UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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)	)	

TESTIMONY OF JOHN R. SEARS OF THE NRC STAFF ON COMMISSION QUESTIONS 3 AND 4 AND EMERGENCY PLANNNING CONTENTIONS ADMITTED BY BOARD ORDER OF APRIL 23, 1982 FOR INDIAN POINT, UNIT NO. 2 AND UNIT NO. 3

June 7, 1982

TESTIMONY OF JOHN R. SEARS OF THE NRC STAFF ON
COMMISSION QUESTIONS 3 AND 4 AND EMERGENCY
PLANNNING CONTENTIONS ADMITTED BY BOARD ORDER OF
APRIL 23, 1982 FOR INDIAN POINT, UNIT NO. 2 AND UNIT NO. 3

Q.1. State your name and position with the NRC?

A.1. John R. Sears. I am employed by the U.S. Nuclear Regulatory Commission (NRC) as a Senior Reactor Safety Engineer in the Emergency Preparedness Licensing Branch, Division of Emergency Preparedness, Office of Inspection and Enforcement.

Q.2. Have you prepared a statement of professional qualifications?

A.2. Yes. A copy of my statement of professional qualifications is attached to this testimony.

Q.3. State the nature of the responsibilities that you have had with respect to Indian Point, Units 2 and 3.

A.3. I have been responsible for reviewing and evaluating the Emergency Plan for Indian Point Unit No. 2 and Unit No. 3 for conformance with the planning standards and requirements of 10 CFR Part 50, Appendix E to Part 50 and the evaluation criteria of NUREG-0654, FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (NUREG-0654). As part of my responsibilities in reviewing and evaluating the Emergency Plans for Indian Point Unit No. 2 and Unit No. 3, I am also responsible for addressing Commission Questions 3 and 4, and those emergency planning contentions related to Consolidated Edison Company of New York's

(Con Ed) and Power Authority of the State of New York's (PASNY) Emergency Plans for Indian Point, Units 2 and 3 and onsite emergency planning and preparedness.

Q.4. What is the purpose of this testimony?

A.4. The purpose of this testimony is to address Commission Questions 3 and 4, the admitted emergency planning contentions related to licensees' Emergency Plans and the current state of onsite emergency preparedness. My testimony will address the licensees' state of emergency preparedness as described in the Indian Point Units 2 and 3 Emergency Plan and implementing Emergency Procedures.

Contention 3.1
Emergency planning for Indian Point Units 2 and 3 is inadequate in that the present plans do not meet any of the sixteen mandatory standards of 10 CFR 50.47(b), nor do they meet the standards set forth in Appendix E to 10 CFR Part 50.

Q.5. Do the Emergency Plans for Indian Point Unit 2 and Unit 3 describe the organization for coping with radiological emergencies, including definition of authorities, responsibilities, and duties of individuals assigned to the licensees' emergency organization? Explain.

A.5. Yes. Con Ed Emergency Implementation Procedures 1001 and PASNY Emergency Plan Procedures, pages VI through XVI describe the responsibilities and the actions required by plant personnel for establishing the On-Site Emergency Organization and indicate the preferred candidates to fill each position. The transition from a

normal operating organization to an On-Site Emergency Organization involves three basic steps:

(a) Filling appropriate On-Site Emergency Organization positions on an interim basis with personnel who are immediately available on site at the time of the emergency;

(b) Notifying plant personnel off-site and on-site that their assistance is required; and

(c) Filling positions in the long-term emergency organization with appropriate plant personnel as they arrive at their designated emergency response facilities.

Q.6. Do the licensees' Emergency Plans identify the State, local, federal and private sector organizations that are intended to be part of the overall response organization? Explain.

A.6. Yes. Appendices B to the Con Ed Implementation Procedures, and to the PASNY Emergency Plan Procedures contains a roster of off-site agencies, local, federal and private sector, that will be part of the overall response organization.

Q.7. Do the licensees' Emergency Plans specifically establish the emergency responsibilities of the various onsite support organization? Explain.

A.7. Yes. Section 5.2 of the Emergency Plans for both Con Ed and PASNY describe the responsibilities of both individuals and groups in the On-Site Organization. In both plans, the Shift Supervisor initially is the Emergency Director. This title corresponds to the Emergency

Coordinator of NUREG-0654, E.2. The description of responsibilities includes a description of those responsibilities that may not be delegated.

Q.8. Do the licensees' Emergency Plans delineate the relationship among the principal emergency response organizations? Explain.

A.8. Yes. Both Con Ed in Figure 5.22, and PASNY, in Figure 5-3, of the Emergency Plans include descriptions which delineate the relationship of the principal response organizations, both on and offsite.

Q.9. Do the licensees' Emergency Plans and implementing procedures contain organization assignments that are well-defined? Explain.

A.9. Yes, as stated in response to Question 5, Con Ed Emergency Implementation Procedures 1001 and PASNY Emergency Plan Procedures 1030 and 1032 describe the responsibilities and the actions required by plant personnel for establishing the On-Site Emergency Organization and include the preferred candidates to fill each position.

Q.10. Do the licensees' Emergency Plans identify an individual by title who shall be in charge in the event of a radiological emergency at Indian Point Unit 2 or Unit 3? Explain.

A.10. Yes, both Con Ed and PASNY plans state that initially the Shift Supervisor is the Emergency Director and both plans include a line of succession for the position of Emergency Director.

Q.11 Have you examined the licensees' means for providing 24-hour per day emergency response, including 24-hour per day manning of communications links? Explain.

A.11 Yes, each plant is staffed 24-hours per day, 7 days a week by a minimum staff operating crew of 11 individuals. The operating crew for each reactor will comprise the initial On-Site Emergency Organization. The Emergency Director (initially the Shift Supervisor) will assign a Communicator to notify offsite plant and corporate personnel, and other offsite agencies and organizations.

Q.12 Have you examined the licensees' provisions to respond to an emergency and to augment any initial response on a continuous basis? Explain.

A.12 Yes, the Con Ed plan at Section 9, and the PASNY plan at Section 5.3, describe technical and logistics support assistance available from each organizations' corporate staff for initial and long term response.

Q.13 Do the licensees' Emergency Plans contain adequate written agreements developed between Federal, State, local, and other support organizations concerning concept of operations, information exchange and response functions? Explain.

A.13 Yes, Con Ed and PANSY Emergency Plans contain a Mutual Memorandum of Understanding and copies of agreement letters from the following:

Verplanck Fire Protective Association - Ambulance

Verplanck Fire Protection Association - Fire

Buchanan Engine Co. No. 1, Inc.

New York State Police

Department of Energy, Brookhaven Area Office

State of New York Department of Health

Peekskill Community Hospital

U.S. Coast Guard

Q.14 Do the provisions of the Emergency Plans for Indian Point Emergency Units No. 2 and 3 and the licensees' implementing procedures which you have described in response to Question 5 through 13 above meet the planning standard of 10 CFR Part 50?

A.14 Yes, the licensees' Plan and procedures meet the planning standard of 10 CFR 50.47(b)(1) and the requirements of 10 CFR 50, Appendix E. IV.A.

Q.15 Do the licensee's Emergency Plans describe plant staff emergency assignments for all shifts? Explain.

