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PROD. & UTIL. *EA* 50-247

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February 6, 1973

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Re: Consolidated Edison Company
of New York, Inc.
Indian Point Unit No. 2
AEC Docket No. 50-247

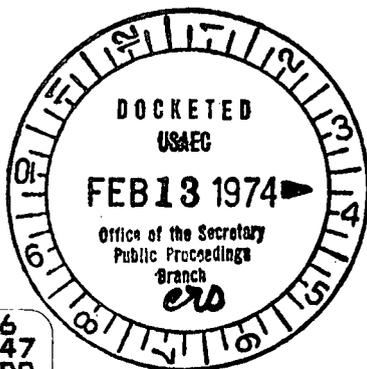
Gentlemen:

In accordance with your letter under date of January 29, 1974, Applicant submits its comments on the responses of the Regulatory Staff to the January 14, 1974 questions of the Appeal Board. Applicant has not endeavored to address each point either presented or omitted by the Staff (see, e.g., Appeal Board Question 23) but rather to limit its comments to those items which are particularly misleading.

Very truly yours,

LEBOEUF, LAMB, LEIBY & MACRAE
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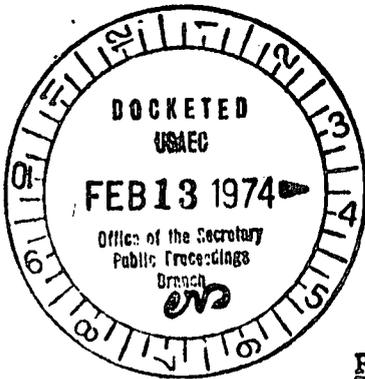


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Enclosure

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DOCKET NUMBER *Ref Cases*
PROD. & UTIL. EAG. 50-247

Indian Point Unit No. 2
AEC Docket No. 50-247

APPLICANT'S COMMENTS ON
RESPONSES OF THE REGULATORY STAFF

Mitigating Actions

1. In this response the Staff embarks on its circular and inconsistent logic which appears throughout the Staff's responses submitted on January 25, 1974. For example, in its response to question 1 the Staff states that the present environmental technical specifications for the operation of Indian Point 2 "are designed to limit and monitor ... any observable changes in aquatic life in the Hudson River from operation of the ... Plant with the once-through cooling system up to January 1, 1978." (At 1; see also the Staff's Statement at 2 that the ecological program included in the environmental technical specifications will "provide the necessary information to detect short-term impacts.") Then, without further explanation, other than that this is what the Staff "believes" (at 4), the Staff alleges that Consolidated Edison's program, although capable of not only detecting "short-term impacts" (at 2) but also "any changes in aquatic life in the Hudson River from operation

of the Plant with the once-through cooling system" (at 3), "will not provide sufficient information to assess long-term impacts." (At 4.) The Staff compounds its confusion by stating that the research program will provide "necessary information to determine the need to take appropriate action if damage becomes excessive during this interim period" (at 2) but then proceeds to state later that it would take "at least 12 years ... to demonstrate a decline" in the striped bass population. (At 58.)

The above statements are made in a setting where the Staff predicts a 30-50 percent decline in year class recruitment. But the Staff states that even with closed-cycle operation (where based on the Staff's model and the flow configuration for closed-cycle operation the percentage reductions would be less than 3 percent) a "monitoring and surveillance program would be appropriately designed for conditions associated with such operation" (At 2.) For some unexplained reason those impacts predicted by the Staff resulting from once-through cooling can not be detected by Consolidated Edison's research program but impacts of much

less magnitude from closed-cycle cooling will be detected.

2. In its response the Staff candidly admits that Consolidated Edison's research program will determine whether the Staff's predictions regarding the impact of Indian Point 2 operation are correct (at 3, 5-6) and further, that such impact, if detected, can be mitigated (at 5-6). If the research program is an adequate monitor during the first five years of operation and if mitigating measures can be implemented during such period as required, the obvious question remains why Indian Point 2 cannot be operated with once-through cooling until September 1, 1981 with the same safeguards provided by the environmental technical specifications. The Staff's answer appears to be that the "staff and HRFA assessments conclude that irreversible damage would occur if operation with once-through cooling were continued beyond the near term of five or so years of operation at once-through conditions."

