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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Louis J. Carter, Chairman
Frederick J. Shon
Dr. Oscar H. Paris

In the Matter of	)	
CONSOLIDATED EDISON COMPANY OF NEW YORK, INC. (Indian Point, Unit No. 2)	)	Docket Nos. 50-247 SP
	)	50-286 SP
POWER AUTHORITY OF THE STATE OF NEW YORK (Indian Point, Unit No. 3)	)	June 16, 1982

LICENSEES' FIRST SET OF INTERROGATORIES AND DOCUMENT REQUESTS UNDER COMMISSION QUESTION 1 TO UNION OF CONCERNED SCIENTISTS/NEW YORK PUBLIC INTEREST RESEARCH GROUP, INC., FRIENDS OF THE EARTH, INC., NEW YORK CITY AUDUBON SOCIETY, AND PARENTS CONCERNED ABOUT INDIAN POINT

Preface

Pursuant to 10 C.F.R. § 2.740b, the Consolidated Edison Company of New York, Inc. and the Power Authority of the State of New York, licensees, request that intervenors Union of Concerned Scientists/New York Public Interest Research Group, Inc., Friends of the Earth, Inc., New York City Audubon Society, and Parents Concerned About Indian Point serve upon counsel for the licensees sworn answers to the following interrogatories and document requests.

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PRELIMINARY MATTERS

As used herein:

1. "Intervenor" refers to the Union of Concerned Scientists (UCS), New York Public Interest Research Group, Inc. (NYPIRG), Friends of the Earth, Inc. (FOE), New York City Audubon Society (Audubon), and Parents Concerned About Indian Point (Parents), or any of their sponsors or supporters, individually and collectively.

2. All intervenors should respond to the interrogatories and document requests numbered 1-10. In addition, UCS/NYPIRG should respond to those numbered 11-84, FOE/Audubon should respond to those numbered 85-108, and Parents should respond to those numbered 109-113.

3. Whenever the terms "Indian Point" or "Indian Point units" are used, the intervenor should identify and state with particularity any differences existing between the two operating facilities with respect to the matter(s) requested.

4. Whenever the intervenor is asked to state, specify or quantify the probability of the occurrence of an event, the intervenor should state the probability that the event will occur, set forth the method by which the probability was calculated, and set forth the data used in the calculation.

5. When responding to the interrogatories and document requests, the intervenor should set forth in full each such interrogatory and document request before responding thereto, and should identify each person who prepared the response to that interrogatory or document request.

6. "Document" includes all writings and recordings in the possession, custody or control of the intervenors, whether sent or received or neither. "Writings" and "recordings" consist of letters, words, symbols, numbers, or their equivalent, set down by handwriting, typewriting, printing, xerography, photostating, photography, magnetic impulse, mechanical or electronic recording, or other form of data compilation, and include but are not limited to papers, books, correspondence, telegrams, cables, telex messages, memoranda, notes, notations, work papers, transcripts, minutes, reports, and recordings of telephone or other conversations, or of interviews, or of conferences, or of other meetings (including, but not limited to meetings of boards of directors or committees thereof), affidavits, statements, summaries, opinions, reports, studies, analyses, evaluations, contracts, agreements, journals, statistical records, desk calendars, appointment books, diaries, lists, tabulations, sound recordings, financial statements, computer printouts, data processing input and output, microfilms, all other records kept by electronic, photographic or mechanical

means, and things similar to any of the foregoing however denominated by intervenors.

Unless otherwise specified, a request for a document includes a request for the original thereof. If data are stored in a computer or similar device, any printout or other input readable by sight which reflects the data accurately is an "original."

If the original or the non-identical copy cannot be produced, a duplicate, specifically identified as a duplicate, may be produced.

Documents "in the possession, custody, or control of the intervenors" include but are not limited to documents which the intervenors have a legal right to obtain.

"Documents" shall also mean copies of documents, even though the originals thereof are not in the possession, custody or control of the intervenors.

7. All references to the intervenors, organizations, firms, corporations, agencies, or other entities include members, officers, directors, contractors, grantees, proprietors, partners, servants, or agents of same, past and present, and persons in active concert or participation with them.

