50-286

STATE OF NEW YORK
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
ALBANY

RONALD W. PEDERSEN
FIRST DEPUTY COMMISSIONER

December 17, 1973

Dear Sir:

The State of New York has completed its review of the "Draft Environmental Statement Related to Operation of Indian Point Nuclear Generating Plant Unit No. 3", (Docket No. 50-286). The statement was prepared by the Commission's Directorate of Licensing and issued in October 1973.

In preparing the attached comments, we have taken into consideration the views of all appropriate State agencies including the New York State Atomic Energy Council and the Office of Parks and Recreation. Many of the comments are quite detailed and directed to very specific points in the draft environmental statement with the intent of clarifying and improving the Commission's final environmental statement. While we have many comments on this statement, it is felt the draft environmental statement is an exceptionally well prepared document.

The Staff conclusion requiring a closed-cycle cooling system on Unit 3 is similar to the Staff position on Indian Point Unit No. 2, which was upheld in the decision of the Atomic Safety and Licensing Board. Since the combined environmental impact due to the operation of Units 1, 2, and 3 cannot be fully assessed at this time, and since the cost of a closed-cycle cooling system retrofit on the Indian Point Units is very expensive, it is felt that the Commission Staff conclusions are appropriate, but should be modified to provide that whenever Con Edison believes it has accumulated information which can demonstrate that the operation of Unit No. 3 in conjunction with Units 1 and 2 will not result in an unacceptable, long-term irreparable damage to aquatic biota, or contravene the water quality standards of the State of New York, the applicant should be allowed to seek appropriate modification to the operating license.

3119

Particular attention should be devoted to our specific comments concerning seismology and geology. It appears that the most recently available information has not been utilized.

Thank you for providing the State with the opportunity to comment on this environmental statement.

Sincerely,

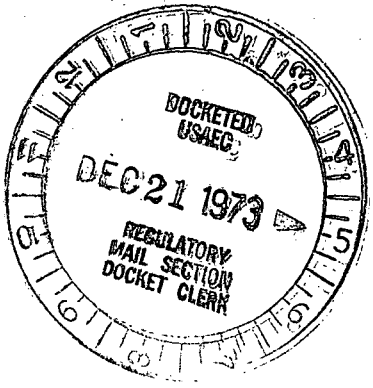
Ronald A. Eaton

Enclosure

United States Atomic Energy
Commission
Washington, D. C. 20545

Attention: Deputy Director for
Reactor Projects,
Directorate of Licensing

Regulatory File Cy.



COMMENTS OF THE STATE OF NEW YORK ON THE U. S. ATOMIC ENERGY COMMISSION "DRAFT ENVIRONMENTAL STATEMENT RELATED TO THE OPERATION OF INDIAN POINT NUCLEAR GENERATING PLANT UNIT NO. 3: (DOCKET 50-286)

1. General Comment - In the proceedings for a construction permit for Nine Mile Point Unit No. 2, the Commission has recently ordered the Atomic Safety and Licensing Board (ASLB) to consider the conservation of energy.

   It is therefore appropriate to include a thorough discussion of the conservation of energy in the Final Environmental Statement for the Indian Point Unit No. 3.

2. General Comment - The Commission staff should consider alternate use of the rejected heat from plant operation. In this time of energy crises, the wasteful disposal of heat which could be used for heating homes and businesses, used in the production of food, etc., does not appear to meet those goals of NEPA presented in the FOREWARD.

3. General Comment - Appropriate meteorological and climatological data (Section II.E.4) have been compiled and presented for the environmental impact evaluation. These data have been compiled over several years since Indian Point Unit No. 1 was first planned. However, the continuous maintenance and compilation of data has not been as conscientious as it should have been and so, there are gaps in the data. It is to be noted that updating of the meteorological observation program is planned for subsequent detailed evaluation of cooling tower impact.

   The diffusion analysis techniques used are in accordance with conservative procedures established by the U. S. AEC.

4. General Comment - The evaluation of impact on climate (Sections V.B.1 & 2) is based on once-through cooling and hence is limited to the potential formation of fog on the warm water surface and shoreline.