A.15 Yes, each plant is staffed 24-hours per day, 7 days per week by a shift operating crew who will comprise the initial On-Site Emergency Organization. Con Ed Implementation Procedure 1001 and PASNY Emergency Procedures, pages vi through xvi, describe responsibilities and actions required by plant personnel for the on-site emergency organization.

Q.16 Describe the licensees' Emergency Plan provisions for an emergency coordinator?

A.16 In both Con Ed and PASNY Emergency Plans, the Shift Supervisor initially is the Emergency Director. This position corresponds to the Emergency Coordinator of NUREG-0654, E.2.

Q.17 Are the persons in the line of succession for the emergency coordinator position qualified to assume that role in the event of a radiological emergency at Indian Point Unit 2 or Unit 3?

A.17 Yes, the PASNY Emergncy Plan at Section 5.2 and the Con Ed plan at Sections 5.2.1 and 5.2.1.2, state the line of succession of trained and qualified persons to assume the role of Emergency Director.

Q.18 Do the licensees'Emergency Plans have clear definitions of on-shift personnel responsibilities for emergency response? Explain.

A.18 Yes, Table 5-1 of the PASNY Emergency Plan and Figure 5.2-1 of the Con Ed Emergency Plan list the position of the individuals on-shift and the major functional areas in which each is to operate in an emergency.

Q.19 What provisions have the licensees' made for maintaining a sufficient staff to provide an initial response in key areas to an accident at either Indian Point Unit No. 2 or Unit No. 3?

A.19 As stated in response to Question 11, each plant is staffed 24-hours per day, 7 days per week by a minimum shift operating crew who have

been trained to function in key areas in the initial response to an accident.

Q.20 Describe the provisions of the licensees' Emergency Plans for staffing the onsite emergency organization and for augmenting that staff?

A.20 PASNY Emergency Plan Table 5-1 and Con Ed Emergency Plan Figure 5.2-1 give the minimum staffing for required on-shift personnel and additional staffing within 60 minutes. Controlled copies of Appendix A to both PASNY and Con Ed Procedures contain rosters of response personnel with names and phone numbers.

Q.21 Do the licensees' provisions for staffing described in response to Question 19 and 20 satisfy the staffing requirements of Table B-1 of NUREG-0654? Explain.

A.21 Yes, PASNY Emergency Plan Table 5-1 and Con Ed Emergency Plan Figure 5.2.-1 include all the job functions in Table B-1 of NUREG-0654. The licensees have conducted surveys of all plant personnel on their travel time from home to work. The NRC staff judges that the licensees satisfy the goal of the time response called for by Table B-1, NUREG-0654.

Q.22 Do the licensee's Emergency Plans describe the interfaces among various onsite response activities and offsite support and response activities? Explain.

A.22 Yes, PASNY Figure 5-3 and Con Ed Figure 5.2-2 delineates facility designation and lines of responsibility and lines of communication for the onsite emergency organization to interface with offsite response organizations and for an integrated response by all organizations.

Q.23 Do the licensees' Emergency Plans identify the contractor and private organizations who may be called upon for assistance for emergencies? Explain.

A.23 Yes, both PASNY and Con Ed emergency plans specify that the Nuclear Steam System Supplier, Westinghouse, has an Emergency Response Plan and is available for technical assistance. In addition, Con Ed, PASNY, Niagara Mohawk and Rochester Gas & Electric anticipate entering into a mutual agreement for personnel services and technical assistance in the event of a radiological emergency.

Q.24 Do the licensees' Emergency Plan identify the services to be provided by local offsite agencies for handling emergencies? Explain.

A.24 Yes, both PASNY Emergency Plan at Section 5.23 and Con Ed Emergency Plan at Section 5.32 identify ambulance service by Verplanck and Peekskill Ambulance Corps, hospital service by the Peekskill Community Hospital, firefighting by the Verplanck Fire Department, and police assistance by the Buchanan Police Department.

Q.25 Do the provisions of the Emergency Plans for Indian Point Unit No. 2 and Unit No. 3 which you have described and identified in response to Questions 15 through 24 above meet the planning standard of 10 CFR Section 50.47(b)(2) and the requirements of Appendix E.IV.A. of 10 CFR Part 50?

A.25 Yes. the licensees' Plans and procedures meet the planning standard of 10 CFR 50.47(b)(2) and the requirements of 10 CFR 50, Appendix E.IV.A.

Q.26 Have the licensees made arrangements for requesting and using assistance resources? Explain.

A.26 Yes, the response to Questions 13 and 23 lists letters of agreement with offsite organizations for assistance resources.

Q.27 Have the licensees made arrangements to participate in the Federal Radiological Monitoring and Assessment Program? If yes, explain.

A.27 Yes, each licensee has available to it, upon request, the resources of the IRAP program through the Department of Energy. Both PASNY and Con Ed Emergency Plans include letters of agreement with the Department of Energy. FEMA will coordinate the efforts of Federal organizations through the Federal Radiological Monitoring and Assessment Program.

Q.28 Have the licensees made preparations for the dispatch of a representative to the offsite EOC? Explain.

A.28 Yes, PASNY Emergency Plan at Section 7.1.1 and Con Ed Emergency Plan at Section 6.2 specify that the Emergency Director would send one of his staff to perform liasion duties at the offsite EOC.

Q.29 Do the licensees' Emergency Plans identify radiological laboratories that can be used to provide radiological monitoring and analyses services in the event of an emergency? Explain.

A.29 Yes, both licensees have available the radiological laboratories of Teledyne Isotopes and the Radiological Science Laboratory of the New York State Department of Health.

Q.30 What arrangements have licensees made to accomodate State and local staff at the near-site EOF for Indian Point Unit No. 2 and Unit No. 3?

A.30 Both licensees are working to provide additional space to accomodate State and local staff at the EOF located in the Buchanan Service Center building of Consolidated Edison. The present NRC staff judgment is that the available space is sufficient to accommodate a minimum expected number of response personnel.

Q.31 Do the licensees' Emergency Plans identify organizations (other than Federal, State and local) which can be relied upon to assist in an emergency? Explain.

A.31 Yes, both licensees' plans at Section 5.3.4 specify that the Nuclear Steam Supply System Supplier, Westinghouse, is available for assistance.

Q.32 Have the licensees identified the expected times of arrival of Federal resources and the expected availability of radiological laboratories to provide radiological monitoring and analyses services?

A.32 Yes. The Federal Radiological Monitoring and Assessment Program operates the Radiological Assistance Program from the regional office at Brookhaven, Long Island, which is less than an hour by air from Indian Point. The New York State laboratories would be available around the clock.

Q.33 Do the arrangements the licensees have made and the resources they have identified which you have described in response to Questions 26 through 32 above meet the planning standard of 10 CFR Section 50.47(b)(3) and Appendix E.IV.A of 10 CFR Part 50?

A.33 The arrangements the licensees have made and the resources they have identified meet the planning standard of 10 CFR 50.47(b)(3) and Appendix E.IV.A. of 10 CFR Part 50. As stated in response to Question 30, the licensees are working to provide additional space to accomodate State and local staff in the EOF, since it is located in a warehouse building with considerable space available.

Q.34 Have the licensees established an emergency classification and emergency action level scheme? Explain.