8. Document requests concerning Indian Point include requests for documents pertaining to Unit 2 and/or Unit 3.

9. "Identify" means:

a. with respect to a natural person, name, present or last known home or business address, present or last known job title or position, and the dates of tenure in that position;

b. with respect to a document, the type of document (for example, letter, record, list, memorandum, memorandum of telephone or face-to-face conversation), date of the document, name of person who prepared the document, and name of person for whom the document was prepared or to whom it was delivered.

10. "Person" includes individuals, organizations, the Nuclear Regulatory Commission (Commission) and other federal agencies, state agencies, corporations, partnerships, associations, joint ventures, or other actual or legal entities. References to entities include (and references to individuals include status as) members, sponsors, officers, employees, directors, proprietors, partners, or agents, both past and present.

11. Whenever the intervenor is asked to specify its response and/or to state the ground or basis for the allegation, claim, belief, and/or contention, it should:

a. set forth each and every fact and the source of each and every fact upon which the allegation, claim, belief, and/or contention is based;

b. describe in detail the reasoning which supports the allegation, claim, belief, and/or contention;

c. identify all documents and communications containing any evidence or information bearing upon or relating to the allegation, claim, belief, and/or contention; and

d. identify all persons having any information or knowledge supporting or relating to the allegation, claim, belief, and/or contention.

INTERROGATORIES AND DOCUMENT REQUESTS

Interrogatory Nos. 1-10 Are Addressed to All Intervenors and Refer to Board Contention 1.1

1. Define, as used in Atomic Safety and Licensing Board (Board) Contention 1.1, "risk" and "high safety risk," and state the level at which a risk becomes a high safety risk.

2. Provide all documents which contain and/or pertain to evaluations or criticisms of the licensees' Indian Point Probabilistic Safety Study.

3. State whether intervenors believe that the use of probabilistic risk assessment methodology in evaluating the risks to the public posed by nuclear power plants is an appropriate method of evaluating such risks.

4. If the answer to Interrogatory No. 3 is no, state the basis for that answer and provide all documents which support that answer.

5. Specify the intervenors' self-generated evaluations or criticisms of NUREG-0850 (Preliminary Assessment of Core Melt Accidents at the Zion and Indian Point Nuclear Power Plants and Strategies for Mitigating Their Effects), and provide all documents which contain and/or pertain to such evaluations or criticisms.

6. Specify the degrees of risks encompassed in Board Contention 1.1 which are acceptable to intervenors.

7. Provide all documents which refer or pertain to non-nuclear risks in the vicinity of the Indian Point units.

8. Specify the maximum level of radiation to which the public may be exposed without harm.

9. With respect to each person whom the intervenors intend to call as a witness regarding Commission Question 1 in this proceeding:

a. identify by name, address and affiliation each such person;

b. state the educational and professional background of each such person, including occupation and

institutional affiliations, publications, and papers;

c. identify the contention as to which each such person will testify;

d. describe the nature of the testimony which will be presented by each such person, including an identification of all documents which the person will rely upon in the testimony; and

e. identify by court, agency, or other body, and by proceeding, date, and subject matter all prior testimony by each such person.

10. Identify all other persons not included in Interrogatory No. 9 who have assisted in preparation of any analyses or testimony for this proceeding.

Interrogatories Addressed to UCS/NYPIRG

Interrogatory Nos. 11-23 Refer to
UCS/NYPIRG Contention I(B)(5)

11. Define:

a. prompt fatalities;

b. early fatalities;

c. early illnesses;

d. latent illnesses;

e. fatal cancers;

f. non-fatal cancers;

g. thyroid nodules; and

h. genetic defects.