   The evaluation of impact on air quality (non-radioactive) addresses the appropriate control agency standards of ambient concentrations and emissions. However, it is not clearly indicated that these standards are met when the superheater and all of the boilers are operating.

5. General Comment - The report mentions the effect on aquatic life due to the heated water. There should be more discussion of the effects on aquatic life when there is a shut down of a unit and the heated discharge is diminished or completely stopped.

6. General Comment - The preliminary evaluations of the alternative heat dissipation systems (Sections XI.C.1 - 5) are appropriate and it is indicated that further comprehensive evaluation of a preferred closed-cycle cooling system will be conducted based upon current research programs by the AEC and a revised environmental monitoring program to be conducted at Indian Point specifically directed toward this evaluation.

7. General Comment - Inadequate information is given in the Draft Environmental Statement to assess the noise impact that the operation of Unit 3 will have on the adjacent community. To determine the effect on the adjacent community it is necessary to compare predicted plant levels with existing ambient levels and criteria for determining human response to noise.

Existing Ambient Levels

An adequate sampling of existing ambient sound levels must be obtained for all areas of potential impact. Such a sampling should consider daily, weekly and seasonal variations. The ambient noise survey referenced in the Draft Environmental Statement reports statistical sound level data obtained on two winter weekdays at six locations.

Predicted Plant Levels

Since the proposed license may require eventual conversion to closed cycle cooling, predicted plant levels should be developed not only for Unit 3 with once-through cooling, but for the proposed alternate cooling methods as well. Predictions should consider directionality of the source due to plant layout, and abnormal sound propagation due to terrain, prevailing winds in the river valley, and due to other atmospheric conditions since there is a "high probability of inversions occurring" (page V-5).

The Draft Environmental Statement reports simply that "no significant additional noise levels will be created by operation of Unit No. 3 along with the other two units"

(page V-3); no sound [redacted]els are given for Unit 3 with [redacted]e-through cooling. Sound levels are reported for two alternate cooling methods; 50dBA at 2500 feet for natural-draft wet cooling towers, and 50dBA at 5000 feet for mechanical-draft wet cooling towers. Inadequate attention is given to directionality of the source and abnormal sound propagation.

Transmission Line Noise

Since the operation of the Indian Point Stations will necessitate "upgrading of transmission facilities" (page IV-3), specifically, increasing some transmission line voltage from 138KV to 345KV, an analysis of noise and other environmental effects of the higher voltage line should be included in the Environmental Statement.

Human Response to Noise

Since the Statement recommends comparison with HUD criteria, the appropriate form for presenting information on human response to Indian Point Unit 3 noise is a series of contours delineating the areas which are unacceptable, normally unacceptable, normally acceptable, and acceptable. The study referenced by the Draft Environmental Statement gives only the total area within the normally unacceptable contour, and the number of residents presently living within that area.

8. Page i Summary and Conclusions -

What is meant by the following statement on Page i: "The proposed action will be interrelated to other actions taken by other Federal agencies such as the Environmental Protection Agency in regard to granting or denying application for discharge permits by the New York State for the other power plants on the Hudson River."

9. Page ii Summary and Conclusions -

Estimated dates for completion of the 80-acre forested park, completion of the new visitors center, transfer of 14 acres to Village of Buchanan, and development of the marina should be stated. Also, the present status of these lands should be discussed.

10. Page iii Summary and Conclusions 3.f. - Since the Federal licensing is complete for the proposed Cornwall Pumped Storage Plant, the environmental effects from operation of the Cornwall plant must be included with those of Danskammer, Roseton, Lovett, and Bowline and Indian Point to ascertain the synergistic effects that power plants have on the Hudson River in this area.

11. Page viii Summary and Conclusions, 5. - Since the action to be taken is administrative, consideration should be given to other administrative alternatives, such as, issuance of a provisional operating license instead of a full-term license.

12. Page I-8 - Future Environmental Approvals - It is stated that discussions are underway for obtaining a 401 certification pursuant to the Federal Water Pollution Control Act Amendments of 1972. A 401 certification was issued by the N.Y.S. Dept. of Environmental Conservation on September 24, 1973 for full power operation of Unit 2.