A.34 Yes, Section 4 of both licensees' Emergency Plans and provisions of their Implementing Procedures describe the methods and techniques for assessment of each of the four classes of emergency,

Notification of Unusual Event, Alert, Site Emergency and General Emergency. The tables of initiating conditions in the procedures specify measureable and observable conditions in the plant instrumentation readings which are the initiating conditions for declaring an emergency.

Q.35 What are the criteria for the licensees' emergency action level schemes?

A.35 The criteria for the licensees' emergency action level schemes conform to the criteria of NUREG-0654, II.D and Appendix 1.

Q.36 Do the licensees' emergency action level schemes account for lead times necessary to implement protective action decisions? Explain.

A.36 Yes, the licensees' emergency action level schemes described in the answer to Question 3 account for lead time necessary to implement protective action decisions in that emergencies are declared on the basis of control room instrumentation readings rather than on the results of down wind surveys and consequently the emergency would be declared before there would be a release of radioactivity from the plant.

Q.37 Are the licensees' schemes that you describe in response to Question 34 consistent with Appendix 1 of NUREG-0654? If yes, explain.

A.37 Yes, the emergency plan implementing procedures for both licensees list each of the conditions in NUREG-0654, Appendix 1 with the

corresponding Indian Point 2 and 3 conditions. I have compared the lists and they are consistent.

Q.38 Have you examined the licensees' procedures for establishing each emergency class? Explain.

A.38 Yes, as stated in response to Question 37, the procedures for classifying an event are consistent with NUREG-0654, Appendix 1. For each plant the postulated accidents analyzed in the Final Safety Analysis Report are encompassed within the emergency classification scheme.

Q.39 Does the licensees' scheme and procedures you have described in response to Question 34 through 38 above meet the planning standard of 10 CFR Section 50.47(b)(4) and the requirements of Appendix E.IV.B and C of 10 CFR Part 50?

A.39 Yes, the licensees' emergency action level classification system and procedures meet the planning standard of 10 CFR Section 50.47(b)(4) and the requirements of Appendix E.IV.B and C of the 10 CFR Part 50.

Q.40 Have you examined the licensees' procedures for notification of State and local response organizations? Explain.

A.40 Yes, Con Ed Proceduree IP-1002 and PASNY Procedure IP-1030 describe the steps to be taken to provide initial and follow-up notifications to Federal, State, local and company offsite emergency organizations when any of the four emergency classes is declared.

Q.41 Do the procedures described in response to Q.40 provide a basis for prompt and accurate notification of State and local response organizations by the licensees of information about the radiological hazards during an emergency? Explain.

A.41 Yes, the initial notification message form of both organizations contain a statement on whether or not there has been a release of radioactivity, recommended protective actions and meteorological information. The follow-up messages contain detailed information about the type of release.

Q.42 Have you examined the licensees' procedures for notifying and mobilizing its emergency response personnel? Explain.

A.42 Yes, as stated in response to Questions 11 and 15, both licensees' procedures direct the Shift Supervisor to appoint a communicator to notify emergency response personnel. The procedures also specify the key persons to be notified.

Q.43 Do the licensees' procedures described in response to questions 40 through 42 meet the planning standard 10 CFR Section 50.47(b)(5) and the requirements of Appendix E.IV.C and D of 10 CFR Part 50?

A.43 Yes, the licensees' procedures meet the planning standard of 10 CFR 50.47(b) (5) and the requirements of Appendix E.IV.C and D of 10 CFR Part 50.

Q.44 Have the licensees' made provisions to work with the State and local offsite organizations in establishing the contents of initial

messages from the plant in the event of a radiological emergency at Indian Point Unit 2 or 3? Explain.

A.44 Yes, both licensees' use nearly identical notification fact sheets as message forms. The licensee's message form is nearly identical with the "New York State Radiological Emergency Preparedness Plan," message form.

Q.45 Describe the licensees' provisions for followup messages from the facility to offsite authorities?

A.45 The licensee's provisions for followup messages are described in PASNY emergency plan implementing procedure IP-1030 and Con Ed's emergency plan implementing procedure IP-1002. The followup messages includes estimates of the quantity, time and duration of release; the chemical and physical form; the iodine, particulate and noble gas quantity; meteorological data; and prognosis for escalation or termination.

Q.46 Have you examined licensees' means for providing supporting information to offsite authorities for messages intended for the public? Explain.

A.46 Yes, the supporting information in the messages discussed in previous questions includes recommendations for protective actions for the general public. The licensees have arranged with the Verplanck Fire Protection Association to use the organization headquarters building as the Special News Center from which

licensee, State and local media can exchange information to insure that accurate information is presented to the public.

Q.47 Do the licensees' provisions for initial messages, followup messages and messages intended for the public which you have described in response to Questions 44 through 46 meet the planning standard of 10 CFR Section 50.47 (b)(5) and Appendix E.IV.C of 10 CFR Part 50?

A.47 Yes, the licensees' provisions for notification and instruction meet the planning standard of 10 CFR 50.47(b)(5) and Appendix E.IV.C and 10 CFR Part 50.

Q.48 Have you examined the licensees' means for notification and instruction to the populace within the plume exposure pathway EPZ? Explain.

A.48 Yes, the licensees' have installed an Early Warning System consisting of sirens throughout the 10 mile EPZ to provide prompt alerting of the public. Educational material has been distributed that instructs people upon hearing the sirens to turn on radios and television receivers for further information. Local radio and televison stations are notified by county personnel to activiate the Emergency Broadcast System with instructions for the public.

Q.49 Do the licensees' means for notification and instruction to the populace within the plume exposure pathway EPZ which you have described in response to Question 48 above meet the planning

standard of 10 CFR Section 50.47(b) (5) and the requirements of Appendix E.IV.D of 10 CFR Part 50?

A.49 No. I conclude from my review of the siren system for alerting and of the radio-television system for instruction that these systems, when the present deficiencies in the siren system are resolved, will meet the planning standard of 10 CFR 50.47(b)(5) and the requirements of 10 CFR 50 Appendix E.IV.D. However, 10 CFR 50, Appendix E.IV.D.3 includes the following requirements:

> "The licensee shall demonstrate that the State/local officials have the capability to make a public notification decision promptly on being informed by the licensee of an emergency condition."

It is not clear to me from my review of the Westchester Radiological Emergency Response Plan, that the requirement for prompt decision-making will be met. I have discussed this problem with FEMA, County and licensee representatives and I understand that the problem is being resolved.

Q.50 What provisions have licensees made for prompt communications with offsite response organizations?

A.50 PASNY, in Section 7.3 of its emergency plan and Con Ed in Section 7.2 of its emergency plan, have described the means of prompt communication with offsite response organizations.

Q.51 Have licensees established primary and backup means of communication for its emergency response organization? Explain.

A.51 Yes. The communications system for both licensees include a public address paging system onsite, dial phones, direct line phones, inplant audible alarms, radio system, a radio paging (beeper) system, a NAWAS (National Warning System Line) to the County and State Warning Points and the City of Peekskill, and an NRC Emergency Notification System and an NRC Health Physics Network. Figure 7.2-5 of Con Ed's Emergency Plan and Figure 7-2 of PASNY's Emergency Plan diagram the Radiological Emergency Communications System (RECS) which is the primary means of notification between the two reactor control rooms, emergency response facilities and State and County Warning Points.