12. State how UCS/NYPIRG intends to interpret "genetic effects" as used in Board Contention 1.1.

13. Regarding accidents at Indian Point and each analysis used or referred to in calculating the resulting health effects listed in UCS/NYPIRG Contention I(B)(5) and Board Contention 1.1:

a. specify the types of nuclear accidents or accident scenarios considered, quantify the probability of the occurrence of each accident, and if such quantification is generic or for another plant, state how the quantification would vary for Indian Point, identify the features or conditions at Indian Point which vary the quantification, state the basis for this answer, and provide all documents which contain and/or pertain to such quantification;

b. describe the fission product inventory within the containment, including type, chemical forms and quantities of isotopes, for each accident considered;

c. specify the source reduction factors used to calculate plateout, washout, filtering, and other fission product removal processes for each accident considered;

d. specify the release categories assumed;

e. specify all mechanical and structural containment failure modes assumed and the time of such failures relative to the initiation of each accident scenario, and provide all documents which contain and/or pertain to these analyses;

f. state the probability of the occurrence of each failure described in Interrogatory No. 13e;

g. specify all assumptions made in the analysis concerning containment safeguard features and calculations of the availability of each feature;

h. specify all action(s) an operator can take to terminate a degraded core accident before vessel failure occurs;

i. specify the pressures and temperatures assumed and/or calculated for the containment during severe accidents, specify all other assumptions, both conservative and non-conservative, and specify the effects of both the conservative and non-conservative assumptions upon the probability of the release of radiation;

j. specify the accident progressions which form the basis of the calculations and assumptions described in Interrogatory No. 13i, and provide all documents which contain and/or pertain to such calculations;

k. specify the containment leakage rate which forms the basis of the calculations and assumptions described in Interrogatory No. 13i;

l. state the degree of radiation exposure assumed to produce the health effects;

m. specify how special population groups, including but not limited to persons who are deaf, blind, too young to understand instructions, or who do not speak English, were treated in the analyses;

n. specify the demographic and population distributions which were utilized;

o. specify the meteorological dispersion models and measurements which were utilized, and provide all documents which contain and/or pertain to these analyses;

p. specify the geographic area(s) considered;

q. specify the sizes of the assumed plume exposure pathway and the assumed ingestion pathway;

r. specify the protective measures assumed, including but not limited to evacuation and sheltering;

s. specify the populations assumed to be evacuated, the assumed rates and paths of evacuation, and the assumed time estimates for commencing evacuation with respect to:

i. the time of release of radiation after the initiating event,

ii. the duration of the release of radiation, and

iii. notification of appropriate governmental officials by the licensees;

t. state whether different age groups were treated differently with respect to evacuation;

u. specify the number of persons assumed to be sheltered within the plume and the ingestion pathways;

v. specify the assumed time estimates for commencing sheltering, the assumed duration of sheltering, and the assumed degree of exposure reduction achieved as a result of sheltering; and

w. specify the degree to which probabilistic analysis was considered with respect to meteorological conditions, containment failure, and accident scenarios, and provide all documents which contain and/or pertain to these analyses.

14. State the basis for the allegation that appropriate emergency action levels (EALs), which would allow prompt recognition of the range of accidents at Indian Point, have not been established.

15. Specify the EALs which UCS/NYPIRG considers appropriate for Indian Point, and state the basis therefor.

16. Define "heroic emergency measures" as used in UCS/NYPIRG Contention I(B)(5), and state the basis for this answer.

17. Specify the means by which delay in any or all of the six steps to be followed in taking protective action(s)

may be avoided.

18. If the answer to Interrogatory No. 17 is that there are no such means, state the basis for that answer and provide all documents which support that answer.

19. Regarding the delay described in Interrogatory No. 17, state why such delay is assumed and quantify the impact of such delay upon the analyses calculating the health effects listed in Interrogatory No. 11.

20. State the basis for the allegation that unmonitored radioactivity release pathways may exist at Indian Point, and list all such pathways.

21. Specify how radiation in the pathways described in Interrogatory No. 20 should be handled in terms of taking appropriate protective action(s).

22. Specify the ways in which licensees fail to comply with Regulatory Guide 1.97, Revision 2.

23. State the facts upon which UCS/NYPIRG bases its claim that human exposure to radiation results in genetic defects.

Interrogatory Nos. 24-26 Refer to
UCS/NYPIRG Contention III(B)

24. Specify the types of nuclear accidents or accident scenarios which form the basis of or are referred to in UCS/NYPIRG Contention III(B), quantify the probability of the occurrence of each accident, and if such quantification

is generic or for another plant, state how the quantification would vary for Indian Point, specify the features or conditions at Indian Point which vary the quantification, and state the basis for this answer.

