

Dockets

JAN 5 1978

Docket No. 50-286

MEMORANDUM FOR: George W. Knighton, Chief
 Environmental Projects Branch 1, DSE

FROM: Jerry R. Kline, Section Leader
 Terrestrial Resources Section
 Environmental Specialists Branch, DSE

SUBJECT: TERRESTRIAL RESOURCES SECTION RESPONSE TO COMMENTS ON
 INDIAN POINT UNIT 3, DES-CCC

PLANT NAME: Indian Point Station Unit No. 3
 LICENSING STAGE: Post-OL
 DOCKET NUMBER: 50-286
 PROJECT MANAGER: Robert P. Geckler
 DESCRIPTION OF RESPONSE: Response to Comments on DES-CCC
 REVIEW STATUS: Terrestrial Resources Section Review - Complete

Attached are our responses to comments received on Indian Point Unit No. 3
 DES-Closed Cycle Cooling Systems. G. Gears is responsible for the
 development of these responses.

Original Signed by Jerry R. Kline

Jerry R. Kline, Section Leader
 Terrestrial Resources Section
 Environmental Specialists Branch
 Division of Site Safety and
 Environmental Analysis

Attachment:
 Response to Comments

cc: H. Denton
 M. Ernst
 V. Moore
 R. Ballard
 R. Geckler
 G. Gears

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Responses to Comments by the Licensee (PASNY)

Summary and Conclusions

The Staff's position is covered in Section 5.2.2.7(7) and 6.3.3.2. In addition, the staff has pointed out in the FES that restorative actions would be technically feasible although there would be probably no need for them. Monitoring programs could establish whether a need for restorative actions exists after commencement of operations. A technical foundation is, therefore, established which could aid in the resolution of future conflicts if they arise.

The staff recommended in Section 5.2.2.6.b that bird monitoring should be undertaken on one selected tall structure at the Indian Point site. The Staff believes that the proposed Indian Point Unit No. 2 bird monitoring program fulfills this recommendations and, therefore, no additional bird monitoring requirements are warranted.

Chapter 1

Section 1.5 - The Staff has not to date received a final report of the Chalk Point Study Program.

Chapter 3

Section 3.4.3 - The text has been corrected to reflect this comment.

Section 3.6 - No response needed.

Section 5.1.3.2 - 'The Staff has incorrectly assumed that the accumulated deposits obtained were based on the highest humidity observed during the month.'

IP-2 data had been submitted for MDCTs predicting highest drift deposition values if relative humidities exceeded 90% for the entire month. The Staff has changed the text to reflect the IP-3 evaluation utilizing hourly variations in humidity for MDCTs and other tower combinations. As indicated by the licensee's data for IP-3 MDCTs, maximum salt deposition values currently predicted for Indian Point MDCTs would not approach the values predicted previously by the Unit No. 2 licensee.

Section 5.2.2.2 - "The Staff has incorrectly stated that the Boyce Thompson Institute (BTI) estimated "threshold" rates of saline deposit."

The licensee indicates that the BTI goal was to estimate 'the distribution of thresholds for a population of receptors under certain environmental conditions'. The Staff indicated that BTI chamber experiments served to rank order of salt sensitivity of plant species and provide estimates of the amounts of salt required to produce visible foliar damage. The Staff has developed its analysis in subsequent subsections on this salt sensitivity ranking together with estimates of the amounts of salt required to produce visible foliar damage.

Paragraph 1 - "...location of parafilm-covered deposition plates."

Text has been corrected to reflect the more precise location of collectors and relationship between parafilm collectors and leaves.

Paragraphs 3, 5, and 6 - Comments dealt with the 'background concentration of chloride'.

In several experiments reported by the licensee, the Staff points out that 1500 mg/m³ of Cl⁻ is a higher concentration than is expected in the field. The Staff believes this aerosol is properly termed background since the measured level of aerosol in the chamber exceeds the field aerosol levels known to cause damage by a factor of 10-15. The Staff, therefore, termed this aerosol background since it is a variable which is a consequence of the experimental design but not part of the central purpose of the experiment which was the measurement of the effects of deposition (refer also to Indian Point Unit No. 2, CCC-FES, Response 5-15, p. 8-5, August 1976).

Paragraph 7 - Refer to 5-16 and 5-17, IP-2, CCC-FES, p. 8-5, August 1976.