(Emphasis supplied, at 5.) The Staff's statement, however, is not supported by the evidence and is not even consistent either with the Staff's position during the course of this hearing or the Staff's position in other responses to questions of the Appeal Board. See, e.g., FES, I at XI-74 (follows Tr. 6271)

as corrected in Errata to FES at 3 (Tr. 6263, 6267, 6271); Responses to ASLAB Questions January 14, 1974 at 59 (lines 21-22); contra Responses at 9 (lines 9-10), 10 (lines 8-9). Furthermore, the phrase "five or so years" could well include the additional period of once-through operation until September 1, 1981. It certainly would include a period extending beyond May 1, 1978. See Applicant's Comments to Staff Response 4.c.

A description of Consolidated Edison's research program was incorporated as part of Consolidated Edison's comments on the DES and is set forth in the FES, Volume II at A-XII-282 through 290. This document, Appendix G: Scope of Work for Ecological Studies at Indian Point was also received into evidence (follows Tr. 6256). The environmental technical specifications proposed by Consolidated Edison included alternative ecological surveys during the operation of Indian Point 2. One survey was proposed if the Commission determined that a closed-cycle cooling system was to be installed for Indian Point 2 and the "McFadden-Woodbury ecological survey program" (at 4) was proposed if the Commission determined that the final decision for a closed-cycle cooling system would not

be made until completion of the ecological survey program.

Letter from Mr. Newman to Mr. Knighton, April 30, 1973.

4.b. and 4.c. The Staff never addresses the question whether the evidence demonstrates that operation with once-through cooling until September 1, 1981 would be irreversible. The Staff admits that "sizeable effects of the once-through cooling system can be accepted" (at 9) during the so-called "short term." If this be so, there is clearly no logical basis for the Staff's position in this case. The Staff patently has no rational basis for its definition of "short-term." Consolidated Edison has not suggested long-term operation with once-through cooling. Rather, Consolidated Edison has requested operation of Indian Point 2 with once-through cooling up to and no later than September 1, 1981. The evidence supports such operation with the proper monitoring program implemented and with appropriate mitigating measures available. Conversely, the evidence does not support the Staff's statement that "[a]s each period of time passes beyond [January 1978 or May 1978], the effect of continuing once-through operation damages the fishery further and will entail irreversible damage." (At 10.) See FES, I

at XI-74 (follows Tr. 6271), as corrected in Errata to FES at 3 (Tr. 6263, 6267, 6271).

5. The Regulatory Staff's conclusory, after the fact, rationalization of its position is not based on facts in the evidentiary record. Furthermore, the Staff's response regarding "depletion of the fishery during five years of operation" (at 12) demonstrates that the January 1, 1978 and the May 1, 1978 date have no meaning, but rather that the Staff was contemplating a period of full power, once-through operation across five spawning seasons. See Tr. 140, Jan. 9, 1974 oral argument. Even on the basis of this position, although such a restriction is not supported by the record, operation of Indian Point 2 with its presently designed once-through cooling system should be allowed to continue until May 1, 1979.

6. Although the Staff admits that the evidentiary record supports the possibility of a restocking program for striped bass, the two arguments (void of record citations) proffered by the Staff - which attempt to minimize the "probability of success" of such a program - are sheer nonsense. One would certainly expect that the successful introduction of a new species into an ecosystem by stocking would be more difficult than the successful introduction of a species by

stocking into an ecosystem known to support that same species. Furthermore, it is the mid-Atlantic and not the Hudson River which is heavily fished for striped bass.

As to the Staff's second argument, it is simply illogical to think that "the probability of survival...is undoubtedly higher" (at 14) for striped bass yearlings transported across the continent almost 100 years ago than for hatchery-reared fingerlings in 1974 or later.

Finally, the evidentiary record does not demonstrate the need for the artificial propagation of species other than striped bass.

7. See Applicant's Proposed Findings of Fact and Conclusions of Law in the Form of a Proposed Initial Decision for a Full-Term, Full-Power Operating License, May 17, 1973 at 198-211, especially 205-07 (Findings N18-N20), as corrected in Appendix to letter from Mr. Trosten to the Licensing Board, June 25, 1973.

