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CLASS	UNCLASS xxx	PROP INFO	INPUT	NO CYS REC'D 1		DOCKET NO: 50-220		

DESCRIPTION: Ltr. trans the following.....	ENCLOSURES: New York State comments on the DES for Nine Mile Point Nuclear Station #1.
PLANT NAME: NINE MILE POINT #1	

FOR ACTION/INFORMATION 9-4-73 JB

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EXTERNAL DISTRIBUTION

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1 - ASLB (YORE/SAYRE/ WOODARD/"H" ST.	1-CONSULTANT'S NEWMARK/BLUME/AGBABIAN	1-AGMED (WALTER KOESTER RM-C-427-GT
16 - CYS ACRS HOLDING	1-GERALD ULRIKSON... ORNL	1-RD..MULLER..F-309 GT

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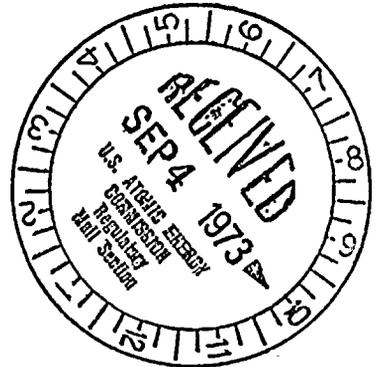
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RONALD W. PEDERSEN
FIRST DEPUTY COMMISSIONER

STATE OF NEW YORK
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
ALBANY

50-220
50-220



August 29, 1973

Dear Sir:

The State of New York has completed its review of the "Draft Environmental Statement Related to the Nine Mile Point Nuclear Power Plant Unit No. 1", (Docket No. 50-220). The statement was prepared by the Commission's Directorate of Licensing and issued in July 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. 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.

We concur with the findings of the Commission staff as noted in several sections of the draft statement that studies conducted by the applicant are not sufficient for a reliable assessment of some aspects of probable environmental impacts of plant operation. For example, the data supplied by Niagara Mohawk Power Corporation are not definitive enough to ascertain the extent of impact on fish resources as a result of plant operation.

The deficiencies noted in the attached comments, and those discussed by the Commission staff in Section 6 of the draft environmental statement, indicate that additional information should be furnished to assess the long-term impact of plant operation on aquatic life. Until sufficient data using reliable methods of sampling and accurate assessment of this information are provided to generate a reasonable level of data confidence, we cannot concur with the Commission staff conclusion that a full-term operating license should be granted. However, if the Commission issues a full-term operating license under these circumstances, the license should be issued only with appropriate conditions to assure protection of the environment.

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[The body of the document contains several paragraphs of text that are extremely faint and illegible due to the quality of the scan. The text appears to be organized into sections, possibly separated by headings or sub-headings, but the specific content cannot be discerned.]

It is gratifying to note that the statement contains a section on alternate intake systems. New York State has urged the Commission to include this information on several other draft environmental statements.

However, without the information being available regarding the various intake systems to be examined (p. 9-17), the State cannot adequately assess the benefits and costs of various systems designed to reduce one of the plant's most significant environmental impacts. It is requested that the Commission direct their comments on examination of the suggested alternatives to the applicant and defer the issuance of a final environmental statement until the information is provided and properly assessed. This information should also be supplied to the various federal and state agencies reviewing the draft environmental statement. Their comments should also be solicited following a review period.

Sincerely,



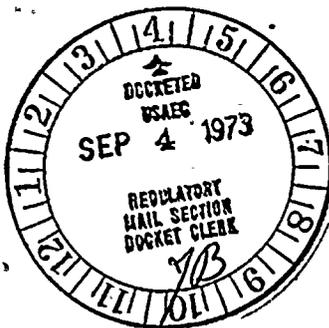
Enclosure

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

Attention: Deputy Director for Reactor
Projects, Directorate of
Licensing

Regulatory

File 07



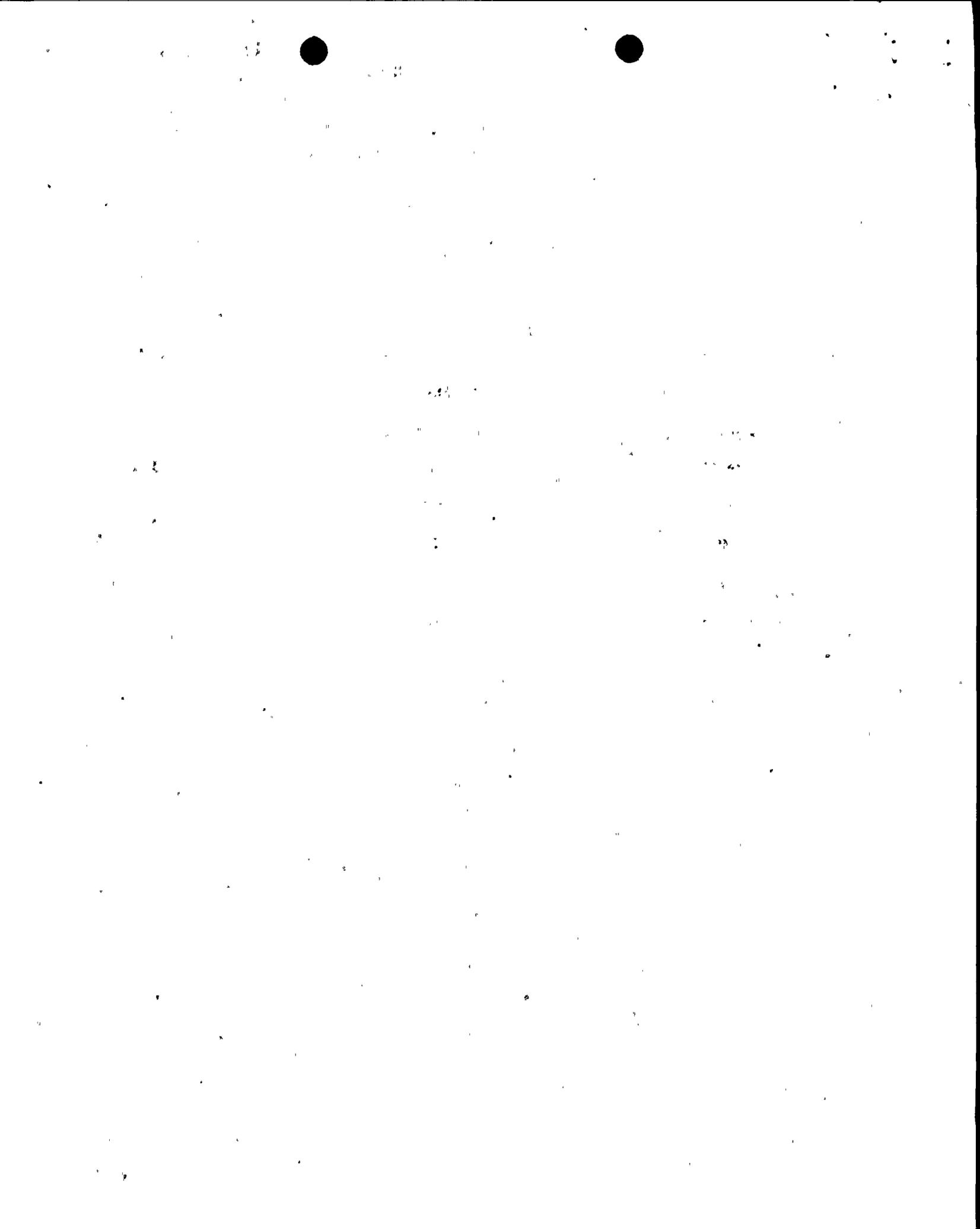
NEW YORK STATE
COMMENTS
on the
U.S. ATOMIC ENERGY COMMISSION'S
DRAFT ENVIRONMENTAL STATEMENT
for
NINE MILE POINT NUCLEAR STATION
UNIT NO. 1

1. General Comment

After reviewing the Applicant's Environmental Report and the AEC's draft statement, and observing the fish impingement study at the plant, three things are apparent:

1. A large number of fish have been impinged on the traveling screens;
2. A varying, but considerable portion of these come off the screens alive;
3. The process of returning impinged fish to the lake probably kills the remaining fish.

Three changes in plant and its operation would appear to reduce the kill of impinged fish. First, the normal schedule calls for the traveling screens to be stationary 57 minutes of each hour. Therefore, impinged fish are held against the screens for a considerable time. If the screens were traveling continuously, the impingement time would be greatly reduced with fewer fish dying on the screens. Second, the screens are cleaned with a very high velocity spray, which removes fish from the screens and slams them against the housing. It is felt, that the spray velocity could be reduced substantially and still



insure cleaning of the screens. If the fish were removed gently, fewer would die in this process. Third, the fish and debris from the screens flow directly into the discharge, with a temperature as much as 31.2°F above the water they just left. The fish are in the discharge tunnel at this temperature for about two minutes, and at reduced temperatures of the plume for an additional varying period. This same discharge is periodically used for disposal of chemical wastes from the laundry, regeneration wastes (page 3-33), floor drains (page 3-16), and waste collector system (page 3-13).