Section 5.2.2.3(a) - The data would support the conclusion that there is a continuous relationship between ambient humidity and plant response under salt stress. The Boyce Thompson report stated: "The lowest exposures were conducted at the relative humidity level which had been found to maximize the injury from saline aerosol" (IP-2, CCC-ER, p. 6-23). The licensee submitted an analysis of biological damage indicating that maximum toxicities occurred at about 85% relative humidity and toxicities decreased by half for 50% relative humidity. Therefore, the Staff believes that salt effects may be at least a factor of two less than the maximum indicated by the licensee's study.

Section 5.2.2.3(b) - The Staff has considered the frequency of drought lasting 14 days in its analysis. Drought is considered to be a factor in enhancing botanical injury; however, the influence of this factor should not be overstated. The maximum drift deposition predicted by the staff for significant areas offsite amounts to only 4.50 kg/ha for the entire month of August for two MCDTs (Figure 5-20(A) FES). Total foliar accumulation for a 14 day dry period is, therefore, only slightly greater than 2 kg/ha before rainfall at the end of the drought washes the leaves. For reasons previously stated, the Staff does not consider the Boyce Thompson value of 1 kg/ha to be a realistic estimation of the distribution of threshold levels for vegetative damage. The true threshold could be a factor of 10 or more higher than this. Thus, a single drought episode of 14 days does not in itself signal the onset of unacceptable consequences. The significance of drought is that it is simply one of the interacting factors in this analysis. If drought periods occur more than once in a season or if a series of dry years occur, the stress naturally increases. This factor interacts with others, however. If mechanical draft towers were selected, for example, higher drift levels combined with successive or extended drought episodes would increase the risk for vegetation and widen the area at risk.

Section 7.1 and 7.3 - The text has been corrected to reflect that no additional offsite land will be required.

The Staff has considered site land use impacts together with construction and operating effects on terrestrial biota in Sections 5.2.1, 5.2.2, 5.2.3 and 5.2.4 and has recommended monitoring programs outlined in Section 6.3.3.2.

Responses to Comments by the New York State Department of Environmental Conservation (NYSDEC)

Table 5-1, p. 5-7 - The Staff has presented extensive calculations of predicted drift depositions in Figures 5-6 to 5-35. The Staff believes that the values presented in its own assessment are reasonable. A logical consequence of accepting cooling towers of any design is the concurrent acceptance of some bounded risk. The staff analysis has placed reasonable bounds on the risk associated with each tower option in the FES. Within these bounds it is reasonable to expect that the specified contingency will be fulfilled on occasion since risk is a probabilistic concept. The Staff's expectation of no damage with MDCTs is, therefore, not negated by the prudent allowance for a margin of error. Further analysis yields the conclusion that the consequences of error do not exhaust opportunities for maintaining a high quality environment since restoration or rehabilitation would be possible.

Section 5.1 - General Comment: MDCT will not cause violations of the suspended particulates standard nor exceed the allowable increment for settleable particulates, but salt fallout will cause vegetation damage.

The Staff addressed the impact of closed-cycle cooling options on vegetation in Section 5.2, noise in Section 5.3, visibility in Section 5.1, and aesthetics in Section 6.3.3.3.

Section 5.2.2.6.a - The Staff has evaluated the addition of salts to determine effects on settleable particulates and has determined that air quality standards are not violated. The NYSDEC concurs with this assessment (NYSDEC Comment on IP-3, DES, October 12, 1977).

Section 5.1.3.1 - The licensee's highest offsite salt deposition rate was predicted to occur 1.2 miles south of the tower within the 200 kg/km² isopleth. This single point deposition value was predicted to occur in an extremely small area and considering the state-of-the-art of all salt deposition prediction models it is reasonable to assume that a higher deposition rate may fall somewhere within the bounded 200 kg/km² isopleth.

General Comments: Fan-assisted natural draft options have been discussed by the Staff in Sections 5.2, 5.3, 6.2 and 6.3.

Section 5.2.1 - This question has been addressed in Section 6.3.2.2 of the FES.