8.a. through 8.c. The Staff's responses to these questions demonstrate that the Staff's position regarding the feasibility of stocking striped bass in the Hudson River is based upon assumptions which are irrelevant, factually incorrect

and contrary to law. Even if the Staff's argument were correct that obtaining wild brood stock would become "finally impossible" because of a continuing decline in the striped bass population (a position with which the Applicant disagrees, see Applicant's comments to Staff response 21), the Staff has neither argued nor presented evidence to demonstrate that such an "impossibility" would occur by September 1, 1981. To project such impossibility to some indefinite period in the future is irrelevant to the issue in this proceeding. In addition, the Staff ignores the possibility of obtaining brood stock from somewhere other than the Hudson River. See e.g., Testimony of Dr. Robert E. Stevens on Feasibility of Stocking the Hudson River with Striped Bass, April 5, 1973 (follows Tr. 10339) at 7.

In its response the Staff assumes as a "fact" its argument, unsupported by the evidence, "that other power plants [are] steadily reducing the total stock of striped bass in the river...." (At 18).

Implicit in the Staff's argument is the erroneous theory that Consolidated Edison can be (and should be) required "to offset the cumulative effects of all power plants

on the Hudson" by maintaining annual production of striped bass "at a pre-operational level." (At 18; see also at 19). Such a requirement - as a condition for operating Indian Point 2 with once-through cooling through September 1, 1981 - is not authorized by NEPA. The Staff's incorrect determination that it could and should impose such a requirement upon Con Edison in this proceeding has flawed the Staff's analysis of the feasibility of the stocking program and has led the Licensing Board into error.

Mid-Atlantic

10.a. through 10.c. The Staff's responses provide a glaring illustration of circular logic. Rather than utilizing regression models to test hypotheses, the Regulatory Staff has attempted to test the regression models by the hypotheses. Such an unscientific approach is wrong. The Staff's statement at 27 that "...the hypothesis that the Chesapeake is a major contributor to the Middle Atlantic striped bass fishery is inconsistent with the resulting regression equation" is incorrect. For a discussion of Applicant's position on this matter, see Applicant's Proposed Findings of Fact and Conclusions of Law in the Form of a Proposed Initial Decision for a Full-Term, Full-Power Operating License, May 17, 1973 at 110-11 (Finding E3, particularly transcript references cited in footnote E7), 115-16 (Finding E10-E11) and Rebuttal Testimony of Dr. James T. McFadden on Effects of Indian Point Units #1 and #2 on Hudson River Fish Populations, Feb. 5, 1973 (follows Tr. 9405) at 10-16.

11.a. See Applicant's Proposed Findings of Fact and Conclusions of Law in the Form of a Proposed Initial Decision for a Full-Term, Full-Power Operating License, May 17, 1973 at 111-13 (Findings E4-E5, particularly footnote E13).

Compensation

13.b. The Staff's definition of the term "important determinant" is not supported by the evidentiary record. It should also be noted that this definition is given in terms of "the size of the population of the Hudson striped bass at its present level." (Emphasis added.) The magnitude of the mechanism of compensation would increase if the striped bass population were to decline as a result of the operation of Indian Point 2 with once-through cooling.

13.f. It should be emphasized that the Staff model assumes no compensation at any stage.

Research Program

14.b. The ecological program now being conducted by Consolidated Edison was submitted to the Hudson River Policy Committee for its review and approval. The Policy Committee recommended modifications to the program and approved it as modified. At this time the Policy Committee continues to review and evaluate the program periodically and to advise Consolidated Edison as to the conduct of its program. In addition, a Committee Coordinator, as representative of the Policy Committee, maintains an office at the Indian Point site where he provides a daily review of the program. For a more detailed description of the Hudson River Policy Committee, see letter from Mr. Hall to Mr. Woodbury, Jan. 11, 1973 (follows Tr. 9386); letter from Mr. Woodbury to Mr. Hall, June 13, 1972 (follows Tr. 9386); letter from Mr. Hall to Mr. Woodbury, July 20, 1972 (follows Tr. 9386); Tr. 7688-700, 7483-84.

