

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))

28-77

APPLICANT'S PROPOSED FINDINGS OF FACT
AND CONCLUSIONS OF LAW IN THE
FORM OF A PROPOSED INITIAL
DECISION WITH RESPECT TO MOTION FOR
50 PERCENT TESTING LICENSE
PART II

1. This proceeding involves the Application for Licenses filed by Consolidated Edison Company of New York, Inc. ("Applicant") for authority to operate a pressurized water reactor designated as Indian Point No. 2 ("Unit No. 2") at its Indian Point site in the Village of Buchanan, Westchester County, New York. ^{1/}

I. Environmental Considerations - General

2. During 1970 Applicant filed an environmental report in this proceeding and the Commission prepared and circulated a detailed statement of environmental considerations pursuant to the regulations then in effect, implementing the National Environmental Policy Act of 1969 ("NEPA"). On July 23, 1971, the U. S. Court of Appeals in the Calvert Cliffs case declared

^{1/}Application for Licenses, As Amended, Applicant's Exhibit No. 1A (introduced into evidence Tr. 377); Summary of Application, Applicant's Exhibit No. 1C (introduced into evidence Tr. 377), pp. 1-2.

these regulations invalid in certain respects as not in compliance with NEPA. Subsequently, on September 9, 1971, the Commission revised its regulations to bring them into conformance with the Court's decision; these regulations are found at 10 CFR Part 50, Appendix D ("Appendix D").

3. The review process required by Appendix D is now under way. Applicant has filed on September 9, 1971 a supplemental environmental report and has since further supplemented that report in response to developing requirements. A supplemental notice of hearing was issued on November 29, 1971, which specified environmental issues to be considered in the hearing. As of the time of submission of these proposed findings the Staff has not filed either a draft or final detailed statement under the new regulations.

4. Appendix D provides a procedure, in cases such as this one, for the issuance of licenses authorizing fuel loading and limited operation within the scope of 10 CFR Part 50.57(c), where the full NEPA review process has not been completed. Applicant has filed a motion for authority to test Unit No. 2 up to 50% full power pursuant to this procedure.^{2/} Such a motion may be granted after consideration and balancing on the record of three specified factors:

^{2/}Applicant has already requested and received a license to load fuel and conduct subcritical testing at Unit No. 2 (Operating License No. DPR-26, issued on October 19, 1971).

(a) Whether it is likely that limited operation during the prospective review period will give rise to a significant, adverse impact on the environment; the nature and extent of such impact, if any; and whether redress of any such adverse environmental impact can reasonably be effected should modification or termination of the limited license result from the ongoing NEPA environmental review.

(b) Whether limited operation during the prospective review period would foreclose subsequent adoption of alternatives in facility design or operation of the type that could result from the ongoing NEPA environmental review.

(c) The effect of delay in facility operation upon the public interest. Of primary importance under this criterion are the power needs to be served by the facility; the availability of alternative sources, if any, to meet those needs on a timely basis; and delay costs to the licensee and to consumers. 3/

5. Applicant has provided testimony in support of its motion on each of these factors. 4/ The Staff as well has conducted an evaluation of the proposed activities in the light of these factors 5/ and has concluded that, balancing the need for power in the public interest against the probable environmental impact of the proposed operation, the Applicant's motion should be granted. 6/

3/10 CFR 50 Appendix D, Section D.2.

4/Testimony of Applicant in Support of Its Motion for Issuance of a License Authorizing Limited Operation, dated October 19, 1971 (hereinafter referred to as "Limited Operation Testimony") (follows Tr. 4013).

5/Discussion and Conclusions by the Division of Reactor Licensing U. S. Atomic Energy Commission Pursuant to Appendix D of 10 CFR Part 50 Supporting the Issuance of a License to Consolidated Edison Company of New York, Inc. Authorizing Limited Operation of Indian Point No. 2, dated December 30, 1971 (hereinafter referred to as "Discussion and Conclusions") (follows Tr. 4412).

6/Id. at 50.