Section 5.2.2.4.b - (a) The prime areas for potential salt damage impacts are north and south of the Indian Point site, along the Hudson River. The Staff places emphasis on impacts to privately owned trees because they are located in areas which were predicted to have the greatest potential for vegetative damage. The Staff has calculated that areas east and north of Peeksville, including Bear Mountain State Park, will receive levels of salt drift insufficient to induce vegetative damage. (b) Operational monitoring will be undertaken as indicated in Summary and Conclusion. (c) Consideration has been given to prevention of drift damage by watering, and the Staff has concluded

that recommendations for the implementation of these types of actions are not warranted at this time.

The Staff has addressed the possible replacement through compensation of affected trees which might be injured beyond recovery in Section 5.2.2.4.b of the FES.

Section 5.2.3.2 - The Staff presented a range of hours of additional icing due to operation of each alternative closed-cycle cooling alternative in Section 5.1.2 and 5.1.3 and 5.2.3.2.

The major icing events were calculated by the Staff to result from MDCT operation onsite.

The Staff concludes that there would be extremely small risk of biological damage due to icing from operation of any of the cooling tower options.

Responses to Comments by the Department of Housing and Urban Development

The Staff has considered the shadowing of sunshine in Section 5.1.1.1 and concludes that data show no detectable changes in hours of bright sunshine due to operation of cooling tower complexes.

Responses to Comments by the Village of Buchanan

The Staff analyses of the salt drift effects on vegetation establishes a perspective in risk. Part of the perspective concludes that concerns for widespread catastrophic damage in the offsite environment are unfounded.

The environment will not be denuded of vegetation regardless of which cooling tower option is chosen. Foliar symptoms similar to salt burn but unrelated to power plant operation already exist on a few trees in the vicinity of Buchanan and Peekskill. The possible effect of added salts in this environment could be to add somewhat to the frequency of occurrence of similar symptoms. A change in frequency of tree loss or foliar symptoms, if they occur at all, may or may not be apparent to a casual observer depending on their magnitude. Monitoring would, therefore, be required to establish with reasonable certainty whether a change actually takes place and, if it does, to quantify its magnitude. Monitoring programs would serve the important practical purpose of establishing a data base to aid in the equitable resolution of possible conflicts if any occur. (Refer also to Indian Point Unit No. 2, FES-CCC, August 1976, pp. 8-34-39.)

F127

Meeting Notice for Meeting on November 18, 1977 re Indian Point
Cooling System Alternative.

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Docket Nos. 50-247
and 50-286

Voss A. Moore, Assistant Director for Environmental Projects, DSE

THRU: G. W. Knighton, Chief, Environmental Projects Branch No. 1
DSE

FORTHCOMING MEETING WITH EPA REGARDING COOLING SYSTEM ALTERNATIVE
FOR INDIAN POINT

Date and Time: November 18, 1977
10 am

Location: Room P-500
7920 Norfolk Avenue
Bethesda, Maryland

Purpose: To discuss potential program
for evaluating cooling system
alternative for Indian Point.

Participants NRC: D. Muller, V. A. Moore,
G. Knighton, R. Ballard
R. Geckler

ORNL: T. Row

EPA: H. Lunenfeld

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Robert P. Geckler, Project Manager
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

July 21, 1977

F 176

Docket File 50-286

Docket Nos. 50-3, 50-247
and 50-286

MEMORANDUM FOR: George W. Knighton, Chief
Environmental Projects Branch No. 1, DSE

FROM: Ronald L. Ballard, Chief
Environmental Specialists Branch, DSE

SUBJECT: TECHNICAL ASSISTANCE REQUEST - INDIAN POINT, UNIT NOS.
1, 2 & 3, ENVIRONMENTAL TECHNICAL SPECIFICATION
CHANGES (TAC 4532)

PLANT NAME: Indian Point Nuclear Generating Plant
LICENSING STAGE: Licensed
DOCKET NUMBERS: 50-3, 50-247, and 50-286
RESPONSIBLE BRANCHES: EPB-1
PROJECT MANAGER: R. P. Geckler
DESCRIPTION OF RESPONSE: Environmental Impact Appraisal for Chemical
and Water Quality ETS Changes
REVIEW STATUS: Environmental Specialists Branch - Complete

The Aquatic Resources Section has completed a review of the environmental impacts associated with the changes to the Indian Point, Unit Nos. 1 and 2, Environmental Technical Specifications. The proposed changes would result in the replacement of the current ETS for Unit Nos. 1 and 2 with the existing ETS for Unit No. 3. The review of the environmental effects of the proposed changes was requested by your memorandum dated March 31, 1977. The ETS sections covered by the attached appraisal are those addressing Limiting Conditions for Operation for chemical parameters and their associated Monitoring Requirements.