Q.52 Have licensees made provisions for manning communication links on a 24-hour per day basis to initiate emergency response by the principal offsite response organizations? Explain.

A.52 Yes, the Control Room, and the Emergency Operations Facility, when activated, will be manned 24 hours per day with personnel to man communication links.

Q.53 Have licensees made provisions for communicating between Indian Point, Units 2 and 3 and the licensees' near-site EOF, governmental EOCs, and radiological monitoring teams? Explain.

A.53 Yes, the systems listed in response to Question 51 and illustrated in Con Ed's Emergency Plan Figures 7.1-2 through 7.1-7 and Figures

7.2-1 through 7.2.9 will be used for communicating between Units 2 and 3 and between emergency response centers. Section 7.3.2.1 of Con Ed's Plan describes mobile survey vehicles, for offsite monitoring, that are equipped with two-way radios.

Q.54 What provisions have the licensees made to ensure that a coordinated communication link exists for fixed and mobile medical support facilities?

A.54 Con Ed's Emergency Plan at Section 5.3.2.1 and PASNY's Emergency Plan at Section 5.3.3 state that communications to fixed medical support facilities from the Indian Point site is via telephone, and to mobile medical support facilities from the local hospitals via radio systems.

Q.55 Have you examined the licensees means for activating its emergency response personnel? Explain.

A.55 Yes, as stated in response to Question 11, both licensees emergency plans state that the Shift Supervisor will appoint a Communicator whose responsibility includes notifying plant staff personnel to augment the onshift crew. PASNY's Emergency Plan at Section 7.3 and Con Ed's Emergency Plan at Section 7.2.1 state that operator alert to assemble the on-site organization is initiated from the Control Room consoles by the Public Address Systems.

Q.56 Have licensees made provisions for conducting periodic tests of its entire emergency communications system? Explain.

A.56 Yes, PASNY's Emergency Plan Table 8-1 and Con Ed's Emergency Plan at Section 8.1.2 specify monthly communication checks between the two licensees, State and local governments; quarterly communications checks with Federal agencies, and annual comprehensive drills.

Q.57 Do the licensees' provisions for communicating with principal response organizations and emergency response personnel which you have described in response to Questions 50 through 56 meet the planning standard of 10 CFR Section 50.47(b)(6) and the requirements of Appendix E.IV.C and E of 10 CFR Part 50?

A.57 Yes, the licensees provisions for communications meet the planning standard of 10 CFR Section 50.47(b)(6) and the requirements of Appendix E.IV.C and E of 10 CFR Part 50.

Q.58 Have you examined licensees' provisions for the periodic dissemination of information to the public including the transient population within the plume exposure pathway EPZ as to how the public will be notified and what its initial actions should be in the event of a radiological emergency at Indian Point, Unit No. 2 or Unit No. 3?

A.58 Yes, the licensees have mailed to all residents in the plume exposure pathway EPZ a brochure which I have reviewed and which contains the following information: protective measures; a description of how people will be alerted and notified; and information on radiation. In addition an insertion for telephone books and posters for transient areas have been prepared.

Q.59 Have the licensees distributed information to the public within the plume exposure pathway EPZ concerning how the public will be notified and what its initial actions should be in the event of a radiological emergency at Indian Point, Unit 2 or Unit 3? Explain.

A.59 Yes, the brochure mentioned in answer to Question 58 has been distributed throughout the plume exposure pathway EPZ and it contains information on how the public will be notified and what the initial response should be.

Q.60 Have licensees designated points of contact and physical locations for use by news media during an emergency? Explain.

A.60 Yes, PASNY's Emergency Plan at Section 7.1.6 and Con Ed's Emergency Plan at Section 7.1.5 state that the licensees have arranged with the Verplanck Fire Protection Association to use the organization facilities at the Special News Center for use by the news media during an emergency.

Q.61 Have you examined the licensees' procedures for coordinated dissemination of information to the public, including news media? Explain.

A.61 Yes, as stated in the emergency plan sections referenced in the previous response one of the purposes of the Special News Center is to facilitate coordinated news releases from government officials and licensee representatives so as to insure that accurate information is presented to the public.

Q.62 Have licensees made arrangements for dealing with rumors? Explain.

A.62 Yes, the Special News Center will permit exchanges and updates of information so that jointly agreed upon statements can be made. The availability of centralized and authentic information will provide the antidote to rumors. PASNY's Emergency Plan at Section 7.1.6 states that the Special News Center has twelve dedicated phone lines, whose numbers would be announced over the Emergency Broadcast System in an emergency, reserved for responses to inquiries from the public.

Q.63 Do the licensees' procedures and arrangements for providing information to the public, and the provisions for accomodating news media which you have described in response to Questions 58 through 62 meet the planning standard of 10 CFR Section 50.47(b)(7) and the requirements of Appendix E.IV.D of 10 CFR Part 50?

A.63 Yes, the licensees' plans for providing information to the public and for accomodating the news media meet the planning standard of 10 CFR Section 50.47(b)(7) and the requirements of Appendix E.IV.D of 10 CFR Part 50.

Q.64 Have you examined the licensees' provisions for establishing and activating a Technical Support Center (TSC), Onsite Operation Support (OOSC) and a Emergency Operations Facility (EOF) to support the emergency response? Explain.

A.64 Yes, PASNY Procedures 1045 and 1047 and Con Ed's Procedures 1035 and 1023 describe the activation and operation of each licensees'

Technical Support Center and Operational Support Center. The Emergency Operation Facility is a single facility located at the Indian Point Service Center Complex to be used by either licensee as the focal point for direction of the overall strategy and for response to offsite radiological problems. The activation and operation of the EOF is described in the PASNY's emergency plan at Section 7.1.1 and Con Ed's emergency plan at Section 7.1. Activation of the Alternate Emergency Operations Facility at the East View Service Center is described in Con Ed's Emergency Plan Implementation Procedure IP-1045.

Q.65 Have the licensees established their TSCs and EOFs in accordance with NUREG-0696, Revision 1? Explain.

A.65 The licensees have established and have in operation interim emergency response facilities in response to post TMI upgrading of emergency preparedness as reflected in NUREG-0737. They have described their conceptual plans for permanent emergency response facilities in responses to the NRC request of February 18, 1981 and these responses are under review.

Q.66 Have you examined the licensees' provisions for equipment and staff at their TSCs and EOFs? Explain.

A.66 Yes, the licensee's procedures for activating and operation of these facilities include operation of equipment for monitoring and analysis of plant parameters and offsite conditions. The licensees

notification procedures include rosters of staff and designation of where each person is to report.

Q.67 Have the licensees made provisions for onsite monitoring systems for use in initiating emergency measures? Explain.

A.67 Yes, the licensees procedures for recognizing emergency action levels are based on plant parameters which are monitored by radiological monitoring systems and by process monitoring systems of temperature, pressure, level and flow.

Q.68 Have you examined the licensees' provisions for acquiring data from offsite monitoring and analysis equipment? Explain.

A.68 Yes, PASNY Emergency Plan at Section 7.4.2 and Con Ed's Emergency Plan at Section 7.3.2 describes facilities and equipment for offsite monitoring. PASNY's Emergency Plan Implementation procedure IP-1011, and Con Ed's Emergency Plan Implementation Procedure IP-1015, Offsite Monitoring describes operation of survey teams at fixed sample locations, and the operation of the Reuter-Stokes System of offsite ion chambers which monitor dose rate and telemeter to the MIDAS dose assessment system.