6. Hearings were held before the Atomic Safety and Licensing Board ("Board") on these matters on November 17, 1971, December 14, 1971, and January 11 and 12, 1972, at which further testimony was given by both the Staff and the Applicant. No party to this proceeding contests on nonradiological grounds the issuance of a license for operation at 50% of full power for testing purposes.

7. The nature and expected duration of the tests which Applicant wishes to conduct in accordance with its motion for authority to operate Unit No. 2 for testing purposes up to 50 percent of full power are set forth in the FSAR and Applicant's testimony. As shown in that testimony, the duration of the testing program is anticipated to be approximately 50 to 100 days.^{7/}

8. The Board has been considering the radiological aspects of Applicant's request for an operating license in hearings which have been held during the course of more than a year. In connection with this review the Board has also considered the radiological aspects of Applicant's request for a 50% testing license and has in this regard issued an initial decision dated _____, 1972. In that decision the Board has made findings favorable to the Applicant on the issues specified in 10 CFR 50.57(a) and has authorized the issuance of such a license subject to the _____

^{7/}FSAR, Sections 13.3.1 to 13.3.3; Limited Operation Testimony, pages 1-16.

prior approval of the Commission, since the request involves operation for testing purposes in excess of 20% of full power. The Board further, in accordance with the supplementary notice of hearing, has certified the record of the proceeding to the Commission for consideration and balancing of the factors specified in Appendix D, § D.2. This is an initial decision with respect to the matters specified in Appendix D, Section D.2.

9. Unit No. 2 is located on the east bank of the Hudson River at a point where the river is about a mile wide. Water depth within 100 feet of the site is variable, averaging 65 feet, and at some points exceeding 85 feet. The river at this point is classified as an estuary and the amount of salinity at Indian Point varies with the tides and the amount of fresh water flow. During peak tidal flow past the plant the tidal flow is about 80 million gallons per minute approximately 80% of the time. The net mean downstream flow due to runoff is in excess of 11,700,000 gallons per minute 20% of the time, in excess of 4,710,000 gallons per minute 60% of the time, and in excess of 1,800,000 gallons per minute 98% of the time.^{8/}

10. Fish and aquatic life are abundant in the area of Indian Point. Principal fish species found in this area are tomcod, striped bass, white perch, alewife, blueback herring and American shad. The area, like other parts of the river, is

^{8/}Supplemental Environmental Report, pages 2.1.3-5, and 2.3.2-1.

used for sport fishing and some commercial fishing.^{9/}

11. The principal potential adverse effects on the natural environment which are of concern for Unit No. 2 are associated with its condenser cooling water system. This unit will withdraw 870,000 gallons per minute from the river for cooling purposes at full flow conditions.^{10/} It has three main condensers each served by two circulating water pumps. There are 7 inlets flush with the river edge, six for the main circulating pumps and one partitioned for the service water pumps. Seven channels lead inward from the openings each containing a trash bar screen, a vertical fixed screen, a vertical travelling screen (except for one of the auxiliary service water pumps), and associated equipment for cleaning of screens.^{11/} Units 1, 2 and 3 share a common outfall structure, which is approximately 270 feet long. Heated water will be discharged through 12 ports spaced 20 feet apart, and the port structure is submerged to a depth of 12 feet (center to surface) at mean water. The ports are equipped with adjustable gates in order to regulate the discharge velocity of the water.^{12/}

^{9/}Tr. 4075-77; Supplemental Environmental Report, pages 2.3.6-1 through 2.3.6-5.

^{10/}Supplemental Environmental Report, page 2.3.3-1.

^{11/}Supplemental Environmental Report, Sections 2.3.3.1 and 2.3.6.4.

^{12/}Limited Operation Testimony, page 23.