13. Page I-10 - The description of the composition and functions of the Hudson River Policy Committee is in error. Connecticut has not been a member of the Committee for several years. The Technical Committee is a subordinate committee created by and serving at the pleasure of the Policy Committee. The Policy Committee does not serve as a Study Steering Committee for the Indian Point work. The Committee does not outline ecological studies and present its conclusions and recommendations to Con. Edison The Committee does review proposed work as presented to it by the Company and advises as to its "quality and importance to providing information on fisheries impact" (P. 3 of A.G. Hall's letter, Jan. 11, 1973).

14. Page II-3, Section II, The Site, - It is noted that the applicant plans to build a new visitor's center near Unit No. 1 and to maintain an 80 acre forested area and lake for recreation in the northern portion of the site. This statement should be expanded to note when the applicant proposes to initiate action to accomplish this intent, and when the facilities are projected to be available for public use.

15. Page II-5, Regional Demography and Land Use - The Stewart Air Force Base has been decommissioned and the bulk of the facility transferred to the Metropolitan Transit Authority and is now known as the Stewart Airport.

16. Page II-15, Section II E.3 - Certain aspects of the discussion on geology and seismology are inadequate. The 1971 New York State Geology Map was not used in preparation of this draft environmental statement. This map is the most recent presentation of geologic formations of the area. It shows large significant faults near the Indian Point Site.

The details of the drilling logs by Paige and Fluhr are not shown. In the absence of such information it must be assumed that sound geotechnical data is not available. The Fluhr and Paige analyses appear in conflict with that in Section 2.7 of the applicant's Final Facility Description and Section II.E.3 of this draft environmental statement regarding rock strength, grouting, and local changes in rock formation. The discussions presented in this statement are in apparent contradiction of the consultants recommendations.

In summary, the site geologic and seismologic investigations appear inadequate and the Commission staff presentation concerning these topics is equally deficient. In reviewing the applicants reports, the recently issued staff Safety Evaluation, and this draft environmental statement, we notice there has been a lack of, or neglect of, information.

It is recommended that the Commission staff reassess the geology and seismology:

1. Referring to an article in the bulletin of the Seismological Society of America, Volume 58, No. 2, pages 681-687 published in April 1968 and titled "Seismology In the Vacinity of the Ramopo Fault, New York-New Jersey."

2. Referring to an article in the Journal of Geographical Research, Volume 788, No. 5, February 1973, "Seismic Wave Attenuation and Magnitude Relations for Eastern North America."

3. Require rock stress analysis be performed at and near site (e.g. by means of overcoring in deep boreholes).

4. Require Re-examination and Detailed logging of all boreholes to determine the depth extent of jointing, and possibly mapping of the joint patterns to determine what stresses have been released.

5. Establishing a quadrilateral system of survey points across the river and across the Ramopo Fault to ascertain if there is any small movement.

17. Page II - 15, Section II, the Site - Under Geology and Geography it is noted that the three reactors are built on a hard, dark grey, metamorphosed diomitic limestone. It is recommended that this sentence be changed to read "the three reactor plants" or "all structures" are built on a hard, dark grey, metamorphosed diomitic limestone. The fourth sentence notes that the bedrock is more than capable of carrying any load that will be placed on it at the site. This statement should be expanded to note the approximate load which the bedrock will support and the actual load which is imposed.

18. Page II-16, Section II, The Site - The State has commented in the past on the Indian Point site regarding the inadequacy of the geologic and seismologic investigations conducted by the applicant. The State Geological Survey's position regarding the content of the Geology and Geography section (Pages II-15 and II-16) of the Draft Environmental Statement is that it is not adequate for evaluation purposes. For example, Paragraph 2 on Page II-16 is essentially a quote from comment 13 provided to the U. S. AEC by the New York State Department of Environmental Conservation on June 1, 1972 relating to the Draft Environmental Statement for Indian Point Unit No. 2. Although that statement of geology was quoted, the comments relating to additional seismic and geologic investigations were apparently ignored. These comments, which still apply to the site and to Indian Point Unit No. 3, are reiterated as follows:

a. For power plant siting an investigation should be made involving a seismic monitoring program with analyses of focal mechanisms to determine whether the motions observed correlate both geographically and geometrically with known faults. It can be anticipated that this kind of study will be required for future site investigations and that more detailed geologic mapping will be required.

b. The Environmental Statement should include detailed geologic investigations of the entire region to fill in the gaps in existing data. The geologic reports by T. W. Fluhr, P. E., and S. Paige by themselves are not considered to be

sufficient for basing decisions on power plant siting in the region around Indian Point.