Q.69 Have licensees made provisions for offsite radiological monitoring equipment in the vicinity of Indian Point, Units 2 and 3?

A.69 Yes, in addition to the Reuter-Stokes monitors mentioned in response to Question 68, Table 1 of PANSY's Emergency Plan Implementation Procedure IP-1011, lists locations of continuous air sampling sites,

emergency air sampling sites, TLD stations and location of Ludlum dose rate meters. Con Ed's Emergency Plan Implementation Procedures 1007 and 1015 also have this information.

Q.70 What provisions have the licensees made for obtaining meteorological information?

A.70 PASNY Procedure IP-1003 and Con Ed Procedure IP-1016 describe the acquisiton of meteorological data from the primary 122 meter tower. Wind speed and direction are measured at three levels and stability class is determined by temperature differences from the ground to the 60 meter level, and to the 122 meter level. A 10 meter backup tower is located on the Con Ed Service Center Building (EOF).

Q.71 Have licensees established a central point for receiving and Anlyzing field monitoring data? Explain.

A.71 Yes, the Con Ed Emergency Plan at Section 7.11 specify that the Emergency Operations Facility serves as the focal point for collection, analysis and evaluation of radiological and meteorological information, including field monitoring data.

Q.72 Have you examined the licensees' provisions for protective equipment, communications equipment, radiological monitoring equipment and emergency supplies? Explain.

A.72 Yes, PASNY Procedure IP-1070 and Con Ed Procedure IP-1018 are entitled Periodic Checks of Emergency Preparedness Equipment. These procedures include the location of the equipment, specification of

the equipment, and the frequency of inventory, operational and calibration checks. The equipment includes air sampling and counting equipment, portable survey instruments, dosimetry and respiratory equipment, anticontamination clothing, procedures and maps.

Q.73 Have you examined the licensees' means for maintaining those supplies and equipment? Explain.

A.73 Yes, the procedures for periodic inspection checks mentioned in response to Question 72 provides the means for monitoring those supplies and equipment.

Q.74 Do the licensees' provisions to provide and maintain facilities and equipment which you have described in response to Questions 64 through 73 meet the planning standard of 10 CFR Section 50.47(b)(8) and the requirements of Appendix E.IV.E and G of 10 CFR Part 50?

A.74 Yes, the licensees' provisions to provide facilities and equipment meet the planning standard of 10 CFR Section 50.47(b)(8) and the requirements of Appendix E.IV.E and G of 10 CFR Part 50.

Q.75 Have you examined the licensees' plant systems equipment and methods for assessing and monitoring actual or potential offsite consequences of a radilogical emergency condition? Explain.

A.75 Yes, the licensees' methods for assessing and monitoring actual or potential offsite consequences of a radiological release are described in PASNY Procedure 1002 and Con Ed Procedure DMR-1 through 9, Determination of Magnitude of Release. The method of calculation

uses dispersion factor overlap and a desk top computer for dose calculations. All shift supervisors have been trained in the use of this manual system.

On a site visit, I have observed that the EOF is equipped with a MIDAS computerized system of dose calculations which has a graphical display of dispersion of an effluent. The system accepts input data from radiological monitors and from meteorological instrumentation and calculates live-time dose rates downwind from the source. Terminals of this system are in the Control Room of Indian Point Units 2 and 3.

Q.76 Do the licensees' Atmospheric Release Advisory Capability (ARAC) Systems and the Meteorological Information and Dose Assessment System (MIDAS) provide for a range of accident conditions? If yes, explain.

A.76 Yes, both of these computerized systems of calculation of dose from dispersion of an effluent cover the full range of potential releases for all possible accidents.

Q.77 Do the licensees' accident assessment capabilities provide for rapid assessments of the magnitude and location of radiological releases? Explain.

A.77 Yes, I have observed the computerized system display its results on a cathode ray tube within a minute. It was also demonstrated to me

on a site visit that the manual dose calculation can be performed within a few minutes by trained personnel.

Q.78 Do the methods, systems and equipment available to the licensees for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition described in your response to Question 75 through 79 meet the planning standard of 10 CFR Section 50.47(b)(9) and the requirements of Appendix E.IV.B and E of 10 CFR Part 50?

A.78 Yes, the methods, systems and equipment available to the licensees for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition meet the planning standard of 10 CFR 50.47(b)(9) and the requirements of Appendix E.IV.B and E of 10 CFR Part 50.

Q.79 Why are time estimates for evacuation and for taking other protective action required to be submitted by the licensees pursuant to 10 CFR Part 50, Appendix E.IV?

A.79 Time estimates for evacuation and for taking other protective actions are used for two principal purposes:

(1) to identify those transportation routes, areas or facilities in the vicinity of a site for which special traffic controls during an emergency or other special plans would be desirable;

(2) to provide decisionmakers during an emergency knowledge of the length of time required to effect evacuation under various conditions. This knowledge allows an informed choice of protective actions (e.g., between in-place sheltering and evacuation) during any actual accident situation.

Q.80 For the time estimates which are required to be submitted by the licensees pursuant to Appendix E.IV of 10 CFR Part 50, what criteria must those time estimates meet?

A.80 The time estimates for evacuation are considered acceptable if the criteria of NUREG-0654, II.J and Appendix 4 are met.

Q.81 Have the licensees submitted time estimates for Indian Point Units 2 and 3? If yes, describe the documents.

A.81 Yes, PASNY submitted an analysis of time estimates for evacuation of the plume exposure pathway zone in Evacuation Time Estimates for Areas Near the Site of Indian Point Power Plants, prepared by Parsons, Brinckerhoff Quade and Douglas, Inc., January 31, 1980 and a document, dated November 1981, entitled "Methodology to Calculate Evacuation Travel Time Estimates for the Indian Point Emergency Planning Zone," by the same authors.

Q.82 Describe the extent to which the evacuation time estimate submitted by the licensees is reflected in the licensees emergency plans.

A.82 PASNY Procedure IP-1017 Recommendation of Protective Actions for the Offsite Population states: "When deciding to evacuate consider and weigh the following: (a) duration of release, (b) time it would take to evacuate, (c) exposure people would receive during the evacuation. If it would not offer a substantial benefit to evacuate, sheltering should be continued."

Con Ed Procedure IP-1013 also entitled Recommendation of Protective Actions for Offsite Population instructs the Shift Supervisor/ Emergency Director to estimate the potential duration of the release, determine the affected area, and determine if evacuation can be completed before cloud arrival. The procedure also states a value for sheltering effectiveness to be taken into account in making the recommendation.

Q.83 Have these time estimates been examined for conformance with the criteria you have identified in your response to Question 82 above?

A.83 Yes.

Q.84 Who performed that examination and how was it conducted?

A.84 The examination was performed by a contractor. The evaluation techinque is described in NUREG/CR-1856, an Analysis of Evacuation Time Estimates Around 52 Nuclear Power Plants, and NUREG/CR-1745, Analysis of Techniques for Estimating Evacuation Times for Emergency Planning Zones. The evaluation used a subjective scale requiring professional engineering judgment in determining ratings. The

process then indicates areas where the reviewer considers the analysis to be strong or weak.