It is felt, that the combined effect of being held for up to 57 minutes on the screens, being slammed against the housing, and then placed in the heated and chemical discharge for two plus minutes, kills most of the impinged fish. Further, it is felt, that this kill could be reduced substantially, by cleaning the screens continuously with a reduced spray velocity and returning the fish through a separate sluiceway to the lake away from the intake and discharge areas.

It should be noted, that such measures will not insure that all fish will survive. Some impinged fish will die, and studies will have to be carried out after these modifications go in effect to determine the magnitude and significance of fish killed by impingement.

Any decision on alternate intake designs should, however, be made following the submittal by the applicant of information on alternate intake systems as suggested on Page 9-17. The above recommendations, however, should be implemented to reduce the fish kills until such decisions are made.



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2. Summary and Conclusions, Page iii - License Conditions

Any Commission full term operating license for this facility should be appropriately conditioned to assure that the upgraded radwaste systems are installed in the most timely manner and further proven to operate within their design parameters.

3: General Comment

It is stated that the staff is of the opinion that the applicant's monitoring program to date has not shown that the intake system will avoid substantial fish kills, with subsequent lack of confidence on the impact of fish populations in the Nine Mile Point area. It is further stated that the applicant will be required to perform intensive monitoring at some unstated future time to determine the seriousness of this fish-kill problem. In addition, it is stated that the applicant has presented no alternatives to the design of the present intake system. Based on these statements, and the conservation assumption that the intensive monitoring program will reflect that the present intake system will not prevent "substantial" fish kills, it is considered prudent that the U. S. AEC require that the applicant implement the intensive monitoring program as soon as possible, so that redesign of the intake system, if required, can be accomplished with appropriate dispatch.



4. General Comment

With the construction of proposed Nine Mile Point Unit No. 2, the circulating water system for Unit No. 1 will be modified to a combined discharge system for both units. A discussion should be presented of the projected combined discharge velocity and thermal dilution improvements of the combined discharge system. The State's review of this report is obviously influenced by the fact that the applicant has this commitment.

5. General Comment

A discussion of the applicant's present and proposed energy conservation efforts should be included in the Environmental Statement.

6. General Comment

Most of the comments the State previously forwarded to the U. S. Atomic Energy Commission on the Nine Mile Point Unit 2 and James A. FitzPatrick Plant draft environmental statements regarding thermal/hydraulic water quality considerations are applicable to this draft environmental statement.

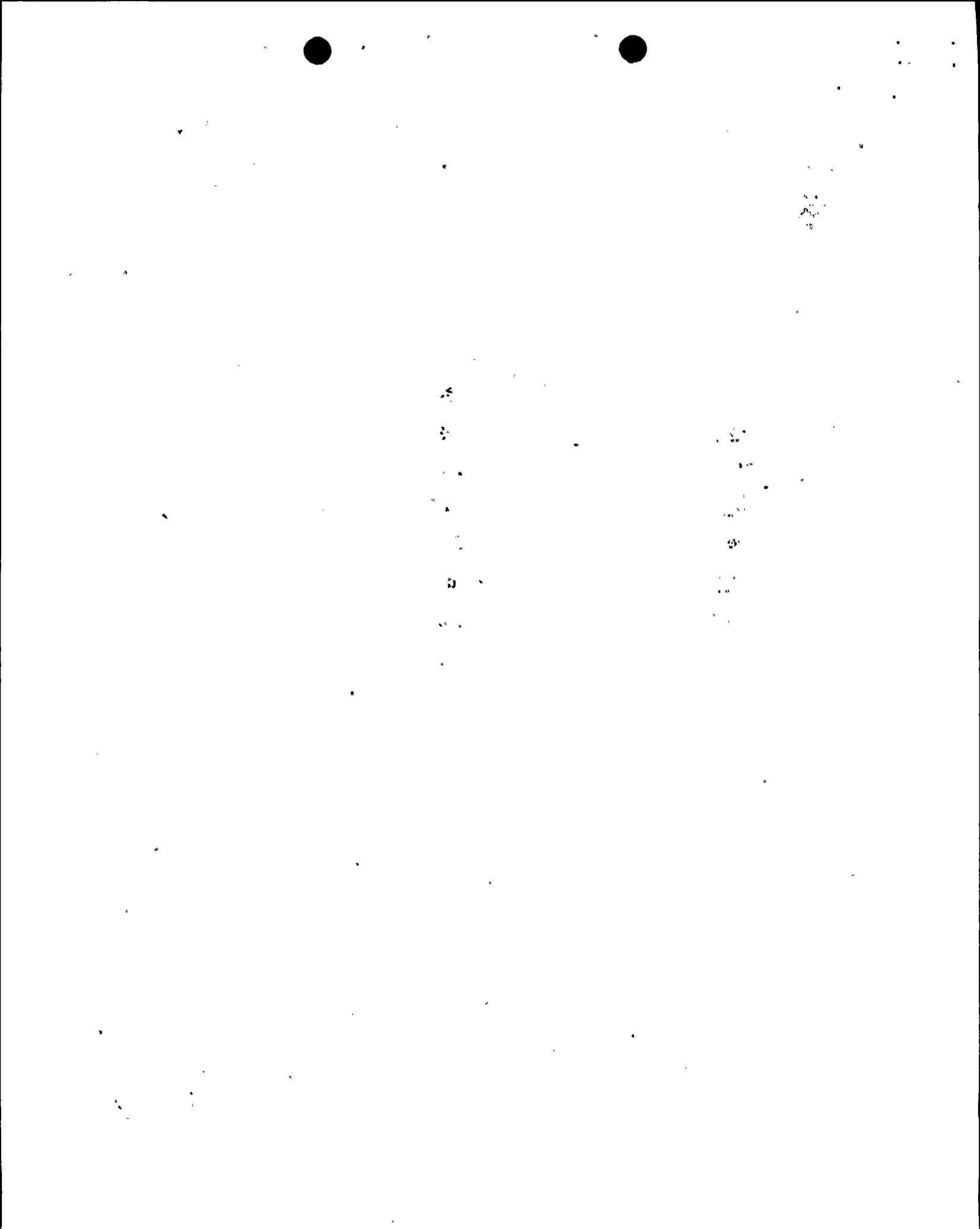
7. General Comment

A discussion of the effects that the construction and operation of the station has had on the local community should be included in the Environmental Statement. The impact on schools, housing, local roads, etc., with a statement on the net societal impact should be addressed in this discussion.

8. General Comment

There are numerous editorial oversights throughout the document. For example:

- a. Page Numbering - The page beginning each section should be numbered, i.e.: 1-1, 2-1, etc. This is consistent with other environmental statements such as Ginna's Draft of April 1973, and FitzPatrick's Final of March 1973.



- b. Cover - the word "Energy" is missing in the title "United States Atomic Energy Commission."
 - c. Section 3.5.1.2, Page 3-16 - The first word of the paragraph should be "In" instead of "An."
 - d. Figure 2.5, Page 2-9; Figure 3.2, Page 3-3; and Figure 3.14, Page 3-38 - The poor quality of the photographs in Figures 2.5, 3.2 and 3.14 does little to promote the aesthetic features of the facility.
 - e. Nuclide Symbols - A consistent set of symbols should be used to identify radionuclides in Tables 3.2, 3.3, 3.6, 3.7, and 5.3
 - f. Section 2.7.2, page 2-18. Second from last paragraph, third line introduces a new fish to the Lake Ontario fishery, the "alleye."
9. Summary and Conclusions, Page i and Introduction, Page 1-1 (not page numbered) - These sections note that 1850 MWt is required to produce 610 MWe net. The 610 MWe net is questioned, since other Nine Mile Point Unit No. 1 documents (i.e., U. S. AEC RO Inquiry Report No. 50-220/72-110 of 11/21/72) note a higher than 610 MWe output.
 10. Summary and Conclusions, B, Page iv, suggests that studies be conducted to "... evaluate the magnitude of the fish-kill problem." We submit that the fish kill is large (Table 5.12, page 5-33) and that some steps, as outlined above, be taken to reduce the kill immediately. Then conduct a monitoring program to determine the extent to which Nine Mile Point is still killing fish, and the effect of this kill on the local populations and on Lake Ontario.
 11. Summary and Conclusions, Page iv - The fifth Technical Specification Requirement should be expanded to read, "The Applicant will conduct a terrestrial monitoring program to determine the environmental effects of the use of herbicides for line maintenance. Particular attention should be given to



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11. (continued)

vegetation which figures significantly in the life-cycle of valued wildlife species which may occupy this right-of-way. The program . . ."

12. Summary and Conclusions, Page iii - License Conditions

The 500-foot wide cleared transmission line corridor has a significant and disturbing visual impact. The applicant should be required, as a condition of full-term licensing, to alleviate this situation by means of planting. Trees of limited height potential, and shrubs, planted in groups at selected spots where long, straight sections of the corridor occur, will reduce the tunnel-like aspect. Species of trees and shrubs having wildlife benefits should be used.