In addition, no discussion of the seismology of the site and the area is included in the Draft Environmental Statement. In Dr. W. R. Stratton's letter of May 16, 1973 to the Chairman of the U. S. AEC he indicated a need for seismic hazard evaluation in the Eastern USA. Thus, seismic data should be included in the Final Environmental Statement for evaluation purposes.

19. Page II-20 - The section describing the ecology of the site and the environs should be expanded. Ecological parameters such as diversity indices, biomass, productivity and indices of stability should be discussed. Such ecological parameters would aid in assessing the effects of thermal and radiological discharges.

20. Page II-20, Section II, The Site - The discussion under terrestrial ecology should note that the applicant has stated that no rare or endangered species of plants or animals were found during their site survey or their literature search regarding the site area.

21. Page II-29 - The section on background radiological characteristics states there are no conspicuous natural sources. There are small areas to the north and northwest within a 5 mile radius of the site where the maximum external radiation level measured by New York State was 5 times normal background due to natural radioactivity. It may be well to identify these locations as they may be attributed to the operation of the plant at some later date. An ARMS survey similar to those done for other sites is recommended. The sources of radioactivity, such as cosmic radiation, that comprises the 125 millirems /yr measured dose rate should be identified.

22. Page II-30, Background Radiological Characteristics - It is stated that the New York State Department of Environmental Conservation has also carried out periodic checks since 1958 on samples taken from various locations surrounding the site. This statement should be revised to indicate that the monitoring program was conducted by the New York State Department of Health until mid-1970, and thereafter by the New York State Department of Environmental Conservation.

23. Page II-31 - Table II-[redacted]ists selected representative s[redacted]ble data from the Radiological Environmental Monitoring Program taken in the area of Indian Point Unit No. 1. It would be well to identify the dates of these data as Indian Point Unit No. 1 operated during periods of high fallout and some of the activity reported may be attributed to other than plant operation.

24. Page III-1, Section III, The Plant - The second paragraph notes that cooling water is withdrawn from the Hudson River at a maximum rate of 840,000 GPM through pumps at full capacity and at 30,000 GPM for service water purposes. This Section should be expanded to note the number of cooling water and the number of service water pumps which are required and installed for this maximum flow. It should also be noted that the cooling water pumps are two speed.

25. Page III-1, Section III.B - External Appearance - The Draft Environmental Statement should discuss the external appearance of the transmission facilities associated with the plant and their visual intrusion on the neighboring communities.

26. Page III-5, Figure III-2 - The service water pump should be labled, since it is discussed in various paragraphs of Section III.

27. Page III-6, Section III, Intake System - It is stated that there is only one service water pump for Unit No. 3. This section should discuss how service water is provided to wash the traveling screens if the service water pump is out of commission.

28. Page III-9, Section III.E.2 - Intake System - It should be stated whether the traveling screens will be continually rotated or only periodically rotated. The velocity of the water used to clean the traveling screens should be stated. Also, the draft environmental statement should discuss the effects of severe weather conditions on the operation of the intake system. For example, can the traveling screens be operated during severe winter conditions or will they ice up? Also, when the traveling screens remain idle in severe cold weather, can they be immediately operated or is there a delay time due to ice buildup on the screens and drive mechanisms?

29. Page III-13, Section III, Discharge Structure - It is stated that ten of the twelve installed exit gates will be manually adjusted to provide a discharge water velocity of at least 10 FPS under any combination of units in operation and for different river

conditions. A discussion should be included which describes how it is known that adjustment of the gates results in an exit velocity of at least 10 FPS.