The Regulatory Staff's response that the Staff had no input into Applicant's ecological program is misleading. Indeed, the evidentiary record contains the fact that during the Staff's review of the proposed technical specifications for the operation of Indian Point 2 the Regulatory

Staff not only had the opportunity to review the ecological program but indeed supplemented such program. Tr. 8883-89. Furthermore, the evidentiary record contains the Applicant's request for constructive advice from the Regulatory Staff concerning the Indian Point ecological study. Response to Staff Comments on Applicant's Research Program by James T. McFadden, April 24, 1973 (follows Tr. 11044) at 4-5. Although not reflected in the evidentiary record in this proceeding, the Hudson River Policy Committee has also specifically invited the Regulatory Staff to meet with the Policy Committee during discussions of the ecological study. Letter from Mr. Doig, Chairman of the Hudson River Policy Committee, to Dr. Oestmann, May 30, 1973.

14.d. The Regulatory Staff's response to this question reflects the Staff's utter misunderstanding of Consolidated Edison's ecological study. Consolidated Edison is sampling the entire spawning zone of the Hudson River striped bass. Testimony of Dr. James T. McFadden and Harry G. Woodbury on Indian Point Studies to Determine the Environmental Effects of Once-Through vs. Closed-Cycle Cooling at Indian Point Unit No. 2, Feb. 5, 1973 (follows Tr. 10608) at 24;

App. B to Facility Operating License DPR-26, Environmental Technical Specification Requirements for Once-Through Cooling, Aug. 9, 1973 at 4-21; Tr. 9463-64.

14.e. Applicant's research program is designed to determine the impact of Indian Point 2 operation on the Hudson River striped bass and not to evaluate each cause and effect relationship in the complex system of the Hudson River. It is unnecessary to evaluate each cause and effect relationship underlying each effect or response (e.g., survival) if one is able to separate plant-induced survival effects from all others (e.g., predation and starvation). See, e.g., Tr. 9500-05.

15.a. Applicant concurs with the Staff's determination that Applicant's research project will "establish whether or not there are dangers to fish populations in the Hudson River other than the striped bass." Applicant does not understand, however, the Staff's position that a study particularly designed, and so acknowledged by all parties, to evaluate the effects of Indian Point 2 operation on the striped bass and white perch populations of the Hudson

River will be successful with regard to other fish species but not to striped bass and white perch. Perhaps the Staff's position flows from Dr. Goodyear's inflexible position that "no five-year research program, no matter how competently and unbiasedly designed and executed, can conclusively lead to rejection or tentative acceptance of the null hypothesis that operation of Indian Point Unit 2 with once-through cooling, does not have an unacceptable adverse impact on the aquatic ecosystem, the striped bass population in particular." Redirect-Rebuttal Testimony of Dr. C. P. Goodyear, Consolidated Edison's Research Program at Indian Point, Feb. 22, 1973 (follows Tr. 9892) at 6.

15.b. The record amply supports the willingness of Consolidated Edison to "change [its] opinions on the matter of once-through cooling based upon the results of the research program." See, e.g., Testimony of Dr. James T. McFadden and Harry G. Woodbury on Indian Point Studies to Determine the Environmental Effects of Once-Through vs. Closed-Cycle Cooling at Indian Point Unit No. 2, Feb. 5, 1973 (follows Tr. 9405) at 1-2.

18. The Staff's admission that it has not attempted to balance the costs and benefits of several additional years of operation with once-through cooling underscores the Staff's failure to focus on the critical issue in this proceeding, i.e., will irreversible harm be done to the mid-Atlantic fishery while a research program is completed to determine whether a closed-cycle cooling system is required for Indian Point 2. The Staff's response further illustrates the Staff's inflexible position that Consolidated Edison's research program cannot and will not change the Staff's opinion on the matter of once-through cooling at Indian Point 2. (See Appeal Board Question 15.) As to the "important considerations which the Staff concluded will not be resolved on the basis of 1974 and 1975 data alone" (emphasis added), see Applicant's Proposed Findings of Fact and Conclusions of Law in the Form of a Proposed Initial Decision for a Full-Term, Full-Power Operating License, May 17, 1973 at 235-38 (Findings 022-023).

