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THE ASSISTANT SECRETARY OF COMMERCE
Washington, D.C. 20230

50-220

March 1, 1973

Mr. Daniel R. Muller
Assistant Director for
Environmental Projects
Directorate of Licensing
Atomic Energy Commission
Washington, D. C. 20545

Dear Mr. Muller:

The draft environmental impact statement for "Nine Mile Point Nuclear Station" which accompanied your letter of January 17, 1973, has been received by the Department of Commerce for review and comment.

The Department of Commerce has reviewed the draft environmental statement and has the following comments to offer for your consideration.

The AEC Staff indicates in sections 5 and 6, that intensive monitoring programs and an increased level of data collection would be required to obtain the information necessary to assess the plant's environmental impact. We recommend that the Applicant's plans for performing an intensive operational monitoring program be coordinated with appropriate State, Provincial, and Federal agencies prior to any action being taken on an operation license.

Our estimate of the maximum site boundary annual concentration sent to the AEC Division of Reactor Licensing on December 18, 1967 was 5×10^{-8} sec m^{-3} at a distance of 2000m to the east of Unit 1 stack. This is in agreement with the value of 6.8×10^{-8} sec m^{-3} at a distance of 1600m to the east of Unit 2 stack as listed in the applicant's environmental report. The AEC staff's comparable value at the 1600m distance is 2.1×10^{-8} sec m^{-3} (see table 5.6).

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Section 2.5.2, Lake Water Hydrology

Page 2-11, first paragraph - A statement should be included to the effect that the upwelling of nutrient-rich bottom water can lead to an increase in the productivity of certain shallow water areas.

Page 2-12, first paragraph - The likelihood that the water quality data for inshore waters that was obtained near Oswego may have been influenced by the poorer water quality of the Oswego River should be discussed.

Section 2.7.2, Aquatic Ecology

Page 2-15, first paragraph - The malacostracan crustacean *Mysis relicta* should be referred to as "opossum shrimp" or "*Mysis*," rather than "fairy shrimp."

Page 2-15, second paragraph - It is stated that "Despite the high nutrient content of Lake Ontario, the fish production is rather low." Although fish production is presently low for a lake with the productive capacity of Lake Ontario, the situation may be altered in the near future. The Great Lakes Fishery Commission treated all lamprey spawning streams last year, and the Canadian Department of Lands and Forests plans to treat Canadian streams and several key streams in U. S. waters again this year. Moreover, fishery management agencies in New York and Ontario have been planting salmonid species in Lake Ontario, and these agencies plan to intensify this activity in years to come. Since the forage base in Lake Ontario is as good or better than that in Lake Michigan when that lake's salmon stocking program was begun in 1965, it is expected that the fishery which would develop in Lake Ontario will be equally as good. At the present time, New York has planted salmonids in the Salmon River (10 miles east) and the Little Salmon River (6 miles east). Both rivers are close enough to the plant site that the fish leaving and returning to them could conceivably pass the intake and discharge of the Nine Mile Point Nuclear Station.

With regard to the assertion that the reason the alewife has flourished is that large predators have not been present, it is now thought that the population of alewife, an early colonist of the lake, stabilized prior to the decline of the large predators. This theory is supported by the resurgence of premium fish stocks in the 1920's and newspaper reports during the same era of two major alewife mortalities. 1/

Page 2-16, third paragraph - Although the final results of the studies now in progress under the auspieces of the International Field Year for the Great Lakes will not be available for some time, the data for the 1972 sampling is by and large available. This data indicates that heavy concentrations of alewife, smelt, and slimy sculpin occur in the area of Nine Mile Point and Mexico Bay. These three species form the majority of the forage base for the lake and are expected to support the newly-introduced salmon fishery.

Page 2-17, first paragraph - The newly hatched young-of-the-year alewife begin to show up in seine catches in the middle of August and remain inshore until fall; therefore, from late spring until this period in fall larval and young fish would be susceptible to entrainment. In addition, spottail shiners, which form an abundant inshore stock, remain inshore (less than 50 ft.) and are considered an excellent forage stock.

Page 2-17, second paragraph - Studies in the Lake St. Clair-Lower Lake Huron area indicate that smallmouth bass, a common and important game fish in the Mexico Bay-Nine Mile Point area, tend to move greater distances from their spawning areas than originally thought. Since Mexico Bay provides an excellent spawning and nursery area for this species, we suggest that the extent of smallmouth bass movement in the plant area be investigated and discussed.