30. Page IV-4, Section IV, Impacts on Water Use - This section notes that air bubblers to reduce fish impingement were required by New York State to be installed at the intakes in front of the fixed screens for Units No. 1 and 2, but that none are presently at the Unit No. 3 intakes. It is felt that this section should be expanded to note the general effectiveness of the air bubblers and whether or not it is anticipated that they will be installed at the Unit No. 3 intakes.

31. Page V-1, Section V.A.1. - Aesthetics - The Commission's condition of operation of an alternate closed-cycle cooling system required of the applicant will impose a further visual impact on the environs which should be considered.

32. Page V-3, Section VI.A. 3 - Noise - One of the most predominant sources of noise at the site is the outdoor loud speaker system. Noise levels associated with this system should be determined and once construction is complete, consideration should be given to eliminating or minimizing use of this outdoor system.

33. Page V-3, Section V.A. 5 or Section V.B. 2 - Transmission Facilities - The Environmental Protection Agency, on page 18 of its comments concerning the Draft Environmental Statement relating to Indian Point Unit 2, suggested a discussion of the production of ozone by the high-voltage transmission lines.

It is understood that research is being performed under contracts from the electrical power industries and EPA to answer the ozone production question. A discussion should be presented in this statement concerning ozone production and the results of these studies to date. Also, the statement should contain a discussion of, or references to, problems of induced electricity to structures in the vicinity of EHV transmission lines.

34. Page V-6, Section V.B. 2 - Paragraph 4, indicates the expected contribution to the environmental concentrations from "the boilers of all three units". This seems to indicate that the superheater is not included in this evaluation. If this is so, then the evaluation is deficient. If the superheater is included, then the statement should indicate this.

35. Page V-6, Section V.B. 2, paragraph 6 - Quantitative evaluation compliance with the emission standards is presented only for the superheater. The evaluation for "total amounts of all non-radioactive emissions" should be presented quantitatively.

36. Page V-21, Table V-3 - Footnote (c) should indicate that the New York State Department of Environmental Conservation is the agency requiring collection of all chromium discharges.

37. Page V-28, Section V.C. 4 - Although the velocity of water entering the intake structure may have a minimal effect on boating activities, the impact of the facilities on the Hudson River fishery may have indirectly a greater effect on boating activities on the Hudson River.

38. Page V-33, Section V.D. 2.a. - If, with a similar intake design Units 1 and 2 necessitated the use of fixed fine screens at the intakes, it appears that at least fixed fine mesh screens should have initially been designed for the Unit 3 intake.

39. Page V-36, Section V.D.2.a - The statement is made,"In summary, although the impingement problem has existed at Indian Point Unit No. 1 since operation began in 1962, some 10 years ago, the applicant still has neither determined the causative factors nor elucidated any methodology that will establish the cause-and-effect relationships controlling the impingement at Indian Point." It is felt that a methodology that will establish the cause-and-effect relationships controlling the impingement at Indian Point should be ascertained by the Commission staff and the studies incorporated in the Environmental Technical Specifications for these plants.

40. Page V-52, 4th paragraph - This statement may attribute a greater influence to temperature as a factor in selecting spawning site than is justified when considering other factors such as salinity.

41. Page V-55, Section V.D.2.c (3) - The report mentions the possibility of low dissolved oxygen (D.O) in the effluent plume. However, there is no discussion on the effect to the D. O. content in downstream waters. There have already been recorded in the summer months some values of D. O. at Verplanck less than the 4.5 ppm figure noted in the report. The Department of Environmental Conservation maintains an automatic

sampling station at V[redacted]planck and a complete record of [redacted]e data may be obtained. The report mentions that aerators could be used in the discharged cooling water to alleviate low D. O. The ability of water to hold oxygen diminishes as the temperature rises. It is also noted that the ability of water to hold oxygen also diminishes as the concentration of chlorides increases. During the low flow summer months the chloride concentration in the Hudson River at Indian Point would be at its peak. Therefore, because of the high temperature and high chloride concentration expected, the placing of an aerator in the heated water could have very little effect on D. O. content simply because the effluent water will not have the ability to hold any additional oxygen.