Similar plantings should be made at points where the corridor is intersected by a road or stream.

13. Table 1-1, Page 1-4

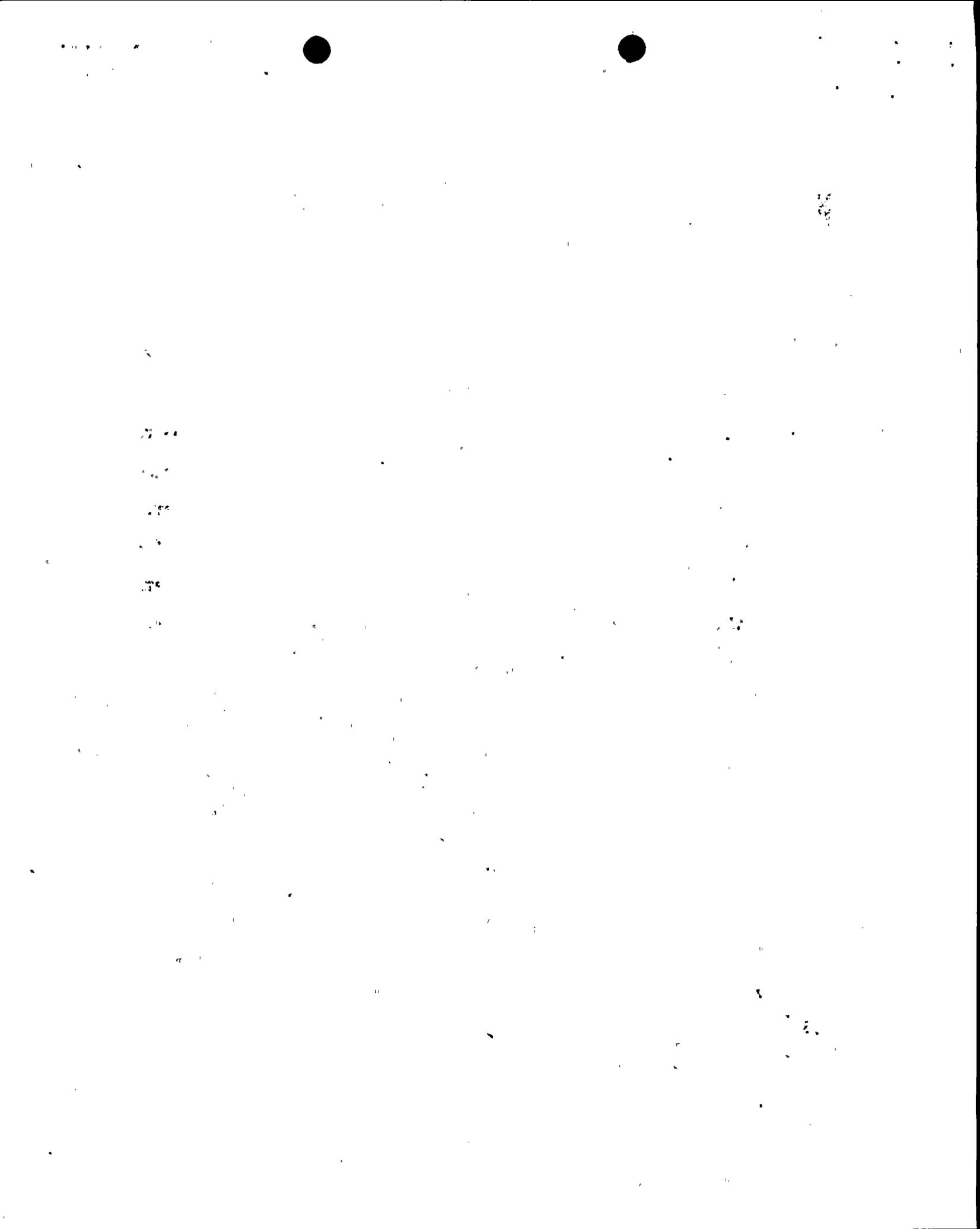
Permits from the N.Y.S. Department of Environmental Conservation are needed for the standby diesel generators and fire pump.

14. Section 2.2, Page 2-7

It is stated that the entire shoreline north of Unit 1 will be accessible to the public. This is not clear, since the Environmental Report notes that most of the site area has only recreational possibilities, except for that restricted area in the immediate vicinity of the generating station which includes the Station's immediate shoreline.

15. Section 2.4, Page 2-8

The phenomena of bedrock "pop-up" should be briefly discussed in this section. The discussion should include statements that the applicant (PSAR for Unit 2)



15. (continued)

observed no "pop-up" features of consequence during Unit 1 excavation, and that the closest reported features of consequence are near Lowville, approximately 50 miles northeast of the site.

16. Section 2.5.2, Pages 2-10 and 2-11

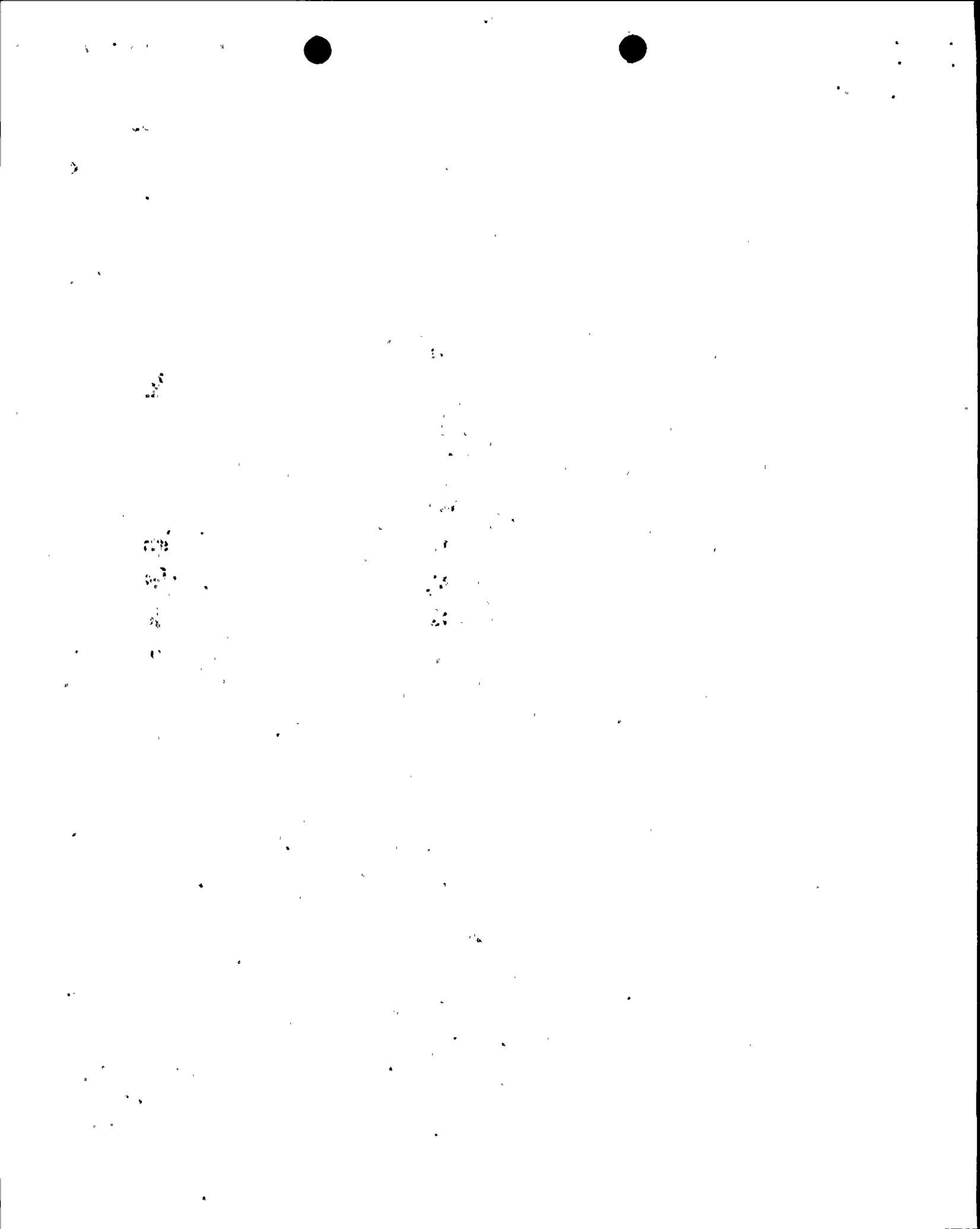
Paragraph 3 and Figure 2.6 note that Lake Ontario has a maximum surface temperature of 72°F during summer. Paragraph 2 of Section 3.4 (Page 3-7) states that the intake water temperature varies with the season from 33 to 77°F. Initial impact implies a discrepancy (this impact is further substantiated by statements that vertical thermal stratification exists during the summer, and that the intake structure is a minimum of 15 feet below the surface) unless it is clarified (as in the FitzPatrick Environmental Technical Specifications) that: (1) the 77°F temperature is the maximum recorded Lake temperature, and (2) that 77°F is the conservative design basis for establishing the maximum allowable discharge temperature.