II. Thermal Discharges

12. With respect to thermal effects the plant has been designed with a view to meeting the thermal criteria of the State of New York.^{13/} The Applicant has conducted extensive hydraulic and mathematical studies to assure that these criteria will be met. The results of these studies are set forth in reports which are in evidence in this proceeding.^{14/} They are confirmed by correlation of the results with experience at Unit No. 1.^{15/}

13. The temperature rise across the condenser depends upon the number of condenser cooling water pumps in operation, as well as power level. For the testing activities of up to 50% of full power, plans call for both 3-pump and 6-pump operation. While 3-pump operation at 50% of power would result in a temperature rise equivalent to that for full power operation there would be one-half the flow and one-half the heat load to the river. The Applicant has stated that the pumps will in no event be operated in such a manner as to exceed New York State thermal criteria.^{16/}

14. The heat load associated with 50% operation of Unit No. 2 would be one-half of that for full power operation. This,

^{13/}Supplemental Environmental Report, Section 2.3.3.5; Tr. 4421.

^{14/}Supplemental Environmental Report, Appendices J,K,L,M,N and O.

^{15/}Tr. 4426.

^{16/}Limited Operation Testimony, Section 4.0 (page 21); Tr. 4078-79.

plus the thermal discharge associated with Unit No. 1, would be the maximum heat load of concern here. There is no question that the thermal criteria of New York State can be met. ^{17/}

17/Tr. 4421-27.

III. Fish Impingement

15. Indian Point No. 1 over the years has experienced problems of fish impingement with its cooling water intake. Applicant has made many efforts over the years to solve this problem at Unit No. 1, including a number of design modifications. Those modifications which proved helpful have been incorporated at both Unit No. 1 and Unit No. 2. Nevertheless, this has been a persistent problem and one for which no ideal solution has yet been found. Over the past year and one-half Con Edison has been assisted in its efforts by a Fish Advisory Board, a panel of expert biologists and engineers from the United States and Great Britain. Efforts in this regard are still under way.^{18/}

16. Based upon Indian Point No. 1 experience and based on a limited amount of data available from tests of the Unit No. 2 pumps, it is anticipated that fish mortality will occur at the intake screens of Unit No. 2. Applicant has made predictions of the amount and type of fish expected to be impinged at Unit No. 2 during operation. The fish impinged are expected to be of a consistently small size (2 to 4 inches long and averaging around 1/4 ounce in weight) and to consist primarily of white perch.^{19/} The number predicted vary widely

^{18/} Supplemental Environmental Report, page 2.3.6-9, pages 2.3.6-22 through 30, and Appendix S; Tr. 4534-36, 4554.

^{19/} Limited Operation Testimony, page 46.

from season to season, the highest collections being expected to occur in the winter. The period of time now anticipated for testing activities will involve much lower collections. For example, during the spring months Applicant estimates from 3 to 21 pounds per day will be collected at Unit No. 2. ^{20/}

^{20/} Limited Operation Testimony, pp. 42-45; Tr. 4698-4700.

IV. Entrainment of Organisms

17. Recently concerns have developed as to the effect of power plants on the various types of non-screenable organisms which would be carried through the cooling water condensers. Fish eggs and larvae and phyto- and zooplankton will be carried by the cooling water flow into the intake structure of Unit No. 2. Applicant has instituted studies through the New York University Institute of Environmental Medicine to determine the effects on aquatic organisms of passage through the condensers. At least two consecutive years of such investigation are envisaged. The studies are being done utilizing the cooling system at Unit No. 1, and these studies will also be conducted on organisms passing through the Unit No. 2 condensers. The scope of the work includes studies in survival, extent of mechanical damage, thermal shock tolerance and effects on reproductive potential of entrained organisms. Effect on the productivity of the entrained phytoplankton is also under investigation. Consideration is being given to such aspects as recycling of already exposed organisms to the condenser passage, time required for passage through the condensers, exposure in the discharge canal and reproduction rates of organisms in the ambient water.^{21/}

18. The expected temperature rise through the condenser is about 8°F. for 6-pump operation (no de-icing loop), is

^{21/} Limited Operation Testimony, page 48; Tr. 4453-62.

about 16°F. for 3-pump operation (no de-icing loop) and is less than 26°F. for any of the potential operating modes for the testing activities proposed. Preliminary results of the current study of entrainment effects indicate no mortality to zooplankton due to condenser passage, but mortality (not yet quantified) to some fish larvae. Phytoplankton are not expected to be affected by the predicted temperature rise. ^{22/}

19. Studies are also being performed to determine the number of fish larvae which are entrained. Current results from these studies indicate that only a small percentage of such larvae will pass through the plant. ^{23/}

^{22/} Limited Operation Testimony, pages 44 and 49; Tr. 4453-62.