We have found that the proposed changes to ETS Sections 2.3 and 3.3, and their subsections will not result in significant environmental impact nor will they result in impacts not evaluated by the staff either in the FES for Indian Point, Unit No. 2, or the FES for Indian Point, Unit No. 3.

*Drop
2*

George W. Knighton

- 2 -

This review was performed by J. Lehr.

Ronald L. Ballard
Ronald L. Ballard, Chief
Environmental Specialists Branch
Division of Site Safety and
Environmental Analysis

Attachment:
Environmental Impact
Appraisal

cc: w/attachment
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Environmental Impact Appraisal for Indian Point
Environmental Technical Specifications Changes

1. Description of Proposed Action

The Consolidated Edison Company (Con Ed) has requested changes to the Environmental Technical Specifications (ETS) for its Indian Point Nuclear Generating Plant, Units 1, 2 and 3. Con Ed proposes the deletion of the existing ETS for Units 1 and 2 and their replacement with the existing Unit 3 ETS. This would create a uniform set of ETS for the facility (i.e., a single set of station ETS). Those Units 1 and 2 and Unit 3 ETS sections covered by this appraisal are 2.3, 2.3.1, 2.3.2, 2.3.3, 2.3.4, 3.3, 3.3.1, 3.3.2, 3.3.3 and 3.3.4.

Sections 2.3 require that all station liquid chemical discharges be diluted with the circulating cooling water effluent during release. Sections 2.3.1 place limiting conditions for operation on the frequency, duration, timing and concentration of total residual chlorine discharges from the units. Sections 2.3.2 limit the total yearly discharge amount and instantaneous discharge concentrations of corrosion inhibitors used in the units. Sections 2.3.3 specify the limits of discharge concentrations and manner of disposal for all other nonradioactive liquid, solid and gaseous releases from the units. Sections 2.3.4 specify the limits on the hydrogen ion concentration of all plant discharges and establishes a requirement for neutralization of all acidic and basic regenerant releases prior to discharge.

Those sections of ETS Section 3.0, Monitoring Requirements, covered by this appraisal establish the corresponding monitoring frequencies, locations and methods for the parameters limited under ETS Section 2.3, Limiting Conditions for Operation - Chemical, covered by this appraisal.

2. Environmental Impacts of Proposed Action

A. Proposed Changes to Limiting Conditions for Operation

The existing Environmental Technical Specifications for Indian Point, Units 1 and 2, contain Limiting Conditions for Operation for chemical releases and water quality parameters which have as a partial basis the staff analysis presented in the FES for IP-2. These analyses took into consideration the combined effects of the operation of both Units 1 and 2.

Similarly, the existing Environmental Technical Specifications for Indian Point Unit 3 contain Limiting Conditions for Operation for chemical releases and water quality parameters which have as a partial basis the staff analysis presented in the FES for IP-2 and IP-3. These analyses, however, took into consideration, the combined effects of the operation of Units 1, 2 and 3.

Therefore, these ETS Sections contain a great deal of similarity and, in fact, many of the Limiting Conditions for Operation have the same Specification (i.e., numerical limits). We have examined

these ETS sections, and, where they have been found to be different, have assessed the potential environmental impact of replacing the existing Units 1 and 2 ETS section with the corresponding Section from the Unit 3 ETS. These assessments are presented below, arranged according to section.

Section 2.3 Chemical

Replacement of the existing Unit 1 and 2 ETS Specification 2.3 with that of the existing Unit 3 ETS will not result in any change in the operation of these units. Adoption of the proposed change will require that all station chemical discharges be diluted during release with a minimum of 100,000 gpm circulating cooling water flowrate. This is the same requirement that exists presently for Units 1 and 2. Therefore, there will be no change in environmental impact from adoption of the proposed change.

Section 2.3.1 Chlorination of the Circulating System

The Specifications for the respective ETS for Units 1 and 2 and Unit 3 are generally the same. The differences that do exist in the two sets of ETS concern the total duration of chlorination allowed at the plant, the frequency of release and the allowable release concentration.