17. Section 3.2, Page 3

It is stated that the reactor has a Stretch rating of 1850 MWt, corresponding to a net electrical output of 610 MWe. This is questioned, since preceding sections (Page 1-1 and i) note that these are rated values.

18. Section 3.3, Page 3-4

It is stated that the applicant proposes to use a high pressure water flush or other mechanical means to prevent fouling of the condensers. This is not clear, since high pressure water flushing is not considered mechanical cleaning.



19. Figure 3.3, Page 3-5

The figure appears to depict the existing, and not the upgraded, liquid radwaste system because floor drain sample tank drains are shown going directly to the circulating water system discharge. Thus it should be noted, at least for the radwaste portion of the water-usage flow figure, that the existing system is depicted. In addition, the discharge canal, screen house and discharge tunnel should be labeled to clarify where effluent discharges interface with the circulating water discharge system.

20. Figure 3.4, Page 3-6

Figure 3.4 is entitled "Circulating Water System: Plan." It is recommended that this title be modified to "Intake and discharge structure locations: Plan." This title more correctly describes that portion of the cooling water system depicted, and is consistent with the description contained in Section 3.4. In addition, for clarity (Reference Figure 3.4 of FitzPatrick's Final Environmental Statement dated March, 1973) the intake and discharge tunnels should be labeled, and after "intake" and "discharge" the word "structure" added.

21. Section 3.4.1, Page 3-7

The following clarifications and corrections should be made:

- a. For clarity and for consistency with Section 3.4.2, it should be noted that the intake structure is located about 850 feet offshore.
- b. It is stated that the intake tunnel has a 74 square-foot cross section. About 78 square-feet more accurately describes the cross section of the 10 foot diameter intake tunnel.
- c. "Diagrammatic Sketch" better describes the screenwall shown in Figure 3.6



1.11.12

21. (continued)

c. (continued)

than "Schematic Diagram." Schematic Diagram intonates single line (wiring, piping, etc.) depictions. The title of Figure 3.6 should also be changed.

d. It should be clarified that the noted 8 fps velocity through the intake tunnel is a design velocity based on the cooling water flow requirements for maximum power output.

e. A description of the traveling screen's backwashing sequence and sluicing operation should be included.

22. Section 3.4.2, Page 3-7

The following clarifications and corrections should be made:

- a. It should be noted that the discharge tunnel is 10 feet in diameter.
- b. It is stated that the effluent has an initial velocity of approximately 4 fps. It is not clear where in the discharge flow path this effluent velocity exists.

23. Figure 3.6, Page 3-9

The service water and fire pumps should be labeled on Figure 3.6, since paragraph 3.4.1 refers to them as being shown of Figure 3.6

24. Table 3.2, Page 3-19 - Lists the estimated annual release of radioactivity in liquid effluents. The table does not include dissolved noble gases.

Appendix I 10CFR50 states:

"The design objectives guides for liquid effluents include limitations on both quantities and concentrations of radioactive material in effluents. The estimated annual quantity of radioactive material,



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except tritium, released to unrestricted areas would be limited to not more than five curies per power reactor at a site."

The quantities and environmental effects of dissolved noble gases should be evaluated.

25. Table 3.2, Page 3-19

The isotope Ru-103 is incorrectly identified as Ra-103.

26. Table 3.3, Page 3-20 and Table 3.7, Page 3-29

A license condition notes that the applicant will complete construction of a new radwaste building onsite (expected to be fully operational in late 1975 with the liquid effluent portion being operational in September 1974) to assure compliance with the "as low as practicable" criteria contained in 10 CFR 50. Tables 3.3 and 3.7 tabulate estimated annual release of radioactivity in liquid and gaseous effluents for the upgraded radwaste system. It is questioned if these releases meet the conditions of WASH-1258 - (numerical Guides for Design Objectives And Limiting Conditions For Operation To Meet The Criteria "As Low As Practicable" For Radioactive Material In Light-Water-Cooled Nuclear Reactor Effluents) for the proposed treatment provided in the upgraded radwaste system waste streams. If WASH-1258 criteria and conditions are met, it is recommended that this be noted on the concerned tables and, in addition, briefly discussed in Section 3.

27. Section 3.5.1.6, Page 3-18

The applicant's calculations regarding the present liquid waste treatment system underestimated the actual reported radioactivity, excluding tritium, in liquid releases by a factor of about fifteen thousand. The Environmental



Statement should therefore provide more than calculational evidence to support the contention that radioactivity released from the upgraded liquid waste treatment system will meet the "as low as practicable" guidelines.

28. Table 3.3, Page 3-20

In column five, the 0.0014 should be replaced by TC-99m.

29. Section 3.5.2.2, Page 3-26

The upgraded gaseous waste treatment system shows a single catalytic recombiner system. Apparently the Table 3.7 does not consider down time for the recombiner system. For the draft environmental statement of the FitzPatrick plant, a down time of ten days per year was considered and considerable noble gases were estimated to be released.

30. Table 3.6, Page 3-27

The isotope ^{83m}Kr is listed twice. The second entry should be ^{85m}Kr .

31. Section 3.5.3, Page 3-28

The section on solid waste should consider the disposal problem as this was not covered in the "Survey of the Nuclear Fuel Cycle". To better evaluate the disposal problem, the isotopic breakdown, particularly the alpha content, should be presented in order to demonstrate these wastes will meet burial criteria.

32. Section 3.5.3, Page 3-30

The staff estimate of solid waste based upon experience at other operating BWR plants is given as 11,000 cubic feet with an activity of 2700 curies. The actual experience at Nine Mile Point Unit No. 1 indicates about the same order of magnitude of total cubic feet with an activity of approximately 10% of the staff estimate. The reason or significance of this difference should be discussed.



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33. Section 3.8, Page 3-35

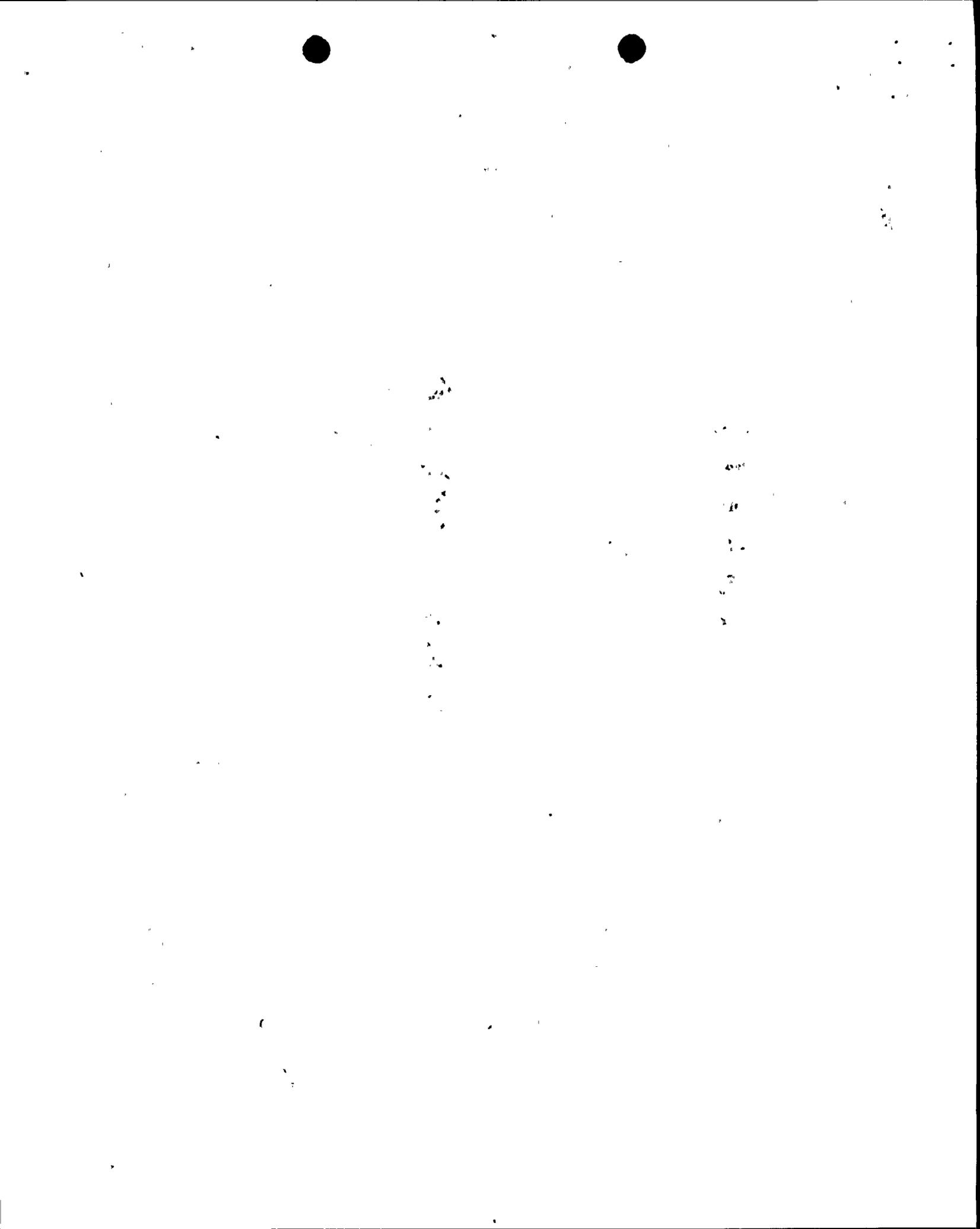
It is stated that to allow for probable need for a future 345-kV transmission line, a 500-foot right-of-way was purchased. The future 345-kV transmission line is questioned, since applicant's testimony (Garey, NYS Public Service Commission Case 26251, Tr Page Sm 4657 of January 26, 1973), and the Final Environmental Statement for Unit 2 note that the proposed future transmission line is 765-kV.