25. Specify the adverse consequences of accidents which would increase under severe accident conditions due to the alleged existence of emergency planning deficiencies as stated in the basis for UCS/NYPIRG Contention III(B).

26. Specify the severe accident conditions which would cause the increase in adverse consequences described in Interrogatory No. 25.

Interrogatory Nos. 27-40 Refer to
UCS/NYPIRG Contention III(D)

27. Specify the types of nuclear accidents or accident scenarios which form the basis of UCS/NYPIRG Contention III(D), and quantify the probability of the occurrence of each accident.

28. Define, as used in UCS/NYPIRG COntention III(D):

a. unacceptable threat to the public health and safety; and

b. unacceptable immediate and long-term consequences.

29. Specify what UCS/NYPIRG believes to be the acceptable immediate and long-term consequences of an accident at Indian Point as described in Interrogatory No. 27.

30. Provide all documents which contain and/or pertain to reports or calculations performed by Dr. Jan Beyea and/or Brian Pelanik on radiological risks from an accident at Indian Point, or which were referred to or relied upon by Dr. Beyea and/or Mr. Pelanik in performing such calculations.

31. Specify the number of prompt and early fatalities, illnesses and injuries which would result out to at least five miles from the Indian Point site should evacuation require 12 hours, according to the calculations of Dr. Jan Beyea and/or Brian Pelanik.

32. Specify the number of immediate and early fatalities described in Interrogatory No. 31 which were calculated by persons other than Dr. Jan Beyea and/or Brian Pelanik, and identify such persons.

33. Specify the assumptions of Dr. Jan Beyea and/or Brian Pelanik regarding the present state of emergency preparedness which form the bases of the calculations described in Interrogatory No. 31.

34. Specify the assumptions of Dr. Jan Beyea and/or Brian Pelanik which form the basis of the statement that the evacuation described in Interrogatory No. 31 may require 12 hours.

35. Specify the assumptions of Dr. Jan Beyea and/or Brian Pelanik regarding operator action(s) which form the bases of the calculations described in Interrogatory No. 31.

36. Specify the meteorological conditions which form the basis for the allegation that persons located in the New York City metropolitan area would be subjected to life-threatening levels of radiation in the event of an accident at Indian Point.

37. Specify the level of radiation exposure, including but not limited to that which is life-threatening, to which persons located in the New York City metropolitan area would be subjected under adverse meteorological conditions.

38. Regarding the allegation described in Interrogatory No. 36:

a. state the probability of the occurrence of the accident upon which the allegation is based;

b. state the probability of the occurrence of the meteorological conditions upon which the allegation is based; and

c. state the combined probability of the occurrence of the accident and of the meteorological conditions upon which the allegation is based.

39. Specify the basis for the allegation that no feasible interim measures can be adopted to alleviate the emergency situation described in Interrogatory No. 36, and provide the analysis therefor.

40. With regard to the analysis described in Interrogatory No. 39:

a. state whether shielding of the population by means including but not limited to buildings and subways was considered, and if so, specify the percentage of the population shielded and the factors reducing exposure of the population to radiation;

b. state whether the analysis assumed the giving of advance notice;

c. specify the time assumed for transportation of radioactive material(s) from Indian Point to New York City;

d. specify the amount of radioactive material initially contained within the plume which was used to calculate the alleged degree of radiation exposure; and

e. specify whether the fact that inclement weather causes people to shield themselves was included in the analysis or analyzed separately, and if either was done provide all documents which pertain thereto.

Interrogatory Nos. 41-62 Refer to
UCS/NYPIRG Contention IV(A)

41. Specify the types of nuclear accidents or accident scenarios which form the basis of UCS/NYPIRG Contention IV(A), and quantify the probability of the occurrence of each accident.

42. State whether UCS/NYPIRG defines contamination in terms of surface dose rate or other measurable parameters.

43. If the answer to Interrogatory No. 42 is yes, specify the parameter and value used.

44. If the answer to Interrogatory No. 42 is no, define contamination as used in the basis for UCS/NYPIRG Contention IV(A).

45. Specify the geographic areas described in the basis for UCS/NYPIRG Contention IV(A) for which contamination is assumed.

