlock is thought to be drought dependent only to the extent that drought will increase its severity. Injury to white ash and flowering dogwood is expected to be slight except during extended rainless periods. This injury will probably not be visible to the residents of the area unless it occurs to their ornamental specimens.

Page 3-1, section 3.2.1 Aquatic Ecosystem; Introduction

Staff fails to take into account results of TI studies of white perch and striped bass food habits in the Indian Point region which indicated that Neomysis was not the dominant food item in striped bass, white perch and tomcod diets, and

alternate food sources could be utilized in the absence of Neomysis. These results are reported in the Hudson River Ecological Study - 1973, Annual Report (page IV-44) and 1974 Annual Report (page VII-26).

Page 3-2, section 3.2.2 Striped Bass

The staff has apparently declined to revise its estimate of compensation in light of Supplement II (pages VIII 1-14) to the Environmental Report to support the Extension Request. We also point out the staff's conclusion at Section 3.2.2.3 of the DES where they stated "The applicant's presentation of evidence of compensation in the Hudson River striped bass population is the most significant new information to come out of the applicant's research program since the issuance of the Indian Point Unit No. 3 FES." Accordingly we believe the staff should reassess its use of compensation in the Striped Bass Model.

Page 3-2, section 3.2.2.1 Incremental long-term Entrainment Impact on the Hudson River Striped Bass Population

Paragraph 4, and Tables 3-1, pp. 3-4, footnote 6. The staff incorporated the operations of Indian Point 1, Lovett, Danskammer, Albany Steam Station and the 59th Street Stations in Impact Analyses. Since these are older stations, their impacts, if any, have already been accommodated by the Striped Bass population, and they

therefore represent background conditions. In addition, Indian Point 1 has been inoperative since October 1974. Albany and 59th Street are well away from the areas of spawning and larval development for striped bass and consequently impart no entrainment impacts.

Page 3-6, section 3.2.2.2 Impingement of Striped Bass

We disagree with the staff's statement that its estimated annual loss of striped bass due to impingement (estimated at 31,906) is not trivial when compared to the expected juvenile standing crop. The impingement loss expressed in both numbers and weight (380 lbs.) is, in our judgement, trivial.

Page 3-6, section 3.2.2.3 Compensation

We note that the staff's position on compensation, which is similar to the one taken in the Indian Point 3 FES, i.e. willingness to accept the probable existence of compensation in the striped bass population but no acknowledgement of the need for incorporation of compensation in modeling efforts to produce more realistic estimates of impact. The meaning of "... uncontrolled density-independent mortality" is unclear, but seems to imply inaccurately that mortality caused by power plants is both unpredictable and incapable of being reduced.

Contrary to the statement in the last two lines of section 3.2.2.3, the stock recruitment analysis presented by TI provides a basis for defining the range of cropping rates which could be offset by compensatory response. The statement represents an unfounded minimization of the significance of the TI data.

Page 3-9, section 3.2.5.1 Applicant's Description of its Research Program

Figure 3.2 indicates that assessment of effects of Indian Point Unit 3 will be completed by January 1977. Because of construction delays, Unit 3 did not begin operational tests until May, 1976, and hence its effects will not be assessable until after 1977. However, predictions of plant impact based on data collected at Unit 2 will be made and presented in the January, 1977 report.

Page 4-2, section 4.1.5 Summary

The staff is incorrect in stating that a one-year delay is sufficient to obtain the improvement in the biological evaluation. The schedule requested by Con Edison calls for submittal of the biological data and analysis of power plant impacts in January 1977. In Con Edison's Environmental Report to Accompany the Application for a License Amendment dated June 1975, a schedule was presented for compliance with a May 1, 1981 date for termination of operation with

once-through cooling which showed completion of agency review on May 1, 1978. (Figure 1-2.) This differs from the earlier schedule for the May 1, 1979 date (Figure 1-1) in that in the new schedule Con Edison agreed to award contracts for site preparation prior to completion of agency action in order to allow more time for Commission review and recognizing that the preferred alternative system should be established by that time. A one-year delay, however, would require completion of Commission action by May 1, 1977, which would appear unrealistic.

Page 5-1, section 5.2 Greater or Lesser Extension of Time

We agree with the staff that one of the major contributions of the research programs has been analysis of yearly data going back into history. This additional data should be utilized in order to determine whether adverse impacts have in fact occurred as a result of adding power plants to the system. This was the basis of the original Indian Point study program. To date, we have no such evidence of adverse impacts occurring.

The statement asserting decreasing incremental importance of each data point is misleading. The data base on ichthyoplankton, for example, includes only one year of usable data during the 1960's and does not resume until 1973; thus for analysis of ichthyoplankton mortality, only 3

years of data existed for "the 1973-74 cycle of data and analysis" (1967, 1973, 1974). If these data were to be used in an assessment of compensation by correlating mortality rate with density, we would have only one (1) degree of freedom, and a correlation of 0.997 would be required to achieve significance ($\alpha = .05$). Correlations needed to achieve significance for each subsequent year of data are 0.950, 0.878, 0.811, 0.754, 0.707, 0.666. Similar situations occur for other data sets.

The historical data is not as extensive as the staff suggests and the addition of each data point is indeed very important. A further consideration is that we often must deal with more than one independent variable at a time causing us to lose even more degrees of freedom.