^{23/} Tr. 4470-72.

V. Dissolved Oxygen

20. Another area which has recently become of concern is the effect of power plant operation upon the dissolved oxygen content of the cooling water source. Applicant has conducted studies to determine what oxygen loss, if any, will result from operation of the Unit No. 2 cooling water system. Certain data developed at Unit No. 1 indicated that there might be an oxygen loss as high as several parts per million. Because this data was in conflict with other available data, Applicant investigated the measurement techniques and determined that the high readings were due to instruments being out of calibration. More recent and more carefully controlled measurements indicate that the oxygen loss will be very low, on the order of zero to .3 parts per million, as compared to an average level of dissolved oxygen in the river near Indian Point of 8.4 parts per million.^{24/}

^{24/} Supplemental Environmental Report, page 2.1.3-21; Limited Operation Testimony, page 25; Tr. 4428-30.

VI. Chemical Discharges

21. Certain chemical discharges will be associated with operation of Unit No. 2. Chemical effluents will be diluted by the circulating water so the chemical concentrations are reduced to levels well below those acceptable for discharge. Concentration limits have been set for chemicals to be discharged.^{25/} These limits were arrived at using relatively conservative estimates with respect to dilution water volume and neutralization effects. These limits have also been confirmed by extensive bioassay studies which have shown that no deleterious effect on biota is expected.^{26/}

22. Periodic chlorination of the cooling water condensers is proposed in order to prevent them from being fouled by slime and other biota. Chlorination is carried out by the addition of sodium hypochlorite to the water prior to entering the condensers. Applicant engaged in a program in connection with Unit No. 1 to establish the minimum chlorination required. As a result, chlorination is planned for Unit No. 2 to be carried out a maximum of three times a week for one hour at each exposure.^{27/} The discharge chlorine residual will be below the limit of 0.5 ppm. Normally, however, no chlorine residual

^{25/} Supplemental Environmental Report, page 2.3.4-7 and Section 2.3.4 generally; Limited Operation Testimony, pp. 40 and 41.

^{26/} Supplemental Environmental Report, page 2.3.4-6; Limited Operation Testimony, pp. 37-40.

^{27/} Tr. 4054-55; Discussion and Conclusions, p. 21.

would be detected at all at the discharge because of the chlorine demand of the river water. Chlorine would not be detectable in the river.^{28/} Applicant has developed procedures and controls to assure that chlorination is done in accordance with requirements.^{29/}

23. Applicant has conducted bioassays and comparative tests at the intake and discharge of Unit No. 1 which indicate that there will be no significant biological effect on the river from chlorination in accordance with the proposed procedures.^{30/}

28/ Tr. 4067-72, 4431-34.

29/ Tr. 4053-59, 4070-71.

30/ Tr. 4435-40, 4450-52.

VII. Radiological Considerations

24. Associated with operation of Unit No. 2 will be the routine release of small amounts of liquid and gaseous radioactive wastes. At full power operation these releases are estimated to be only small fractions of the limits set forth in 10 CFR Part 20.^{31/} For the testing operations proposed these releases will be significantly less than those for full power continuous operation, both because of the smaller fission product inventory present and because of the smaller amount of fuel leakage expected at this stage of operation. Furthermore, the radiological effects of various classes of postulated accidents have been calculated using realistic assumptions. These calculations indicate that doses would be very small fractions of 10 CFR Part 100 values.^{32/}

^{31/} Supplemental Environmental Report, page 2.3.7-1.

^{32/} Limited Operation Testimony, pp. 17-19; Discussion and Conclusions, pp. 19-20, 36-41.