The chlorination specification proposed for adoption for IP Units 1 and 2 is presently written in such a way as to apply to all three units at the site. Its adoption for Units 1 and 2 will result in residual chlorine discharges from the site for up to 9 hours per week total. However, the allowable weekly frequency of chlorination of up to three periods (of up to one hour's duration) per week remains the same as presently authorized under the IP Units 1 and 2 ETS. This chlorination schedule has been reviewed and found acceptable by the staff in the IP-3 FES Section V.C.2.a.(3). Therefore, there will be no additional environmental impact or any unreviewed environmental impact resulting from this change.

The proposed change will permit a maximum of two chlorination periods of up to one hour each to occur during a twenty-four hour period. This limitation would apply to the Indian Point Nuclear Generating Plant and not to each individual unit separately. The existing limitation for Indian Point Units 1 and 2 together restricts the total time for chlorination to one hour during any twenty-four hour period. With the addition of the Indian Point Unit 3 cooling water discharge, (which will be chlorinated) to the combined Units 1 and 2 discharge as presently allowed under the ETS, the receiving water biota will be exposed to the same chlorination stress as that which would be experienced under adoption of the proposed ETS change.

The proposed change will also provide an additional limitation on residual chlorine discharges from the IP Units 1 and 2, requiring that concentrations of total residual chlorine not to exceed an average value of 0.2 ppm measured at the confluence of the discharge canal and the Hudson River. Adoption of this change for IP Units 1 and 2 only has the potential to reduce environmental impact from the situation allowed under the present ETS, whereby total residual chlorine concentrations may be as high as 0.5 ppm throughout the chlorination cycle.

In the FES for IP-3 Section V.D.2.c(3), the staff evaluated this chlorination procedure which may result in a residual chlorine discharge from the plant for more than 60 minutes in a twenty-four hour period. The staff's conclusion was that even with the mitigating measures, such as chlorination only during daylight hours and chlorinating during maximum tidal flows (which will remain in effect under the proposed change), the level of impact was difficult to determine because of uncertainty over the exact duration and concentration of exposure for the receiving water organisms. Consequently, the staff required the licensee to conduct a study to evaluate the effects of chlorine residuals and chlorinated compounds on aquatic biota in the vicinity of Indian Point (IP-2 FES, Conclusion 7.d.(3); IP-3 FES Conclusion 8.b.(4)).

Evidence on the degree of impact resulting from the chlorination procedures now practiced at IP Units 1 and 2 is presented in the progress report of the Hudson River Ecosystem Studies: Effects of Temperature and Chlorine on Entrained Hudson River Organisms.¹

These studies are examining the effects of temperature and residual chlorine, both singly and in combination, in both laboratory and in situ studies at IP Unit 2 on aquatic organisms at various trophic levels in the Hudson River. (These studies are required as part of the existing IP Units 1 and 2 and IP Unit 3 ETS.) These in situ studies indicate that, when the "standard plant chlorination value" of 0.5 ppm TRC is achieved at the condenser (half) outlet, levels of total residual chlorine present at the end of the discharge canal and in the mixing zone in the river are sufficiently low to not adversely affect the receiving water biota after either chronic or acute exposures. These studies were performed for indigenous Hudson River aquatic species and included both plume entrainment (i.e., plume transit) and discharge canal exposures.

These exposures on phytoplankton, microzooplankton, macrozooplankton, and fish were for one hour nominally, with some exposures being of shorter durations, according to the duration of chlorination of the units and the degradation of residual chlorine to below the detection limit (0.03 mg/l) due chemical processes in the receiving waters. Exposures to residual chlorine for periods of two and four hours have been conducted in static laboratory bioassay studies for fish (striped bass) and phytoplankton, respectively. These studies

indicate that the levels of total residual chlorine that produced either acute or latent (i.e., 72 hour) mortalities exceed the levels likely to be present in either the discharge canal or the mixing zone in the Hudson River. Further laboratory, and in situ plume transit and discharge canal chlorination studies are continuing during the first year of operation of Indian Point Unit 3, providing confirmatory information on the effects of residual chlorine discharges of up to two hours per day.

The staff believes that adopting the ETS for residual chlorine of Indian Point Unit 3/or Indian Point Units 1 and 2 will not result in an unacceptable impact nor an impact not evaluated by the staff (See IP-3 FES Sec. V.D.2.c.(3)).