Q.85 Describe the results of that evaluation

A.85 The contractors evaluation stated that the licensees report was excellent in all review areas.

Q.86 Have you reviewed the licensees' time estimates which you identified in response to Question 84?

A.86 Yes.

Q.87 In your opinion, do the licensees' time estimates meet the criteria you identified in your response to Question 87? Explain.

A.87 Yes, Appendix 4 of NUREG-0654 includes a description of the material to be covered in an evacuation time assessment study. The NRC contractors evaluation described in answer to Question 85 and 86 covers all of the elements in Appendix 4. I have reviewed the licensees study and the NRC contractors evaluation and I have verified that the licensees study covers all the elements in Appendix 4. The validity of the results of the study will be attested to by Thomas Urbanik II, the NRC contractor, who is expert in this area.

Q.88 Have you examined the licensees' means for advising persons onsite or persons in areas controlled by the licensees in the event of an emergency? Explain.

A.88 Yes, PASNY's Emergency Plan at Section 7.3 and Con Ed's Emergency Plan at Section 7.2 describe their evacuation alarm signals and onsite notification by means of the Public Address System.

Q.89 Have the licensees made provisions for evacuating and transportating onsite individuals in the event of a radiological emergency?

A.89 Yes, PASNY Procedure IP-1053 Evacuation of Site and Con Ed Procedure 1027, Site Personnel Accountability and Evacuation, describes the procedure and evacuation routes for evacuation of onsite non-essential personnel. Evacuation would be by persons using their own vehicles or by company vehicles.

Q.90 Have you examined the licensees' provisions for radiological monitoring and contamination surveys of people evacuated from the site?

A.90 Yes, the licensees' Evacuation and Accountability Procedures state that at the Buchanan Service Center Assembly Area, evacuees would be surveyed for contamination before leaving, and decontamination would be done if necessary. PASNY Procedure IP-1013 and Con Ed Procedure IP-1009 describes the methods and the equipment for checking vehicles for contamination and their subsequent decontamination at the Buchanan Service Center.

Q.91 Have you examined the capability of the licensees to account for individuals onsite at the time of an emergency? Explain.

A.91 Yes, the licensees' evacuation and accountability procedures state that each person within the Protected Area is assigned a pre-designated assembly area. The badge out procedure will be used for accountability. A list of missing persons, if any, would be developed and the Emergency Director would authorize a Search Team.

Q.92 Have you examined the licensees' provisions for protective measures for those individuals remaining or arriving onsite during an emergency? Explain.

A.92 Yes, PASNY's Procedure IP-1070 and Con Ed's Procedure IP-1018 state that protective equipment is maintained and available at primary and alternate EOF's, Health Physics Control Point, Control Rooms and Command Guard House. The equipment consists of protective clothing, respiratory protective devices and survey equipment.

Q.93 Have the licensees made provisions for the use of radioprotective drugs for those individuals remaining or arriving onsite during an emergency? Explain.

A.93 Yes, PASNY's Procedure IP-1070 and Con Ed's Procedure IP-1018 showed that potassium iodide is maintained at the Alternate EOF, the Control Room, the TSC's and the Security Building. A large supply of potassium iodide is available at the Buchanan Service Center. The drug would be administered upon the direction of the Emergency Director.

Q.94 Have you examined the capability of licensees to recommend evacuation or other protective actions to the offsite authorities? Explain.

A.94 Yes, PASNY Procedure IP-1017 and Con Ed Procedure 1013, Recommendations of Protective Action for Offsite Population describes the method to be used by the Shift Supervisor/Emergency Director to determine the protective actions to recommend to the offsite authorities, and the bases for the choice of the protective actions.

Q.95 Do the licensees' Emergency Plans include the bases for the choice of

recommended protective actions for the plume exposure pathway EPZ during an emergency? Explain.

A.95 Yes, the procedures mentioned in response to Question 94 are based on Protective Action Guides of the U.S. Environmental Protection Agency, and also on the basis of plant parameters as described in each licensees' Emergency Action Level Procedures.

Q.96 Are the bases for the choice of recommended protective actions discussed in the response to Question 96 sufficient for the licensees' to make decisions on recommended protective actions? Explain.

A.96 Yes, the basis for the initial recommendation of notifying the general public and recommending shelter as the first protective

measure is the actual status of plant conditions before there is a release of radioactivity from the plant.

Q.97 Do the licensees' provisions for protective response of onsite individuals and its capability to recommend protective actions to offsite authorities for persons within the plume exposure pathway EPZ which you described in response to Questions 89 through 97 meet the planning standards of 10 CFR Section 50.47(b)(10) and the requirements of Appendix E.IV.D and E of 10 CFR Part 50?

A.97 Yes, the licensees' provisions for protective response of onsite individuals and their capability to recommend protective actions to offsite authorities for persons within the plume exposure pathway EPZ meet the planning standard of 10 CFR 50.47(b)(10) and the requirements of Appendix E.IV.D and E of 10 CFR Part 50.

Q.98 Have you examined the means established by licensees for controlling radiological exposures to its emergency workers in the event of a radiological emergency at Indian Point, Units 2 and 3? Explain.

A.98 Yes, PASNY Emergency Plan at Section 6.7.1 and Con Ed's Procedures IP-1038 address required authorization by the Emergency Director, guidance and maximum exposure criteria where it may be necessary for established limits to be exceeded.

Q.99 Do the licensees' means for controlling such radiological exposures include exposure guidelines which are consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides? Explain.

A.99 Yes, both licensees' emergency plans have provisions noted in response to Question 98 for controlling exposures that are based on the EPA Emergency Worker and Lifesaving Activity Protective Actions Guides (EPA 520/1-75/001) and the National Committee on Radiation Protection, Report 39, (1971).

Q.100 Have licensees made provisions for an onsite radiation protection program to be implemented during emergencies, which included a 24-hour-per-day capability to determine doses received by emergency personnel? Explain.

A.100 Yes, the licensees' radiation protection program in force during nonemergency conditions will continue in force during emergency conditions. Exceptions to rules will be under the authority of the Emergency Director. Written agreements exist with the dosimetry processor to provide 24 hour telephone emergency dosimetry service. The licensees have onsite a TLD processor and HP technicians on watch have been trained in its use.

Q.101 Do the means provided by licensees for controlling radiological exposures to emergency personnel during an emergency which you described in response to Questions 98 through 100 meet the planning standard of 10 CFR Section 50.47(b)(11) and the requirements of Appendix E.IV.E of 10 CFR Part 50?

A.101 Yes, the means provided by the licensees for controlling exposure to emergency personnel during an emergency meet the planning standard of 10 CFR 50.47(b)(11) and the requirements of Appendix E.IV.E of 10 CFR Part 50.

Q.102 Have you examined licensees' arrangements for medical services for contaminated injured individuals? Explain.

A.102 Yes, PASNY Procedures IP-1021 and Con Ed Procedures IP-1012 describe the procedure to be followed when an individual is injured and contaminated. The immediate action is to render first aid and then notify the Control Room for additional aid.

Q.103 Have the licensees made provisions for an onsite first aid capability? Explain.