VIII. Environmental Studies and Monitoring

25. Applicant has undertaken an extensive program of studies and monitoring in connection with the operation of the Indian Point units. These efforts include radiological monitoring of the air, land, water, and biological surroundings; monitoring of chemical and thermal discharges; an extensive sampling program for biota in the river; and a sampling program for chemical and thermal changes in the river itself. Other studies and their preliminary results are referred to elsewhere in these findings.^{33/}

26. The program for monitoring discharges has been established under the direction of the New York State Department of Environmental Conservation, which also makes an independent check on the monitoring carried out by Applicant.^{34/}

27. Operation during the proposed testing period will provide the opportunity for information to be gained under various of these programs to confirm predictions.^{35/}

28. The Staff has stated the opinion that the Applicant's environmental monitoring program is inadequate

^{33/} Tr. 4453-64; Supplemental Environmental Report, pages 2.3.6-8 through 2.3.6-22.

^{34/} Tr. 4532-34, 4590-92.

^{35/} Tr. 4470.

in certain respects.^{36/} Subsequent to this statement the Applicant provided additional information on the extent of its monitoring and environmental studies.^{37/} The Commission finds the Applicant's monitoring program acceptable for the proposed testing activities.

^{36/} Discussion and Conclusions, page 49.

^{37/} Tr. 4453-67.

IX. Biological Impact

29. From a radiological standpoint the effects on the environment of the proposed testing activities will be inconsequential. These operations will have no significant adverse effect on the land and air environment.^{38/}

30. Compliance with New York State water quality standards is a good indication that the environmental effect of thermal discharges is acceptable. Furthermore, Applicant has presented expert testimony to the effect that significant adverse effects from this source are not expected.^{39/} This conclusion is supported by the fact that the thermal plume for 50% operation will extend only across 15 to 20% of the river's width, and by a number of studies which show tolerance of the various species of biota to the temperature increments concerned.^{40/}

31. Due to the high abundance of fish in the river as a whole, and the fact that a very high mortality occurs naturally to the young fish, the fish collections at the intake referred to in paragraph 15 above during the proposed testing activities are not expected to be detrimental to the fish populations in the river. This is confirmed by the fact that Indian Point No. 1 has operated for a number of years without any apparent ill effect

^{38/}References in footnotes 31 and 32 above; Discussion and Conclusions, pages 6-41, 49, 50; Supplemental Environmental Report, Sections 2.3.1.1 and 2.3.7.

^{39/}Supplemental Environmental Report, Section 2.3.3; Limited Operation Testimony, pages 34-35; Tr. 4082-87; Tr. 4689-92.

^{40/}Tr. 4421-24; 4453-62.

on the fish populations of the river. In any event, any effect on the general fish population which were to occur due to limited operation would be temporary. The reproductive mechanism of the fish species involved is such that a very high mortality to young fish will not be detrimental to the ability of the population to maintain itself. In other words, there will be no irreversible effect on the populations involved.^{41/}

32. With regard to entrainment, as previously discussed, high survival is expected for organisms with the possible exception of fish larvae. Any loss of organisms which does occur as a result of condenser passage will have little ecological impact because of the large populations of these organisms present in the river, the rapid regeneration time of the plankton and because a relatively small proportion of the fish larvae in the river will be withdrawn. In any event, the testing operations proposed during the ongoing NEPA review will not have an irreversible ecological effect because any loss would be well within the capacity of the populations to replace.^{42/}

33. Finally, no adverse effect is expected from chemical discharges or oxygen depletion.^{43/}

^{41/}Limited Operation Testimony, page 47; Supplemental Environmental Report, page 2.3.6-30; Tr. 4700-4702.

^{42/}Limited Operation Testimony, page 49; Tr. 4470-72.

^{43/}Supplemental Environmental Report, page 2.3.4-6; Limited Operation Testimony, page 39; Tr. 4428-4430.