46. State how long the areas described in Interrogatory No. 45 are assumed to be contaminated.

47. Specify the assumptions, methods, models, and data used to estimate the economic effects from nuclear incidents originating at Indian Point.

48. State the basis for the allegation that neither the metropolitan New York City region nor the nation could care for persons irradiated and/or contaminated as a result of a severe accident at Indian Point.

49. Regarding the allegation described in Interrogatory No. 48, specify:

a. the decor amination measures assumed;

b. the effectiveness of the decontamination measures assumed;

c. the number of persons assumed to be irradiated;

d. the number of persons assumed to be irradiated and contaminated; and

e. the means by which national and regional capabilities to deal with nuclear accidents were calculated.

50. Provide all documents which contain and/or pertain to the responses to Interrogatory Nos. 48 and 49.

51. Specify the radiation levels which render geographic areas "unsuitable for many forms of life" as stated in the basis for UCS/NYPIRG Contention IV(A), and state how long such areas will be unsuitable.

52. Specify the "many forms of life" described in Interrogatory No. 51.

53. State the basis for the allegation that an accident at Indian Point would lead to a reduction in commerce in the New York City port area.

54. State the extent in terms of a percentage of the reduction in commerce described in Interrogatory No. 53, and state the basis for this answer and provide all documents which support that answer.

55. Specify the expected values of the following costs alleged to result from a severe accident at Indian Point, and provide calculations therefor:

a. lost productivity;

b. loss of land;

c. loss of property other than land;

d. health-related costs;

e. contaminated water supplies;

f. contaminated drinking water supplies;

g. lost scenic resources; and

h. lost aesthetic resources.

56. Regarding the costs described in Interrogatory No. 55, state the degree to which the probabilities of their occurrence were considered, and state the basis for this answer.

57. Provide all documents which contain and/or pertain to the calculation of the degree of permeability of limestone and the ability of limestone underlying the Indian Point site to absorb radionuclides.

58. Provide all documents which support the allegation that the Hudson River, Coney Island, and Rockaway Beach could become contaminated as a result of a nuclear accident at Indian Point.

59. State the time in which the contamination described in Interrogatory No. 58 would occur, state the basis for this answer, and provide all documents which contain and/or pertain to the calculation of such time.

60. Specify the activities which would be precluded by the contamination described in Interrogatory No. 58.

61. With regard to the activities described in Interrogatory No. 60:

a. specify the level of radiation which would preclude each activity;

b. state for how long each activity would be precluded; and

c. provide all documents which contain and/or pertain to the responses to Interrogatory Nos. 61a and 61b.

62. Specify any measurements of radioactivity present in Hudson River life forms which have resulted from releases of radiation from Indian Point.

Interrogatory Nos. 63-84 Refer to Board Contention 1.1

63. State what UCS/NYPIRG believes to be the probability of the occurrence of an event at Indian Point similar to that which took place at Three Mile Island Unit 2 in March 1979, and provide all documents which pertain to the calculation of such probability.

64. Listing each plant by name, state what UCS/NYPIRG believes to be the probability of the occurrence, at other nuclear power plants with large surrounding populations, of the event described in Interrogatory No. 63, state how such probability varies at Indian Point, specify the features or conditions at Indian Point which vary the calculations, state the basis for this answer, and provide all documents which contain and/or pertain to the calculation of such probabilities.

65. State what UCS/NYPIRG believes to be the probability of the occurrence of a core melt event at Indian Point, and provide all documents which pertain to the calculation of such probability.

66. Listing each plant by name, state what UCS/NYPIRG believes to be the probability of the occurrence, at other nuclear power plants with large surrounding populations, of the event described in Interrogatory No. 65, and provide all documents which pertain to the calculation of such probability.

67. State what fraction or percentage of core melt events UCS/NYPIRG believes would lead to releases to the atmosphere of harmful doses of radiation, and provide all documents which pertain to the calculation of this amount.

68. State whether UCS/NYPIRG believes that the nuclear industry should not expand if there is a probability greater than zero that a serious accident may occur.