A.103 Yes, there is a two-room First Aid and Decontamination Suite located on the 72 foot elevation of the Unit 1 Nuclear Services Building; an alternate area for treatment of possible radiation casualties at the Con Ed Medical Bureau Service Center at the EOF location; a First Aid Room on the 33 foot level of the IP-3 Turbine Building; a first aid room on the 15 foot level of the administration building; and a First Aid and Decontamination Room at the IP-3 Health Physics Control Point.

Q.104 Have you examined licensees' arrangements for transporting contaminated injured individuals to medical support facilities? Explain.

A.104 Yes, both licensees have letters of agreement with the Verplanck Ambulance Association for 24-hour service for transporting contaminated injured persons to medical support facilities. There is also a letter of agreement with Peekskill Community Hospital to accept an injured and contaminated patient.

Q.105 Do licensees arrangements for medical services for comtaminated injured individuals which you have described in response to Questions 103 through 105 meet the planning standard of 10 CFR Section 50.47(b)(12) and the requirements of Appendix E.IV.E of 10 CFR Part 50?

A.105 Yes, the licensees' arrangement for medical services for contaminated injured individuals meet the planning standard of 10 CFR 50.47(b)(12) and the requirements of Appendix E.IV.E of 10 CFR Part 50.

Q.106 Have you examined the general plans developed by licensees for recovery and reentry? Explain.

A.106 Yes, Section 9 of each licensees' Emergency Plan described general recovery plans. Recovery operations are the responsibility of the individual licensees' Recovery Manager and include re-entry and assessment and repair and return to operations. 10 CFR Part 20 radiation exposure limits will be observed.

Q.107 Do the licensee's plans for recovery and reentry describe the means by which decisions are reached to relax protective measures? Explain.

A.107 Yes, Section 9 of both licensees' Emergency Plan state that it is the responsibility of the individual licensees' Recovery Manager to determine that the facility and the surroundings are safe, and after consultation with his staff and other agencies available to him, to determine that the radioactive release is terminated and that protective measures may be relaxed.

Q.108 Do the licensee's emergency plans establish a method for periodically estimating total population exposure? Explain.

A.108 Yes, Con Ed Procedure IP-1036 describe the method of determining the total integrated whole body and thyroid dose to the population at large within the 10 mile EPZ by multiplying the exposure in each of 160 sector zones by the population therein, and then summing the total. PANSY would use the same procedure.

Q.109 Do the licensee's plans for recovery and reentry which you have described in response to Questions 107 through 109 meet the planning standard of 10 CFR Section 50.47(b)(13) and the requirements of Appendix E.IV.H of 10 CFR Part 50?

A.109 Yes, the licensee's plan for recovery and reentry meet the planning standard of 10 CFR Section 50.47(b)(13) and the requirements of Appendix E.IV.H of 10 CFR Part 50.

Q.110 Are you familiar with the emergency planning exercise conducted on March 3, 1982, for Indian Point, Unit 3? Explain.

A.110 Yes, I have reviewed the report and the individual evaluations made by NRC observers, and the individual evaluation by the licensee's observers.

Q.111 Briefly summarize the onsite scenario for the exercise conducted on March 3, 1982.

A.111 The scenario provided for a sequence of simulated events which required the mobilization of the licensee's emergency organization beginning with an Unusual Event and progressing through sequentially escalating classes to a General Emergency. The scenario included a loss of coolant, failure of reactor protection systems, failure of a containment purge valve, repair team operation, and a contaminated injured person transported to a hospital.

Q.112 What functional areas of the licensees' emergency response organization were tested by the exercise?

A.112 The exercise tested emergency organization and control, accident classification, dose assessment, notification of offsite authorities, augmentation of onsite organization, first aid, transportation of contaminated injured individual, on and offsite monitoring, public information, accountability of personnel.

Q.113 From the standpoint of onsite emergency preparedness and licensees' response and licensees' emergency preparedness, what were the results of the exercise?

A.113 As noted in the NRC exercise evaluation report, the exercise demonstrated the licensees' overall capability to respond to an emergency, and the NRC observers found that the licensees' actions to be adequate to protect the health and safety of the public. The licensee was informed through the critique of his own observers and through the critique of NRC observers where there are areas for improvement, and the licensee has taken action to implement the recommendations.

Q.114 Explain the process whereby the licensees' deficiencies noted during exercises or drills will be corrected.

A.114 Within the licensee's organization, responsible individuals are identified and assigned responsibility for assuring that deficiencies are corrected.

Q.115 How will the Office of Inspection and Enforcement assure that problem areas identifed during the exercise are corrected by the licensees?

A.115 The Office of Inspection and Enforcement assures that problem areas identified during the exercise are corrected through its onsite inspection process.

Q.116 Have licensees established provisions for implementing the corrective actions? Explain.

A.116 Yes, recommended procedure changes have been made and retraining of personnel is being accomplished. The issue of the size of the EOF has been brought to the attention of Con Ed senior management.

Q.117 Have you examined the licensees' provisions for conducting drills in the functional areas of emergency response identified in NUREG-0654, II.N.2? Explain.

A.117 Yes, Con Ed's emergency plan Section 8.1.2 and PASNY's Plan Table 8-1 summarize exercises and drills, the participants and the frequency of the drills. These include communications, fire, medical emergency, radiological monitoring and health physics drills.

Q.118 Have you examined the licensees' provisions for when exercises and drills are to be conducted? Explain.

A.118 Yes, as stated in response to Question 117, both licensees' plans describe the frequency of drills and exercises.

Q.119 Are exercises or drills useful where the participants have prior knowledge of the date, time and other details of the exercise or drill? Explain.

A.119 All drills or exercises, regardless of prior knowledge, are useful as a training medium. In this exercise, care was taken by the licensee to insure that participants did not have prior knowledge of

the details of the exercise scenario. The reports of the NRC observers state that they did not perceive evidence of prior knowledge of the scenario.

Q.120 Do the licensees' provisions for taking corrective action, their performance during the March 3, 1982 exercise and their provisions for conducting exercises and drills which you have described in response to Questions 110 through 119 meet the planning standard of 10 CFR Section 50.47(b)(14) and the requirements of Appendix E.IV.F of 10 CFR Part 50?

A.120 Yes, the licensees' provisions for conducting drills and exercises and for taking corrective actions meet the planning standard for 10 CFR 50.47(b)(14) and the requirements of 10 CFR Part 50 Appendix E.IV.F.

Q.121 Have you examined the licensees' provisions for radiological emergency response training to those who may be called on to assist in an emergency? Explain.

A.121 Yes, each licensee has developed an Emergency Planning Training program that defines the program and specifies the training requirements and responsibilities. The program contains detailed lesson plans appropriate to each emergency function. Plans, procedures, lecture notes and visual aids are used in the training program.

Q.122 Have you examined those provisions of the licensee's training program for the specialized training and periodic retraining in the categories identified in NUREG-0654, II.0.4, particularly with respect to radiological monitoring and radiological analysis personnel? Explain.

A.122 Yes, Con Ed has developed a table which is a matrix of training courses versus the appropriate persons to take such training. I have reviewed this matrix and it includes the categories identified in NUREG-0654 II.0.4 and radiological monitoring and dose assessment personnel taking courses in these subjects. PASNY has a similar system.

Q.123 Have the licensees established means for assuring that emergency response personnel will receive necessary training? Explain.