X. Foreclosure of Alternatives

34. Physical construction of Indian Point No. 2 will be complete at the time it is ready to achieve criticality. The testing operations proposed will have no effect on the feasibility or difficulty of adoption of various possible alternate ways of ameliorating nonradiological environmental impact. The only sense in which the plant will be significantly different as a result of the licensed activity is that the primary coolant system will be radioactive. Hence the subsequent adoption of modifications in the radwaste system might require some work on radioactive systems. Such work is routine and the difficulty of accomplishing such modifications will not be substantially increased. Thus the licensed operation at 50% power would not foreclose subsequent adoption of alternatives to facility design or operational procedures of the type that could result from the ongoing NEPA review.^{44/}

^{44/}Limited Operation Testimony, page 51; Discussion and Conclusions, pages 42-43.

XI. Effects of Delay Upon the Public Interest

35. Over the past three years Applicant has been faced with an unprecedented and continuing crisis in supplying electricity to the communities which it serves. Shortages of available power have resulted in frequent appeals for voluntary load reduction, numerous voltage reductions, and, on one occasion in 1970, the disconnection of service to about 30,000 of Applicant's customers. Applicant's problems have not been limited to the summer season. Measures to reduce load have also been required in the early fall.^{45/}

36. Despite continuing efforts to add new capacity and obtain power from other sources, Applicant has been unable to maintain its reserve margin at an acceptable level. Although some other new generating capacity is scheduled for service in the 1972 summer, it is clear that without Unit No. 2 the situation for that summer will be as bad as or worse than it has been in the past. With Indian Point No. 2 on the line, Applicant's reserve after steam system requirements is estimated to be 22.0%. It is at this level, and greater levels, of planned reserve that Con Edison has experienced difficulties for the past three years. The 22.0% figure also assumes availability of Con Edison's share of Bowline Point Unit No. 1 and 348 megawatts from new gas turbines, both under construction and scheduled to go on line in July 1972.

^{45/}Limited Operation Testimony, pages 52-56; Tr. 4716-17.

If Indian Point No. 2 is not available, Applicant's reserve margin would be cut almost in half, to 11.6%. This margin would be even smaller in the event of a delay in completion of Bowline Point Unit No. 1 and/or the new gas turbines.^{46/}

37. Alternative sources of power sufficient to replace the capacity represented by Unit No. 2 are not available. Construction of other new units could not take place in time to meet 1972 requirements. This includes gas turbines, which require a construction lead time of one year or more.^{47/} Sufficient additional firm power purchases are not likely to be available, over that which Applicant has already obtained, to replace the capacity that Unit No. 2 would provide.^{48/} Finally, while emergency purchases may be available at critical times, these cannot be relied upon to replace generating capacity or firm power purchases.^{49/}

38. Without the requested license authorizing limited operation for testing purposes, because of the expected duration of the pending NEPA review it does not appear to be possible for Unit No. 2 to be on line for any part of next summer's

^{46/}Limited Operation Testimony, pages 57-59; Tr. 4542-43, 4716-21, 4723.

^{47/}Limited Operation Testimony, page 60; Tr. 4740.

^{48/}Limited Operation Testimony, pages 60 and 61.
Tr. 4573-74, 4722-23, 4726-28, 4732-35, 4742-43.

^{49/}Limited Operation Testimony, page 61; Tr. 4735-37.

peak load period. The likely effect of not having a license for testing purposes up to 50% of full power will be to delay the operation of the unit by approximately 50 to 100 days.^{50/}

39. The availability of Unit No. 2 is also critical to the reserve margin of the New York Power Pool, of which Applicant is a member. The following quotation from a letter from the Federal Power Commission dated October 15, 1971 indicates the regional implications of delay of Unit No. 2:

"Indian Point Unit No. 2 (873 MWe) represents about 20% of the necessary New York Power Pool reserve which was anticipated to be 4,207 MWe during the summer of 1972. The reserve with Indian Point Unit No. 2 in service would be 21% of the projected load but it should be remembered that in the past several summers the New York Power Pool, and Consolidated Edison in particular, have had difficulty supplying the load even with slightly more than 21% reserve. If Indian Point Unit No. 2 is delayed beyond the summer of 1972, the expected reserve would be 16.6%. The problem is further compounded because the New York Power Pool has a total of 986 MWe of fossil generation scheduled for June of 1972 and 348 MWe of gas turbine capability scheduled for July which has been counted as part of the Pool reserve. If this generation is delayed or experiences difficulties during startup and is not available for the summer peak, the reserve falls to 2,000 MWe or about 10%. The result of this reduction in reserves would probably result in power supply problems considerably more severe than New York City has experienced in the past several years." ^{51/}

The New York Public Service Commission has expressed similar concern about the situation.^{52/}

^{50/}Tr. 4703-09.