69. If the answer to Interrogatory No. 68 is yes, quantify what UCS/NYPIRG believes to be the probability of the occurrence of a major nuclear accident at:

a. all facilities in the nuclear fuel cycle; and

b. all nuclear power plants.

70. State which factors were included in UCS/NYPIRG's assessment of significant site- and plant-specific features in studies it performed concerning the probability of the accidental release of radiation from a nuclear power plant, and provide all such studies.

71. State whether UCS/NYPIRG believes that the risk to the public health and safety of the occurrence of nuclear power plant accidents is so varied and different from other

risks that comparisons between nuclear and non-nuclear risks are not feasible.

72. If the answer to Interrogatory No. 71 is yes, provide all documents which support that response.

73. State whether UCS/NYPIRG believes that the risk to the public health and safety of the occurrence of nuclear power plant accidents is unacceptable even if such risk is less than the average risk to the public health and safety of competing technologies.

74. If the answer to Interrogatory No. 73 is yes, state with particularity the basis for that answer.

75. State the degree to which UCS/NYPIRG believes that uncertainties in risk assessment render comparisons between nuclear power plants difficult and/or unreliable, state the basis for this answer, and provide all documents which support that response.

76. State whether UCS/NYPIRG believes that the Commission should incorporate the findings of WASH-1400, other probabilistic risk assessment studies, and/or probabilistic risk assessment methodologies into its regulatory program.

77. If the answer to Interrogatory No. 76 is no, state with particularity the basis for that answer.

78. State whether UCS/NYPIRG believes that the Indian Point Probabilistic Safety Study is more exhaustive and/or accurate than WASH-1400 or other risk assessment studies.

79. If the answer to Interrogatory No. 78 is no, state with particularity the basis for that answer and provide all documents which support that response.

80. State what UCS/NYPIRG believes to be the benefit, if any, of using probabilistic methodology as a guide in instituting nuclear power plant design improvements.

81. State whether UCS/NYPIRG believes that a utility should demonstrate that a significant reduction in risk would result from institution of a design and/or operation modification before incorporating such modification into a nuclear power plant, and whether such demonstration should include consideration of uncertainties in risk.

82. State what UCS/NYPIRG believes to be the degree of reduction in risk to the public health and safety, if any, resulting from the increased experience of operators and managers of nuclear power plants which have aged and as a consequence have become less of a risk to the public health and safety than when newer, and provide all documents which contain and/or pertain to the calculation of such reduction in risk.

83. State whether UCS/NYPIRG believes newer reactors constitute more or less of a risk to the public health and safety than older reactors.

84. State what UCS/NYPIRG believes to be the ages of "newer" and "older" reactors.

Interrogatories Addressed to FOE/Audubon

Interrogatory Nos. 85-96 Refer to FOE/Audubon Contention I

85. Specify the type of nuclear accidents or accident scenarios which form the basis of FOE/Audubon Contention I, and quantify the probability of the occurrence of each accident.

86. Provide all documents which contain and/or pertain to reports or calculations performed by Dr. Daniel M. Pissello and/or Dr. Richard G. Piccioni on radiological risks from an accident at Indian Point, or which were referred to or relied upon by Dr. Pissello and/or Dr. Piccioni in performing such calculations.

87. Specify the assumptions of Dr. Daniel M. Pissello and/or Dr. Richard G. Piccioni regarding operator action(s) which form the bases of the calculations described in Interrogatory No. 86.

88. Define contamination as used in FOE/Audubon Contention I.

89. Specify the geographic areas described in the basis for FOE/Audubon Contention I for which contamination is assumed, and provide all documents which contain such information.

90. State how long the areas described in Interrogatory No. 89 are assumed to be contaminated, and provide all documents which contain such information.

91. Specify the type(s) and quantity of radioactive particles which remain in a transportable state for two weeks or more after release, and which pose a threat to the health of wildlife, and specify the distance such particles will travel.

92. State the basis of the belief that 10% of the particles described in Interrogatory No. 91 may spread far beyond the site of contamination, state the dispersion factors used in calculating this percentage, and provide all documents which contain and/or pertain to such calculation.

93. Regarding the particles described in Interrogatory No. 91, specify the probabilities of the occurrence of a radioactive release resulting in the amount and distance traveled which are stated in the response to Interrogatory No. 91.