34. Section 4.1.1, Page 4-1

The first paragraph states, "The applicant established 130 acres of the site as a wildlife habitat in 1969 by posting the northwest corner of the site." Supplement 1, of the applicant's environmental report refers to this area as a "natural wildlife refuge" (page S1.5-1). The problem here is use of terms and intent. It would seem that the reason for posting was safety concerns for the visitor center and there is no argument against that. However, if that is the case, state it. They certainly did not "...establish ... wildlife habitat... by posting..." and it is questionable that they established a natural wildlife refuge with an active visitor center involved. It would be very desirable at some time to have an active wildlife management program on the 855 acres available, but until this is the case, no such inference should be made.

35. Section 4.1.1, Page 4-1

It is stated that no impacts on neighboring lands will result from construction of the radwaste building and that the effects will be temporary. Yet, the radwaste building will take approximately two years to complete, the James A. FitzPatrick plant will be under construction nearby and additional



35. (continued)

plants may be constructed in the vicinity. The synergetic effect might be a continuing environmental impact from construction noise.

36. Section 4.1.2, Page 4-1

We note that the station is connected to the Applicant's system by two 345kV transmission lines and the right-of-way is planned for an additional 765 kV line. The Final Environmental Statement should present data on the sound levels produced by these lines. The intention of the Applicant with regard to the possible installation of higher voltage lines and the resulting potential for increased sound levels should also be stated in the Final Environmental Statement.

37. Section 4.1.2, Page 4-2

It should be noted that the existing 500-foot corridor accommodates two 345-kV transmission lines to the Clay Substation. In addition, it should also be noted that with construction of proposed Nine Mile Point Unit 2, at least a portion of the eastern edge of the existing corridor would have to be extended to accommodate a new 765-kV transmission line.

38. Section 5.1-2 Transmission Lines

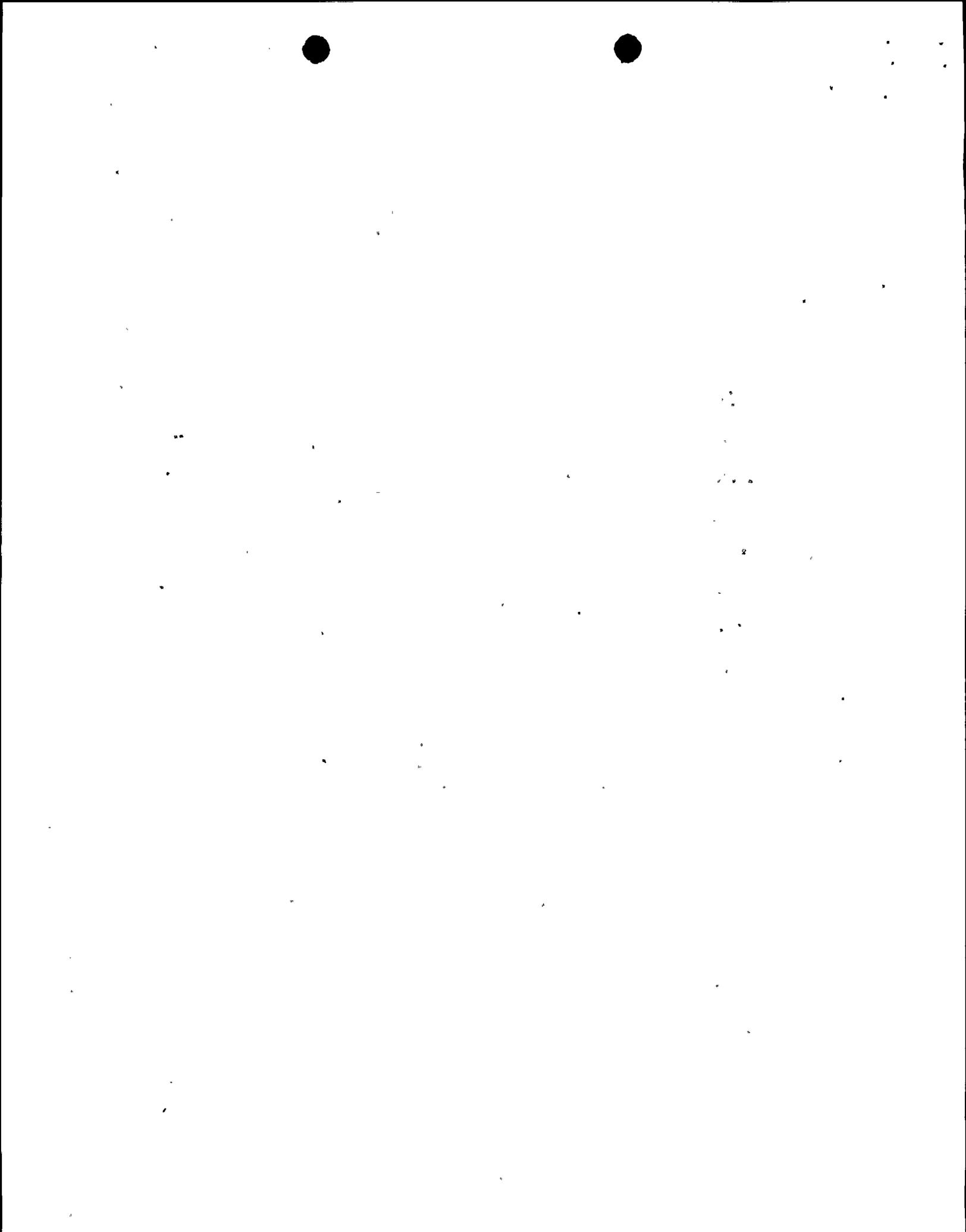
We concur with the fact that the Applicant did not have the benefit of the State of New York Department of Environmental Conservation guidelines and recommendations for transmission line location and construction (as stated in Section 4.1.2) when the original 500 ft. corridor was selected and cleared (the Nine Mile Point Unit-Clay Circuit). However, this does not preclude the use of said guidelines in the maintenance of the transmission lines which are a part of the referenced documents.



38. (continued)

Accordingly, kindly consider the following in the preparation of an environmental maintenance management plan for this installation:

- a.) "It is recognized that it will be necessary for the applicant to periodically inspect the transmission line and the roadway and to maintain said line and roadway to insure the safe transmission of power."
- b.) Danger trees, as determined by the designated representatives of the applicant and the regulatory agency, may be cut as long as conditions and limitations for such cutting are established prior to the start of operation.
- c.) Native vegetation, particularly that of value to fish and wildlife, which was saved during construction or has since reproduced to natural growing conditions and does not pose a hazard to the facility should be allowed to grow, and in critical areas should be planted in the right-of-way.
- d.) Access roads and service roads should be maintained with native grass cover, water bars and proper slope in a manner which the designated representatives of the applicant and the regulatory agency deem sufficient to prevent soil erosion.
- e.) Burning will not be permitted during maintenance operation.
- f.) The prevention and control of environmental noise pollution resulting from maintenance operations and the operation of the high voltage transmission line should conform with New York State's proposed regulations.



g.) Maintenance or land management of the right-of-way in many instances can be best accomplished by encouraging the owner or former owner to continue his land use insofar as it is compatible with the Applicant's objectives. Such land use might be the raising of various crops, grazing, and recreational uses.