^{51/}Discussion and Conclusions, page 45.

^{52/}Supplemental Environmental Report, pages 2.1.4-2 and 2.1.4-9; Limited Operation Testimony, page 64.

40. Even if for construction or testing reasons Unit No. 2 is not available for any part of the summer of 1972 the record shows that it is badly needed during the fall of the year. This is because maintenance must be performed during this season on other plants. The lack of availability of Unit No. 2 would cut down substantially on the maintenance which could be accomplished, which would severely reduce the reliability of Applicant's system to serve its customers' needs in the winter of 1972-73 and the summer of 1973.^{53/}

41. The costs of delay to Con Edison, and to its customers, during the period of ongoing NEPA review if limited operation is not authorized as requested, will consist of about 3.5 million dollars per month, the estimated cost of incremental operation and maintenance and out-of-pocket cost of replacing energy which would otherwise have been produced by Unit No. 2, plus almost one million dollars per month, the amount of interest during construction which would accrue during the period of delay.^{54/}

42. Delays in the operation of Unit No. 2 will result in increased emissions of air pollutants in the New York City area for an equivalent period due to the necessity of replacing its output by operation of fossil-fueled units, many of which are old and unreliable.^{55/}

^{53/}Limited Operation Testimony, page 64; Tr. 4718-21.

^{54/}Limited Operation Testimony, page 64; Tr. 4543-44, 4724-25.

^{55/}Limited Operation Testimony, pages 64-66; Tr. 4738-40.

XII. Conclusions

43. The environmental effects of limited operation of Unit No. 2 will be primarily associated with its condenser cooling water system. These effects are expected to be localized, and on the basis of data currently available significant effects on the overall ecology of the river are not expected. However, even if such effects were to occur they would be temporary and the populations involved would undoubtedly recover in a short time. Alternatives which may be required as a result of the ongoing NEPA review will not be foreclosed. On the other hand, the consequences of delay in plant operation are serious, both in terms of the need for power from the plant and in terms of the financial and environmental costs of delay. Upon consideration and balancing of the three factors listed in paragraph 4 above, the Commission has determined that operation for testing purposes up to 50% of full power as requested by Applicant should be authorized. The Commission further finds that an emergency situation (and in any event a situation where the public interest requires) exists which justifies such authorization in excess of 20% of full power.

WHEREFORE, in accordance with the foregoing it is ordered this _____ day of _____, 1972 that the Director of Regulation be authorized, in accordance with this initial decision and the initial decision and order of the Board

dated _____, 1972, to issue to the Applicant an amendment to its operating license DPR-26 authorizing operation of Unit No. 2 for testing purposes at power levels up to 1379 MWt (50% of full power), such amendment to be substantially in the form of Staff Exhibit _____ in this proceeding; and it is further ordered that in accordance with 10 CFR Sections 2.760, 2.762 and 2.764, this initial decision, good cause not having been shown to the contrary, shall be immediately effective and shall constitute the final decision of this Commission forty-five (45) days after its issuance, subject to the filing of exceptions and further review and ruling by the Commission thereon. Exceptions to this decision and supporting briefs may be filed by any party within twenty (20) days of service of this initial decision and briefs may be filed by any other party in support of or in opposition to any exception within ten (10) days after service of such exceptions.

Respectfully submitted,

LeBOEUF, LAMB, LEIBY & MacRAE

By Leonard M. Trosten
Leonard M. Trosten
Partner

Dated: February 8, 1972