94. Specify the type(s) of property damage resulting from the transport of the particles described in Interrogatory No. 91.

95. Specify the degree to which the New York City potable water supply will be contaminated by the immediate release of radiation from Indian Point and by the particles described in Interrogatory No. 91.

96. Specify the radioactive isotopes which have long half-lives and are released during serious accidents, and state how long each will remain in the environment and contaminate food and water supplies.

Interrogatory Nos. 97-108 Refer to
FOE/Audubon Contention II

97. Specify the types of nuclear accidents or accident scenarios which form the basis of FOE/Audubon Contention II, and quantify the probability of the occurrence of each accident.

98. Define "substantial and irreparable harm" as used in FOE/Audubon Contention II.

99. Specify the harm which would result from an accident at Indian Point to:

a. wildlife, listing each animal considered;

b. aquatic life in the Hudson River, listing each living creature considered;

c. aquatic life in other waterways, listing each waterway considered;

d. agricultural lands, listing each geographic area considered;

e. private property, listing each geographic area considered; and

f. public recreational lands, listing each area considered.

100. Specify the "many surrounding areas" described in FOE/Audubon Contention II which will be abandoned in the event of a serious accident at Indian Point.

101. State the probability of the occurrence of the event described in Interrogatory No. 100, and provide all documents which contain and/or pertain to the calculation thereof.

102. Define "unusable" as used in the bases for FOE/Audubon Contention II.

103. Specify the recreational and educational purposes for which land near the Indian Point units would be rendered unusable by contamination as a result of an accident at Indian Point.

104. State the probability of the occurrence of the event described in Interrogatory No. 103, and provide all documents which contain and/or pertain to the calculation thereof.

105. State for how long recreational, educational and agricultural lands would be rendered unusable as described in Interrogatory No. 103, and provide all documents which pertain thereto.

106. Specify the isotopes which FOE/Audubon contends will enter the food chain through contaminated soil, and provide all documents which pertain thereto.

107. State for how long the lands and waterways in the Indian Point area, if contaminated, would pose threats to the health of domestic animals and wildlife, and provide all documents which pertain thereto.

108. Provide all documents which support and/or pertain to the allegation that the loss of use of agricultural and recreational lands cannot be mitigated by any feasible means or emergency protection action.

Interrogatories Addressed to Parents

Interrogatory Nos. 109-113 Refer to Parents Contention I

109. Specify the types of nuclear accidents or accident scenarios which form the basis of Parents Contention I, and quantify the probability of the occurrence of each accident.

110. State the radiation dose absorption rate for children and for adults, and specify the protective measures which would accommodate such rate for children.

111. State the differences in risk as applied to children and adults with regard to the following consequences of an accident at Indian Point:

a. prompt fatalities;

b. early fatalities;

c. early illnesses;

d. latent illnesses;

e. fatal cancers;

f. non-fatal cancers;

g. thyroid nodules;

h. genetic effects; and

i. genetic defects.

112. State the probability of the occurrence of an accident at Indian Point having each consequence described in Interrogatory No. 111.

113. Provide all documents which contain and/or pertain to the calculation of the probabilities described in Interrogatory No. 112.

Respectfully submitted,

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Dated: June 16, 1982

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Louis J. Carter, Chairman
Frederick J. Shon
Dr. Oscar H. Paris

In the Matter of:	)	
CONSOLIDATED EDISON COMPANY OF NEW YORK, INC. (Indian Point, Unit No. 2)	)	Docket Nos. 50-247 SP 50-286 SP
POWER AUTHORITY OF THE STATE OF NEW YORK (Indian Point, Unit No. 3)	)	

CERTIFICATE OF SERVICE

I hereby certify that on the 16th day of June, 1982, I caused a copy of the Licensees' First Set of Interrogatories and Document Requests Under Commission Question 1 to Union of Concerned Scientists/New York Public Interest Research Group, Inc., Friends of the Earth, Inc., New York City Audubon Society, and Parents Concerned About Indian Point to be hand delivered to those parties marked with an asterisk, and served by first class mail, postage prepaid on all others.

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