Although the record demonstrates that data produced from Con Edison's empirical study will permit a more reliable determination to be made of plant impact than can be derived

from modeling tools, the Staff for some reason is obsessed with a desire to design a "more reliable model" and continually evaluates the research program in such terms. A further enigma is the Staff's constant declaration that Consolidated Edison's research program is inadequate because particular information which would produce a "more reliable model" has been omitted while at the same time the Staff declares that the present models based on admittedly deficient data are sufficiently "reliable" to determine that an additional three and one-third years of once-through operation cannot be permitted.

19.a. Although natural fluctuations are relevant, Consolidated Edison's research program has been designed to separate such phenomena in order to determine the impact of Indian Point 2 operation on the Hudson River fishery. See, e.g., Testimony of Dr. James T. McFadden and Harry G. Woodbury on Indian Point Studies to Determine the Environmental Effects of Once-Through vs. Closed-Cycle Cooling at Indian Point Unit No. 2, Feb. 5, 1973 (follows Tr. 9405) at 28 and 32.

20. The Staff's statement that "a significant decline" could not be demonstrated for "at least 12 years" is utterly confusing. It appears that the Staff either has modified its previous position that the operation of Indian Point 2 will cause a 30-50 percent decline in the Hudson River striped bass population or now agrees with the Applicant that compensation is operative in the striped bass population. (See also Staff Response to Appeal Board Question 13.e.)

21. There is no evidence in the record to demonstrate that "'irreversible' harm is done by the plant-induced variation." The single citation to Dr. McFadden's cross-examination referenced by the Staff does not describe the "situation" at Indian Point 2 but rather was an illustration by Dr. McFadden of a hypothetical "serious situation." Tr. 11359-61. Furthermore, the Staff's general allegation that "[p]lant-induced variations are additive to natural variations and would be a continuing year-by-year stress on the population" is not supported by the evidentiary record. Rather, the evidentiary record supports the opposite

conclusion. Testimony of John P. Lawler, Ph.D. on the Effect of Entrainment and Impingement at Indian Point on the Population of the Hudson River Striped Bass, Modifications and Additions to Testimony of April 5, 1972, Oct. 30, 1972 (follows Tr. 6256) at 78.

24. See Applicant's Proposed Findings of Fact and Conclusions of Law in the Form of a Proposed Initial Decision for a Full-Term, Full-Power Operating License, May 17, 1973 at 225 (Finding 010).

Models

25. In order to determine whether competing risks of death from the different causes referenced by the Staff were represented adequately in a particular model, one must know the equations used to handle the particular probabilities and the conceptual foundation for such equations. In any event, since the Staff's model is completely linear (i.e., non-compensatory), the percentage impact due to entrainment is independent of natural mortality. Therefore, any mortality rate used will give the same result as would be obtained without the introduction of a natural mortality factor. It should be noted, however, that in the Staff's original model set forth in the FES all but nine cases reported employed no natural mortality. The Staff's supplemental model was introduced on March 8, 1973.

26. To suggest that biological models are more supportable than heat transfer models, from a standpoint of confidence in representing reality, is ridiculous.

27.b. The Staff's response blatantly ignores the complete set of references cited in footnote 023 of Applicant's

Proposed Findings of Fact and Conclusions of Law dated May 17, 1973. A review of the response to Question 2 contained in the document entitled Answers to Interrogatories of HRFA Addressed to Dr. James T. McFadden, April 20, 1973 (follows Tr. 11061), Question 2, demonstrates that not only is Applicant's Finding 019 supported by the evidentiary record but also that the Staff's allegation that "applicant did not make this claim until after the Indian Point Unit No. 2 Hearing was over" is wrong.

Environmental Impacts from Closed-Cycle Cooling

28. If facts concerning environmental and economic impacts or other aspects of constructing or operating closed-cycle cooling systems are significantly different from those reported in the Final Environmental Statement for Indian Point 2 issued in September, 1972, an environmental impact statement might have to be prepared by the Regulatory Staff.

29. In addition to the list of required approvals set forth by the Regulatory Staff in its response, local zoning approval from the Village of Buchanan, New York, will be required. See letter from Mr. Trosten to Chairman Jensch, June 1, 1973.