39. Section 5.1.2

The following are recommended modifications to Section 5.1.2 of the Draft Environmental Statement for Nine Mile Point Unit 1. A Technical Specification for the Nine Mile Point Unit 1. should be developed using this section as modified:

- a. Section 5.1.2 (b) - change "should" to "shall"
- b. Section 5.1.2 (c) - change to "Treatment shall not be more than once every 4 years."
- c. Section 5.1.2 (d) - change "should" to "shall"
- d. Section 5.1.2 (e) - " " " "
- e. Section 5.1.2 (f) - " " " " and add at end "and their written approval secured."
- f. Section 5.1.2 (g) - Add sentence at end - "All pesticide applicators shall be certified applicators under State provisions and shall comply with applicable State standards."
- g. Section 5.1.2 (h) - No "safe" dioxin level has been established.
- h. Section 5.1.2 (i) - Add phrase at end - "and action taken to ensure that drift or volatilization be held to a minimum for future applications."

40. Section 5.1.2, Page 5-2

It is stated that "No stands of potentially poisonous plants should be sprayed with herbicides." We are curious about the basis for this recommendation.



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Recommendation (j) should be expanded to include a list of potentially poisonous plants.

41. Section 5.2.4, Page 5-12

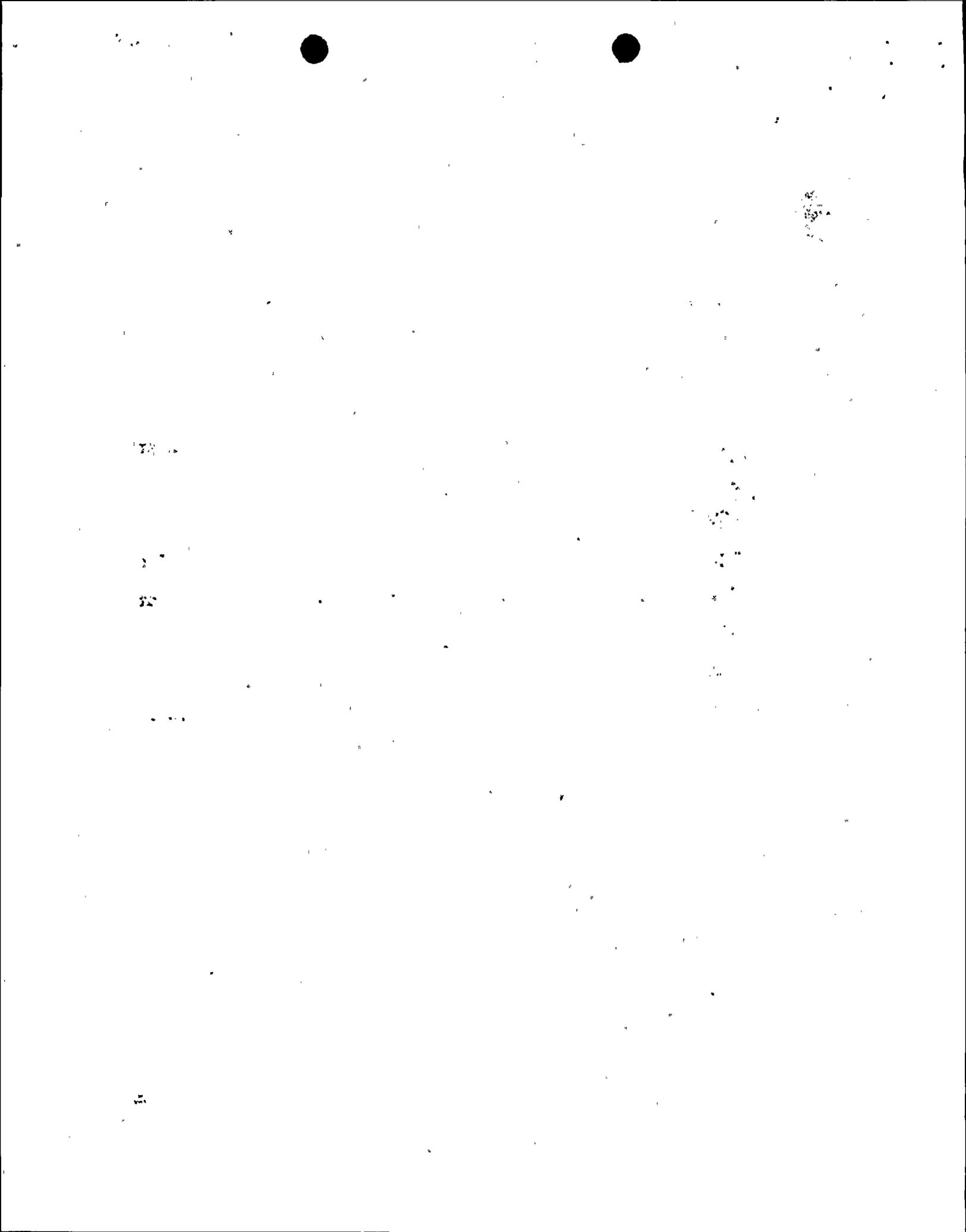
In paragraph two, the maximum allowable gross beta activity should be corrected to 1000 picocuries per liter rather than the stated 100 picocuries

42. Section 5.5.1, Page 5-31

The discussion of environmental noise is inadequate. A survey should be made of sound levels in and around the plant to determine sound levels created during various modes of plant operation. The survey should include sound levels associated with high voltage transmission facilities. Results of the survey would permit an evaluation of the sound level impact from this plant, and would be useful in evaluating the potential impact of proposed Unit 2. It is suggested that a sound level study be required of the applicant, and that a statement to that effect (as recommended in comment No. 44) could be added to the Technical Specification Requirements on page iv of the Draft Environmental Statement.

43. Page 5-31

It is stated that, "The Applicant's measurements of sound intensity indicated that the maximum sound produced at the site boundaries was from the transformer at all locations; sound intensity from the transformer was equal to or less than the background noise." The acoustical environmental impact evaluation should be presented in accordance with Part 75 of Subchapter E of the NYS Public Service Commission Interim Rules for Certificates of Environmental Compatibility and Public Need for Steam Electric Generation Facilities.



43. (continued)

It is noted that transformers generally radiate pure tones which are more annoying than broad band noise of the same energy content.

44. Page 5-31

The environmental technical specifications for Nine Mile Point Unit 1 should include the following:

OBJECTIVES

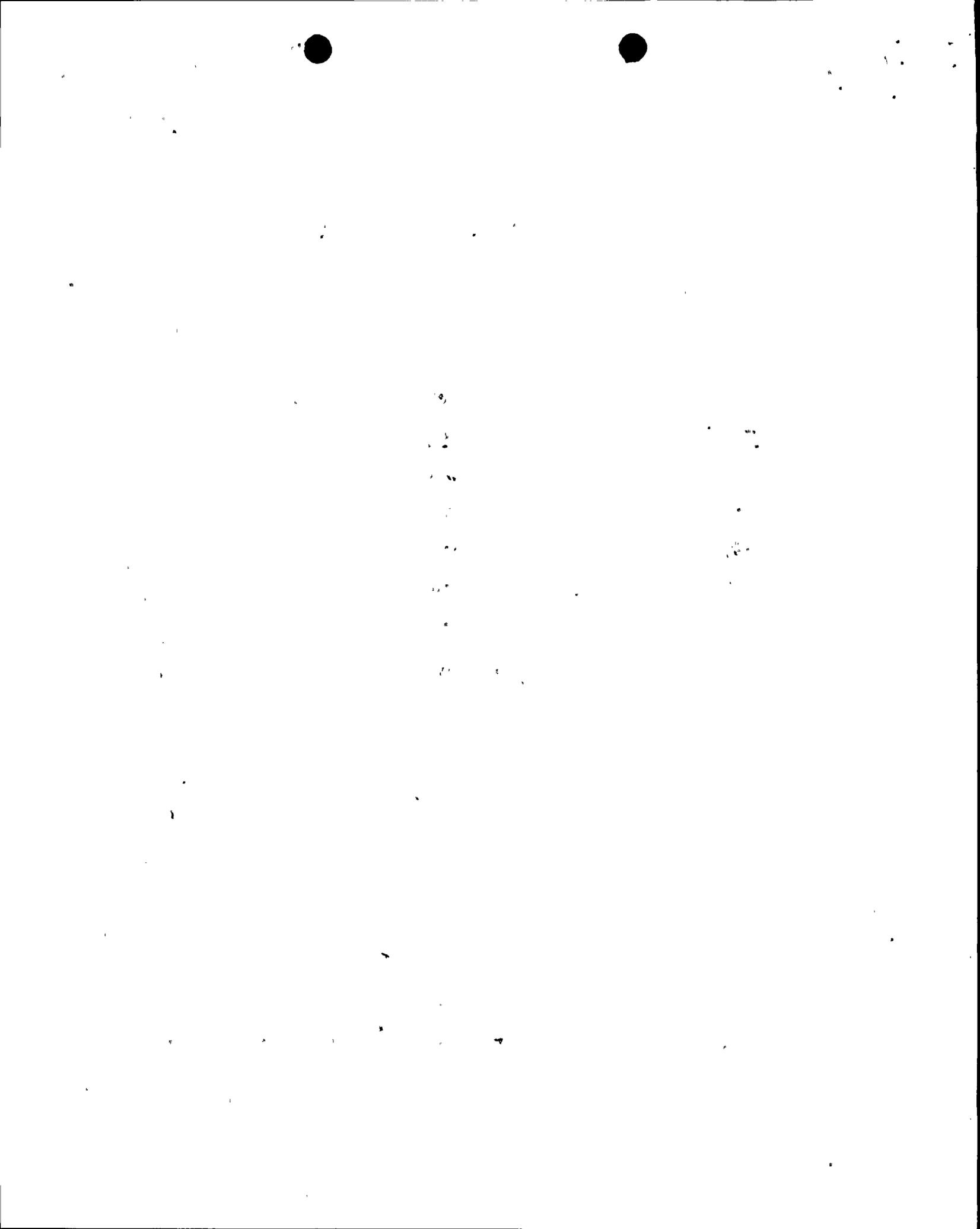
To determine the sound levels created during normal plant operations at and beyond the plant boundaries.