Section 2.3.2 Corrosion Inhibitors

The proposed change to the Limiting Conditions for Operation of this section would result in a more restrictive limitation on the discharge of chromium from the IP Units 1 and 2. That is, the proposed change would limit the maximum concentration of both trivalent and hexavalent forms of chromium to 0.05 ppm and the total annual release of these two forms to 100 lbs/yr, whereas, the existing ETS for IP Units 1 and 2 limit only the hexavalent form to 0.05 ppm and allow annual releases to reach 11,000 lbs per year. Thus, the proposed change will result in a reduction in potential impact resulting from the discharge of this toxic metal.

Section 2.3.3 Other Chemicals Which Affect Water Quality

The proposed ETS change would impose different effluent limitations on some parameters in the IP Units 1 and 2 discharge, would delete the limitations on other parameters and would add additional parameters to be controlled. The staff's assessment of the environmental impacts of these proposed changes are discussed below:

The existing ETS for IP Units 1 and 2 require that lithium hydroxide be limited to a concentration of 0.001 mg/l at the confluence of the discharge canal and the Hudson River. The proposed change would allow these same concentrations to reach 0.01 mg/l. The FES for IP Unit 2, Sections III.E.3.a.(1), V.B, V.D.1.c and Appendix V-1 evaluated chemical discharges resulting from the operation of IP Units 1 and 2, specifically a concentration of lithium hydroxide of up to 0.01 mg/l in the discharge canal and concluded that this level would not result in unacceptable environmental impact or unacceptable impact on water use of the Hudson River. Therefore, we conclude that this change in the ETS will not result in an unacceptable impact nor an impact not evaluated by the staff.

The proposed change would allow the pH of the discharge from IP Units 1 and 2 to vary between 6.0 and 9.0, inclusive, which is less restrictive than the existing ETS range of 6.5 to 8.5, inclusive. The U.S. Environmental Protection Agency, in its publication Quality Criteria for Water², recommends a water quality standard for pH for the protection of aquatic life in an estuarine environment of 6.5 to 9.0, inclusive. Also recommended is the avoidance of rapid pH fluctuations in pH due to waste discharges. The EPA has also published Effluent Limitations and Guidelines for the Steam Electric Generating Point Source Category³. These regulations describe minimum standards

of performance for the industry for the protection of aquatic species in and on the receiving water body. The guideline for pH is the range 6.0 to 9.0, inclusive, which corresponds to the range proposed for IP Units 1 and 2 (already in effect for IP Unit 3). The rationale for this effluent limitation is that, aside from being attainable by the industry, unacceptable harm to the receiving water biota due to differences in discharge and receiving water pH is not likely because of the available buffering capacity of most natural waters.

The staff evaluated the discharge of those chemicals likely to cause an alteration in the pH of the discharge (IP Unit 2 FES Appendix V-1). The results of the evaluation indicated, and were supported in part by pH measurements made during releases of the chemicals from IP Unit 1, that changes in effluent pH to the extent that effects on the aquatic biota of the receiving waters would not be expected due to the buffering capacity of the cooling water. Therefore, we conclude that this change will not result in unacceptable environmental impact nor an impact not evaluated in the FES.

The proposed change would result in the deletion of controls on two parameters, sodium hydroxide (10 ppm max), and sulfuric acid (10 ppm max), which are of significance in the IP Units 1 and 2 discharge because of their potential to alter the pH of the cooling water (IP-2 FES Appendix V-1). As indicated in the discussion for pH above, release of these chemicals in the concentrations

anticipated by plant design and operation were not expected to produce any effects on the aquatic biota of the Hudson River. Actual operating experience at Unit 1 has confirmed this assessment. Therefore, we conclude that the deletion of these limits will not result in an unacceptable environment impact nor an impact not assessed by the staff in the FES for IP-2.

Another limitation to be deleted from the IP Units 1 and 2 ETS under the proposed change is the 5 ppm maximum limit on soda ash (i.e., sodium carbonate). This discharge has been evaluated by the staff in the IP-2 FES (Appendix V-1 and Section V.D.1.c.) and found to be at a level that was an order of magnitude below the minimum toxic level reported for the chemical. Therefore, the staff found that there was no potential for adverse environmental impact in the receiving waters from this chemical. We conclude that the deletion of this limitation will not result in an unacceptable environmental impact nor an impact not assessed by the staff in the FES for IP-2.