42. Page V-65, Section V, Chemical Discharges - The last paragraph states that chromium discharges will be collected and treated prior to any release in the river. This statement should be expanded to note the concentration of chromium expected to be discharged and the effect of the release on the aquatic biota of the river.

43. Page y-100, Section V, Liquid Wastes - This paragraph notes that if the radioactivity exceeds a predetermined value, the discharge will be automatically stopped by a valve on the discharge line and the liquid effluent will be recycled for further treatment. It is felt that this statement should be expanded to note this predetermined value and, in addition, note that there is an audible alarm (Environmental Report) associated with the radioactivity approaching this predetermined value.

44. Page V-103, Section V. D.2.e - It is not clear why the Commission staff allow programs in the Environmental Technical Specifications which are considered misleading, at best. For example on P.V-102 it is stated that "The Environmental Technical Specifications will detail the specific sub-programs"; while on P.V-103 it is stated about aquatic research programs which are part of the Unit #2 Environmental Technical Specifications:

> "In effect, the applicant has formulated his hypothesis in a way that allows the applicant to derive benefit from poor experimental design or careless execution of the required sampling."

Page V-104, 2nd paragraph - We agree with AEC staff on the need to continue the

the research program to show compliance with the Technical Specifications and to monitor biological effects.

45. Page V-III, Figure V-17 - It is not clear from the Figure whether the liquid radioactive waste from the waste condensate tanks and from the blowdown treatment equipment flows into a common header or each flows directly into the discharge canal. In addition, the automatic stop valves discussed on Page V-100 should be shown in each discharge line.

46. Page V-113, Section V, Steam Generator Blowdown - The last paragraph states that the turbine building drains will be discharged to the discharge canal without treatment. This statement should be expanded to note that these drains are not radioactive, and to describe how non-radioactive pollutants such as lube oil are prevented from being discharged to the river via the turbine building drains.

47. Page V-142, Transport of Solid Radioactive Wastes - The applicant estimates that from 5 to 10 truckloads of waste will be shipped from Unit No. 3 annually. Using these values as a basis, the U. S. AEC estimates that an average of 23 truckloads will be shipped from Units Nos. 1, 2, and 3 each year. It is further noted, however, that using present experience of operating reactors, the U. S. AEC estimates that about 50 truckloads of waste will be shipped from Units Nos. 1, 2, and 3 each year. It is not clear why the lesser figure (23 truckloads) alone is used in Section 2.C (pages V-145 and V-146) and in Table V-17 "Summary of annual exposure..." (page V-147) to estimate annual exposure of humans during the transport of radioactive waste.

48. Page V-142, Section V.F.b - It is stated under "Transport of Irradiated Fuel" that the applicant estimates "at most three fuel elements per cask" will be shipped. The present shipping cask designs will only accept one pressurized water reactor spent fuel element in a cask designed for shipping by truck. Therefore, the number of truck shipments would be 170 per year rather the 57 predicted by the staff.

49. Page V-143, Principles of Safety in Transport - This section states "The procedure the carrier must follow in case of accidents include segregation of damaged and leaking packages and the notification of the shipper and the DOT." It is not clear

whether "segregation" was meant to imply physical handling of the damaged and leaking packages, or simply having personnel avoid contact with the damaged and leaking packages.

50. Page V-145, Irradiated Fuel - It is noted that, for combination truck-rail shipments, the U. S. AEC staff estimates that during transfer of the cask from the truck to the rail car, four men might work for an hour at an average distance of 6 ft., and might receive individual doses of approximately 10 mrem/hr. Using 26 such shipments from all three units, the AEC has estimated a total dose of 0.840 man-rem for the freight handlers. It appears that this total dose figure should be 1.040 man-rem.

51. Page VI-9, Severity of Postulated Transportation Accidents - It is noted that an extensive program has been carried out over the past several years by which emergency personnel have been advised of procedures to follow in accidents involving radioactive materials and other hazardous materials. New York State concurs in the need for training of these emergency personnel. It is considered that the significant details of this training program should be expanded upon in the Draft Environmental Statement, and that the plans for carrying out this training on a continuing basis should also be discussed.