SPECIFICATIONS

A sound survey shall be made around the plant in accordance with Part 75 of Subchapter E of the Interim Rules for Certificates of Environmental Compatibility and Public Need for Steam Electric Generation Facilities of the Public Service Commission. These measurements shall be taken following initial full power operation. The results shall be evaluated by the applicant and a report with the appropriate recommendations as to the future of the program shall be submitted to the Directorate of Licensing and the New York State Environmental Conservation Department for consideration.

BASES

The sound survey shall show the extent to which the plant affects the ambient noise in surrounding land uses. This information is needed to insure that the plant conforms to noise rules and regulations of the New York State Environmental Conservation Department. The information will also be useful to the surrounding communities for land use planning decisions. In addition, if a second plant is proposed the data will be needed for preparation of the Environmental Impact Statement for that plant.



The above sound survey and subsequent evaluation should be completed prior to issuance of a Full Term License.

45. Section 5.5.2 a. Intake Effects, page 5-31.

The fourth sentence, 2nd paragraph implies that alewives and smelt amounted to 82% of the fish species which were impinged. Actually, these 2 species are only 6.7% of the 30 species collected. Of the 12,987 fish collected during the impingement studies, 82% were smelt or alewives.

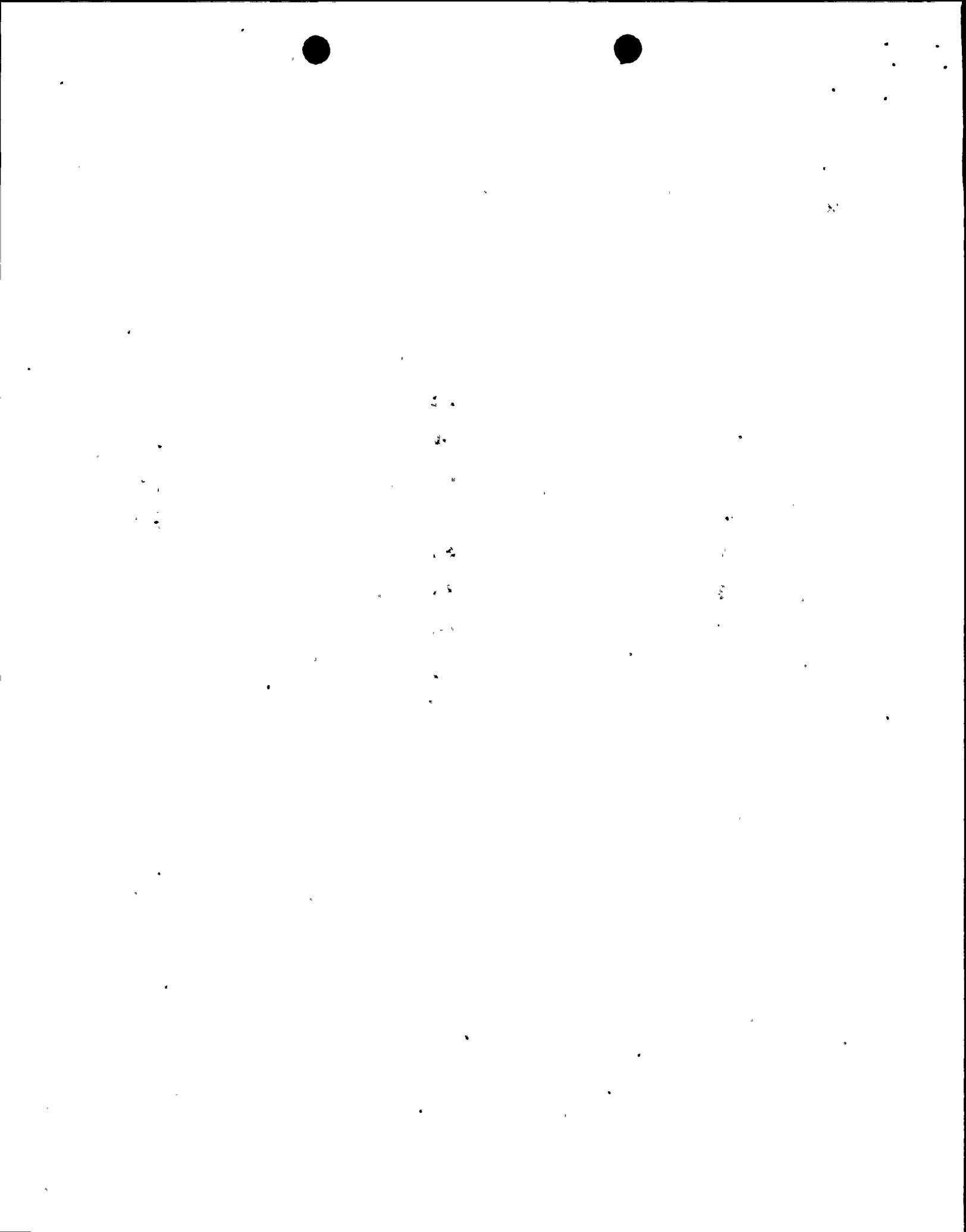
46. Section 5.5.2 a. Intake Effects page 5-34, 3rd paragraph.

The description given here of removal of fish from the traveling screens differs from the process observed at the plant. This statement infers that impinged fish removed from the traveling screens "...collect in the trash pit along with the debris," and that "The "ecological death" of these stressed and disabled fish appears inevitable." In observation of this process, the fish were removed from the screens by a high velocity spray, slammed against the housing and went directly to the discharge. A large percent of these impinged fish were alive as they entered the discharge. We submit, that ecological death is not inevitable, and that minor modifications suggested (comment #1) above would save many of these.

The theme of the last paragraph of this section was covered in comment #10.

47. Page 5-36

It is stated that "mechanical stress does not appear to be significant at moderate lake temperatures (50°-59°F), yet there is no statement of the effects of mechanical stress at other temperatures. The draft environmental statement should discuss these effects also.



48. Section 5.5.2 b. Entrainment Effects, Page 5-37

The last three sentences of this section, page 5-37, aptly sum up the subject of entrainment, particularly of fish eggs and larvae, at Nine Mile Point #1. This should be added to Summary and Conclusions, page i at the bottom of the page.

49. Section 5.5.2 c Thermal discharges Effects (1) Fishes. Page 5-37

The staff makes several references to preferred temperatures of fish. The statements are correct. However, it should be noted in this section, that these preferred temperatures are determined for the most part, by very short term laboratory experiments. And that they only indicate temperatures fish preferred over temperatures they were acclimated to at the time. Preferred temperatures in this context may or may not indicate biologically desirable temperatures for growth, maturation, reproduction, etc.