1/ W.J. Christie. 1972. Lake Ontario: effects of exploitation, introductions, and eutrophication on the salmonid community. J. Fish. Res. Bd. Can. 29: 913-929.

Page 2-17, fourth paragraph - It would be helpful if additional information were supplied on the type of fathometer used and its capability of detecting concentrations of larval and young-of-the-year fish.

Page 2-17, fifth paragraph - Although it is true that the cause of mass mortality of alewives is not fully understood, three factors that are significant should be discussed: (1) high population density, which results in depletion in the food supply and poor physical condition of the fish; (2) temperature stress during cold winters and in the spring during spawning; and (3) physiological effects as a result of their saltwater origin.

Page 2-22, third paragraph - If a typical plankton net of #20 mesh were used for sampling the phytoplankton, the possibility of capturing fish larvae would be almost nonexistent. Thus, the statement that "Few fish larvae were observed in the plankton samples collected in 1964" should be qualified. To accurately assess the numbers of fish larvae in the area, a net at least ½ meter diameter and made of 351 Nitex should be used. This net should be towed at approximately 4 miles per hour. In addition, if information from reference 22 was used for determining the abundance of fish larvae, sample collection with a Nansen bottle, as used in this survey, virtually precluded any larval entrapment.

Section 5.5.2, Effect on Aquatic Environment

Page 5-23, first paragraph - It would be helpful if an estimate were provided for the fraction of water within the 30-ft depth contour that would be used by the FitzPatrick and Nine Mile Point units.

Page 5-27, fourth paragraph - The effects of mechanical damage on entrained organisms, and the sublethal effects of thermal and mechanical shock on susceptibility of the affected organisms to predation should be included in this section.

Page 5-29, third paragraph - Yellow perch, a common fish in the area, require a certain period of time at 4°C or below for maturation. The possibility that those fish remaining in or near the heated discharge plume would not receive this exposure and therefore would not mature, should be discussed.

Page 5-31, second paragraph - The AEC Staff concludes that "thermal discharge effects will be insignificant in terms of ecological relationships in the lake as a whole." Since the lake as a whole is being considered here, all effects of all point sources of waste heat and pollution should also be considered, not just the effects anticipated as a result of operation of this one unit of a single power plant. To support the conclusion that ecological relationships in the lake as a whole will not be affected, it would seem logical that the feasibility of implementing a lake-wide monitoring program to assess the effects of all sources of waste heat and pollution on the aquatic ecosystem of Lake Ontario should be discussed.

Section 6.1 Aquatic Monitoring Program

Page 6-3, last paragraph - A description of the sampling gear for collecting phytoplankton, zooplankton, fish eggs, and larvae should be provided.

Page 6-4, second paragraph - The feasibility of collecting the samples in the plant forebay, instead of or in addition to collecting samples close to the inlet, should be discussed.

Secondly, the 9-minute exposure time for organisms does not include the period of time the organisms will actually spend in the heated plume. To be meaningful, the laboratory studies should simulate the temperature decay pattern of the plume as closely as possible, and the total time of exposure should be mentioned.

Section 6.3, Radiological Monitoring Program

Page 6-5, fifth paragraph - More detailed information should be presented, including names of species of all organisms sampled for radioactivity.

Section 9.1.3, Alternative Sites

Page 9-13, first paragraph - An explanation for the conclusion that closed-cycle cooling is necessary for Lake Erie sites, but not for Lake Ontario sites, should be provided.

Section 9.2.1, Cooling System

Page 9-23, third paragraph - In view of the similarity of the area's aquatic fauna to that of the Donald C. Cook site, for which the Staff came to the conclusion that "natural draft cooling towers would be the environmentally optimum choice" (Donald C. Cook Draft Environmental Statement, pp. XI-16 to XI-18), further explanation should be provided for the Staff's conclusion that, in effect, supplemental cooling systems are not feasible for the Nine Mile Point Nuclear Station.

We hope these comments will be of assistance to you in the preparation of the final statement.

Sincerely,

Sidney R. Galler

Sidney R. Galler
Deputy Assistant Secretary
for Environmental Affairs

Regulatory File Cy.