Another limitation that would be affected by the proposed change is the existing limitation of 0.5 ppm minimum concentration of dissolved oxygen in the discharged cooling water. It is proposed that the limitation be replaced by a monitoring program, with a reporting requirement for notification of the NRC whenever the dissolved oxygen

concentration falls below 0.5 ppm. In the FES for IP Units 1 and 2, the staff concluded that (FES Section V.D.1.b) dissolved oxygen concentrations in the discharge may, at times be "below tolerable limits". However, the staff reached this conclusion based on the observed natural occurrences of dissolved oxygen in the intake waters being well below the saturation values for the recorded temperature. Furthermore, the analysis in the IP-2 FES (Appendix V-1.C.) indicated that the passage of the cooling water through the plant was not likely to reduce the concentration of dissolved oxygen in the cooling waters and that it would be expected that there would be "little loss in dissolved oxygen" as the temperature of the effluent decreases in the mixing zone. The staff therefore recommended that the licensee monitor the concentration of dissolved oxygen in the discharge waters. We conclude that the proposed change is consistent with the staff's analysis and recommendations in the FES and that this change will not result in an impact not already evaluated.

The final set of proposed changes for this section of the IP Units 1 and 2 ETS involve the deletion of the discharge limitation of 0.05 ppm maximum hexavalent chromium and its replacement by a 0.05 ppm limitation on total chromium. Our assessment of the impact of this proposed change is presented above under Section 2.3.2, Corrosion Inhibitors. This change will not result in increased environmental impact.

Section 2.3.4 Hydrogen Ion

The proposed change to the IP Units 1 and 2 ETS for this section is to change the allowable pH range of the circulating water discharge from a range of 6.5 to 8.5, inclusive, to a range of 6.0 to 9.0, inclusive. The assessment of the environmental impact of this change is presented above, under Section 2.3.3, Other Chemicals that Affect Water Quality. This change will not result in increased environmental impact.

B. Proposed Changes to Monitoring Requirements

Section 3.3.1 Chlorination of the Circulating Water System

The existing specification of this section of the IP Units 1 and 2 ETS require the amperometric method of analysis be used for the determination of total residual chlorine. The proposed change would allow the licensee to use any method that is approved by ASTM or Standard Methods for this measurement. (the amperometric method is but one of several methods approved by these references). However, the proposed change would require that whatever method is used have the same accuracy (± 0.1 ppm) and precision (± 0.05 ppm) as presently required by the ETS for IP Units 1 and 2. Therefore, the additional flexibility permitted by the proposed change remains limited in accuracy and precision to that determined by the staff

as necessary for demonstration of compliance with the Limiting Condition for Operation. We conclude that there will be no increased environmental impact from this change.

Section 3.3.2 Corrosion Inhibitors

The proposed change to this section would require the licensee to use a method of analysis approved by ASTM or Standard Methods.

The existing requirement simply states "using a standard method of analysis". The proposed change clarifies the intent of the specification and will remove the ambiguity of the requirement.

There will be no increased environmental impact resulting from this change.

Section 3.3.4 Hydrogen Ion

The proposed change would delete the separate requirement to sample the circulating water discharge pH during discharge of regenerant wastes at both 1 m and 3 m depths and to calculate the pH change in the circulating water both before and after discharge of the regenerant wastes. In its place would be a requirement to measure the pH of the discharge from the Neutralization Facility during discharge of regenerant or other wastes.

We conclude that monitoring of the regenerant waste stream at its source, along with the monitoring of the well mixed (with respect to the regenerant wastes and cooling waters) and well buffered

discharge canal waters required under ETS Section 2.3.1 and 3.3.1 will provide sufficient assurance that the objective of limiting the pH range of the plants' discharge to that compatible with aquatic life will be met.

3. Conclusion and Basis for Negative Declaration

We have reviewed the proposed technical specification change associated with this amendment. We have found the environmental impact of operation under these revised specifications will be no greater than that evaluated in the Final Environmental Statement for Unit 2, that the changes will not significantly affect the quality of the human environment, and that a negative declaration is appropriate.

REFERENCES

1. Consolidated Edison Company of New York; Hudson River Ecosystem Studies-
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2. U. S. Environmental Protection Agency; Quality Criteria for Water; 1976.
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Generating Point Source Category Effluent Guidelines and Standards;
FR Vol. 39, No. 196, October 8, 1974.