50. Section 5.5.2 c. (1) Fishes top of page 5-38.

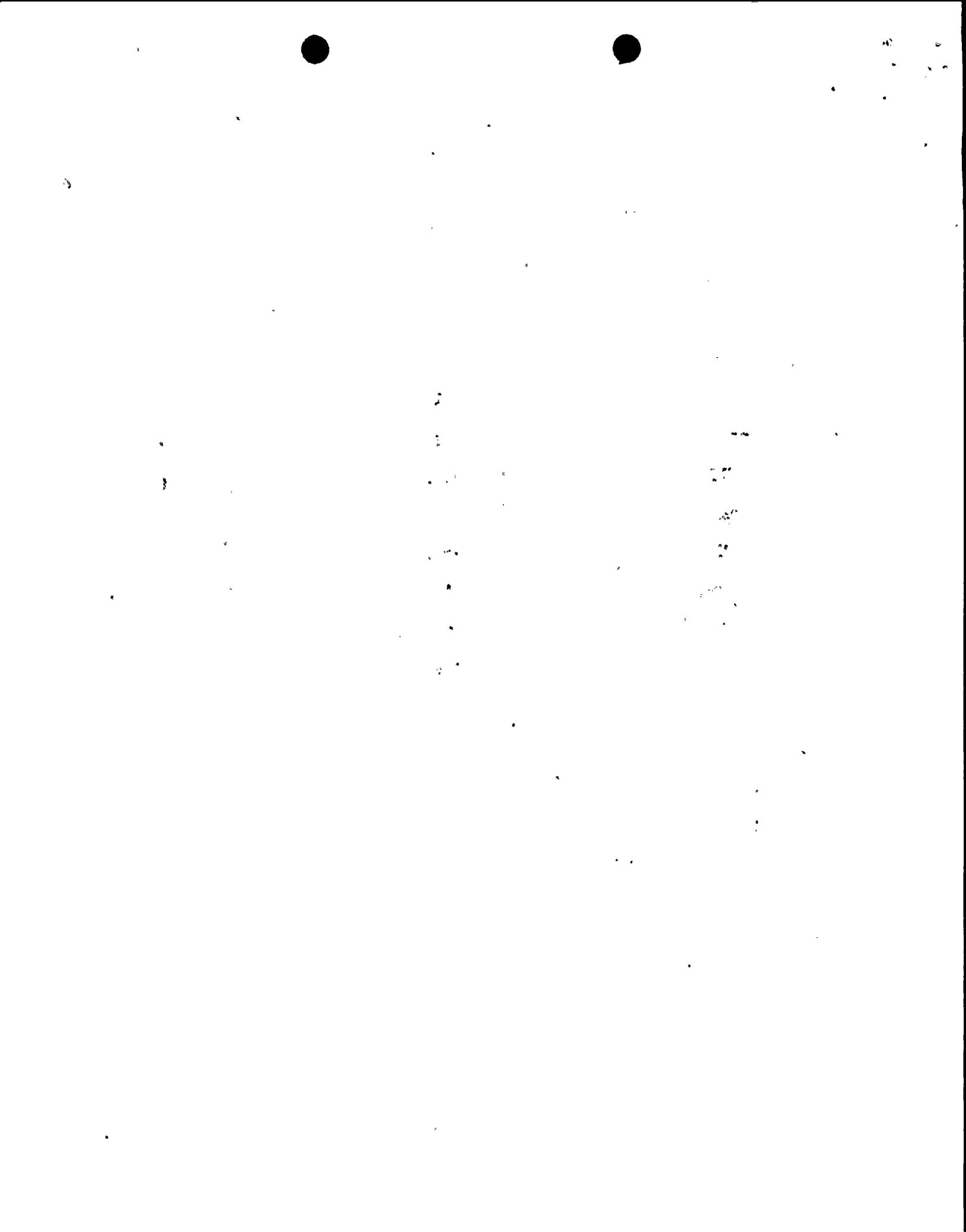
The statement is made that occasional small fish may travel into lethal temperatures. This may or may not have any basis and references for this statement would be appreciated.

51. Section 6.1 Aquatic Monitoring Program. page 6-1

The 3rd sentence of the general statement infers that fish distributions and food preferences are known to some extent. This doesn't seem to be a fact. A better statement might be that..."Only since May 1970, has the applicant collected data that could lead to fish distribution, food..."

52. Section 6.1 c. Fishes 1st paragraph page 6-2.

In all biological monitoring programs, the need for standardization, where desirable, of methods of data recording and analysis with past and on-going



52. (continued)

Lake Ontario studies such as the International Field Year in the Great Lakes and the Department of Environmental Conservation, Cape Vincent studies should be stressed. There are considerable data available and being collected which would be valuable for evaluation of the Nine Mile Point monitoring. However, these could only be used when the Nine Mile Point data were comparable. For example, most studies on the Lake using gill nets indicate that an 11-mesh experimental gill net samples species and sizes the best. This is the gear used by the DEC, Federal studies, and others, however, the applicant has been using a 5-mesh net.

Toward the end of this paragraph, the Staff suggests seining along the shore. Trap nets (frequently tended) would be better to sample this situation.

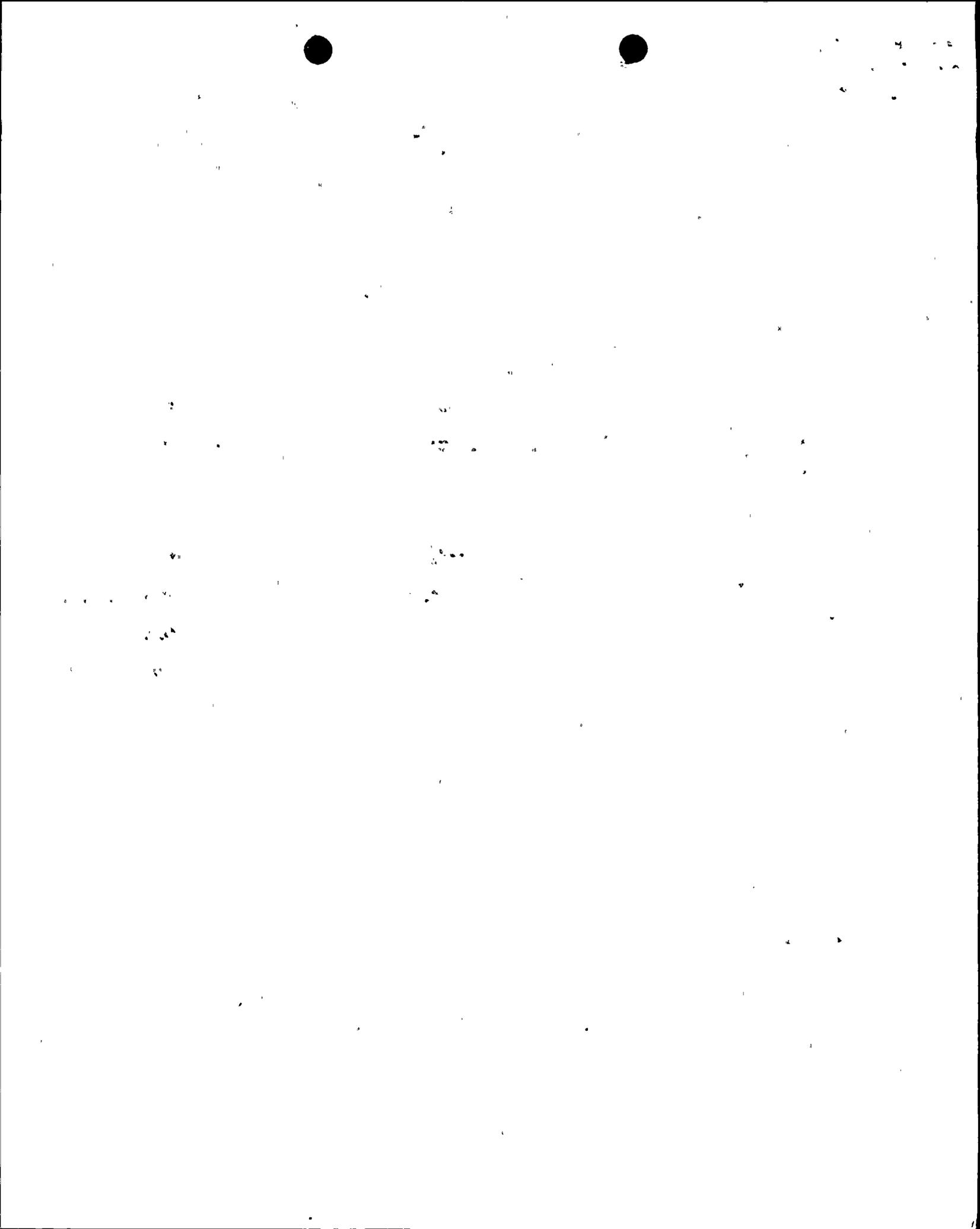
In order to alleviate the possibility of an incomplete or distorted monitoring and assessment program, it is recommended, that the applicant review these programs with this Department, before starting studies, and periodically throughout the study.

53. Section 6.1 c. Fishes, page 6-3, 1st paragraph.

We fully agree with the Staff's statement on the value of echo sounder data. We recommend that further studies be designed to evaluate what data is actually being recorded by the echo sounder, e.g., species, size of fish recorded at various depths, size of fish that are not recorded at various depths, and conditions that alter recording patterns.

54. Section 6.1 c. Fishes, page 6-3, 3rd paragraph.

The food-preference study will have no value if gill netted fish are used. Fish in gill nets tend to loose food in the net and their gut contents give a



54. (continued)

biased view of food habits. Fish for this type of analysis need to be captured and worked up very fast to get an accurate picture of food habits.

In this same paragraph, the 5th line from the bottom, "important species" should not be limited to "commercial" importance.

55. Section 6.1 f. Entrainment Studies, page 6-4..

It should be emphasized that samples be taken with appropriate gear close to and at the level of the intake in the lake as well as the intake and discharge wells.

56. Page 9-9

It is stated that the Applicant has made a specific design study of natural and forced draft cooling towers and that one of the disadvantages of forced-draft towers is more noise. This disadvantage should be quantified in terms of the increased numbers of persons exposed to various sound levels if forced draft cooling towers were utilized.



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