52. Page VII-1, VII-5, etc., Section VIII - One of the adverse environmental effects which cannot be avoided is noted to be the discharge of toxic amounts of residual chlorine or chloramines to the Hudson River incident to prevention of fouling of the circulating water system, and significantly the condenser tubes. It is recommended that this section be expanded to include a discussion of why high pressure water flushing and/or mechanical cleaning cannot be employed to prevent the cooling system from becoming fouled .

53. Page VII-2, 2nd paragraph - If the facility alone will have an adverse visual aspect; the addition of two cooling towers will greatly compound this impact.

54. Page VIII - 3, 12 Line - We are not aware of any evidence to date by which to evaluate the significance of a reduction in other fish populations, such as white perch.

55. Page VIII 3, Last Line - We agree that two years of post operational experience with once-through cooling will not be adequate to assess the long-term impacts of this method.

56. Page X-16, Section X.H, Assessment of Predicted Demand - This Section should contain a discussion of the effects of the present energy crisis on the Con Edison service territory. The results of an effective national energy conservation program and possible shifts from gasoline powered vehicles to electric powered modes of transportation should also be included.

57. Page X-18, Section X.I, Applicant's Ten-Year Plan - This Section should reference the "1973 Report of Member Electric Corporations of New York Power Pool and the Empire State Electric Energy Research Corporation pursuant to Article VIII, Section 149-B of the Public Service Law, August 1973." This report, although needing improvement, is the most recent and comprehensive discussion of the State electric corporations' long-range plans.

58. Page XI-1, Section XI.A.1., Purchased Power - The power from the James A. FitzPatrick Nuclear Power Plant will not be available for purchase until at least its initial operation which will be mid-1974 at the earliest.

59. Page XI-17, Section XI.C.3c. - The staff should include a fourth alternative heat rejection combination of the Indian Point Units which would consider operating all three units with a natural draft-cooling tower.

60. Page XI-18, Section XI.C.3.c.(1)(a) - An obvious location for disposal of the overburden and spoil would be the quarry on the Verplanck Site.

61. Page XI-18, Section CI.C.3.c.(1)(b) - The once through cooling system as noted in the Draft Environmental Statement may seriously impinge upon the natural production of recreationally important fish. This could have a serious impact on the estimated 26,000 people fishing in the Lower Hudson Valley on the average summer Sunday. Cooling towers however, may have direct impacts on Bear Mountain State Park. The towers would intrude visually into more than 1000 acres of the park.

An additional negative condition is the possible defoliation of Bear Mountain and Hudson Highlands State Park by the saline spray from wet cooling towers. The report by the Directorate of Licensing of the United States Atomic Energy Commission fails to account for the effect of the prevailing southerly winds on the distribution of the spray from the cooling towers.

The Hudson Valley is unique in that a tongue of forest types indigenous to the South intrude northward. These forest types are particularly susceptible to salt damage.

Further studies should be undertaken to determine the impact of wet cooling towers in this regard.

62. Page XI-23, Section XI, Mechanical Draft Towers - The second paragraph notes that in the staff's opinion the deposition of approximately 2.025 LBS/acre per year of drift salts from mechanical-draft cooling towers at Indian Point will have a negligible impact upon ground water supplies. The basis for the staff's opinion should be provided, particularly since the second paragraph on Page XI-29 notes that the wells in the area are relatively shallow.

63. Page XI-44 - We agree with staff assessment of the proposal to mitigate damages through stocking.

64. Page XI-51, Section XI, Alternative Fish Protection Measures - In the second paragraph, 0.5 ppm should be corrected to read 0.5 FPS - (editorial).

65. Page XI-53, Section XI.H.1. - Justification should be given for the "conservatively estimated" 15% annual forced outage rate in view of Con Edison's past forced outage rates for Indian Point Units land2.

66. Page B-12, 3rd paragraph - This is not the most comprehensive data available on spawning actibity; extensive collections were made in 1973.

67. Appendix C - Radiation Effects on Aquatic Biota should be expanded to take into account the low dilution expected with the operation of cooling towers.