A.123 Yes, both licensees' emergency plans in Section 8 of each licensees' emergency plan include tables that summarize the required training and its frequency, and the personnel to take the training. Both licensees' employ a computerized system of record keeping to insure that retraining is accomplished according to schedule.

Q.124 Does the radiological emergency response training provided by licensees which you have described in response to Questions 121 through 123 meet the planning standard of 10 CFR Section 50.47(b)(15) and the requirements of Appendix E.IV.F of 10 CFR Part 50?

A.124 Yes, the licensees program of radiological emergency response training and retraining meet the planning standard of 10 CFR Section 50.47 (b)(15) and the requirements of Appendix E.IV.F of 10 CFR Part 50.

Q.125 Have licensees established responsibilities for emergency plan development? Explain.

A.125 Yes, PASNY's Emergency Plan at Section 8.1 has designated the Assistant to the Radiological and Environmental Services Superintendent to be the Emergency Planning Coordinator. Con Ed's Emergency Plan at Section 8.1.3 has designated as Emergency Planning Director a member of the normal station staff who reports to the General Environmental Health and Safety.

Q.126 Have the licensees made provisions for updating their Emergency Plans? Explain.

A.126 Yes, Section 8 of both licensee's emergency plans state that the PASNY Emergency Planning Coordinator and the Con Ed Director of Emergency Planning are responsible for reviewing all proposed changes to the emergency plan and procedures and for processing them through PASNY's Plant Operations Review Committee and Con Ed's Nuclear Safety Committee.

Q.127 Have the licensees established responsibilities for distribution of emergency plans? Explain.

A.127 Yes, Section 8 of both licensee's emergency plans state that distribution of changes to plans and procedures is the responsibility of PASNY's Emergency Planning Coordinator and Con Ed's Director of Emergency Planning.

Q.128 Describe the licensees' administration and implementation of their Emergency Plans? A.128 In both site visits and in my reviews, I have observed that changes to plans or procedures are issued with the revised pages marked to indicate the changes. The revised pages are distributed to all controlled copy holders. A return receipt routing sheet is issued with all changes.

Q.129 Have you reviewed the licensees' provisions for training the emergency response planners?

A.129 Yes, emergency response planners are included in the training plans mentioned in response to Question 122.

Q.130 Have you reviewed the licensees' arrangements for having independent reviews conducted periodically of their emergency preparedness programs? Explain.

A.130 Yes, Section 8.2. of Con Ed's emergency plan states that an annual audit of Con Ed's emergency preparedness program is performed by Con Ed's Quality Assurance Organization, and a report made to the Nuclear Facilities' Safety Committee. Section 8.4 of PANSY's emergency plan states that PASNY also arranges for an annual independent review of the emergency preparedness program which is

reported to the Safety Review Committee and the Plant Operating Review Committee.

Q.131 Do licensees' Emergency Plans provide for (1) a listing of supporting plans and their sources, (2) an appendix listing procedures required to implement the plan, and (3) a specific table of contents? Explain.

A.131 Yes, both licensees plans include a table of contents and a cross index to NUREG-0654, a listing of implementing procedures, letters of agreement, and, in separate documents, supporting plans of State and local emergency response organizations.

Q.132 Do the licensees' development, periodic review and distribution of emergency plans which you have described in response to Questions 125 through 131 meet the planning standard of 10 CFR Part 50(b)(16) and the requirements of 10 CFR 50 Appendix E.IV.F.?

A.132 Yes, the licensees' development, periodic review and distribution of emergency plans meet the planning standard of 10 CFR Section 50.47(b)(16) and the requirements of Appendix E.IV.F of 10 CFR Part 50.

Q.133 Have the licensees submitted (or provided the appropriate reference to) radiological emergency response plans of the State and local governmental entities that are wholly or partially within the plume exposure pathway EPZ as required by 10 CFR Section 50.54(s)(1)? Explain.

A.133 Yes, the licensees have submitted the radiological emergency response plans of the State of New York and the Counties of Westchester, Orange, Putnam and Rockland as required by 10 CFR Section 50.54(s)(1).

Q.134 Have the licensees submitted (or provided the appropriate reference to) radiological emergency response plans of State governments wholly or partly within the ingestion pathway EPZ as required by 10 CFR Section 50.54(s)(1)? If yes, explain.

A.134 Yes, in addition to the plans mentioned in response to Question 134, the licensees have submitted the Radiological Emergency Response Plans of the States of Pennsylvania, New Jersey and Connecticut.

Contention 3.4 The licensees cannot be depended upon to notify the proper authorities of an emergency promptly and accurately enough to assure effective response.

Q.135 For Contention 3.4, describe the Commission'srequirements and guidance concerning the provisions for notifying appropriate offsite authorities in the event of a radiological emergency, and compare the provisions made by licensees with those required by regulation and/or recommended in NUREG-0654.

A.135 10 CFR 50 Appendix E.IV.D3 states, "A licensee shall have the capability to notify responsible State and local governmental agencies within 15 minutes after declaring an emergency". For each class of emergency the guidance in NUREG-0654, Appendix 1 states, under licensee actions "1. Promptly informs State and/or local

offsite authorities...". PASNY's procedure IP-1030 states specifically, "Offsite agencies should be notified within 15 minutes of the declaration of an emergency classification". Con Ed procedure IP-1002 lists the procedural steps to be followed by Control Room personnel. The first step for the communicator, after he has received the Notification Form from the Shift Supervisor is to notify New York State and the four counties via the party hot line, the Radiological Emergency Communications System (RECS).

Q.136 Have you examined the licensees' bases for notification of offsite authorities for the four classes of Emergency Action Levels? Explain.

A.136 Yes, as noted in response to Questions 34 and 35, the bases for notification of offsite authorities is that events have occured that are measureable or observable to plant operators that make declaration of an emergency class appropriate.

Q.137 Have you examined the licensees' procedures for notifying offsite authorities in the event of a radiological emergency at Indian Point, Unit 2 and Unit 3? Explain.

A.137 Yes, PASNY's Procedure IP-1030 and Con Ed's Procedure IP-1002 are the procedures that describe the initial notification required when an emergency is declared. I have interviewed the PASNY and Con Ed Shift Supervisors and have verified that they understand these procedures and their responsibility for implementing them.

Q.138 Do the licensees' bases and procedures for notifying offsite authorities conform to the requirements of NRC's regulations and the recommendations in NUREG-0654?

A.138 Yes, as noted in response to Question 41 the licensees bases and procedures for notifying offsite authorities conform to 10 CFR 50 Appendix E.IV.D.3 and the criteria of NUREG-0654, Appendix 1.

Contention 3.6 The emergency plans and proposed protective actions do not adequately take into account the full range of accident scenarios and meteorological conditions for Indian Point, Units 2 and 3.

Q.139 For Contention 3.6, describe the Commission's requirements and guidance concerning the capability of acquiring and evaluating meteorological information for onsite emergency preparedness, and compare the capability established by the licensees with that required by regulation and/or recommend in NUREG-0654.

A.139 10 CFR 50 Appendix E.IV.B requires a description of "The means to be used for determining the magnitude of and for continually assessing the impact of the release of radioactive material. The applicable guidance in NUREG-0654 I.5 states, "Each licensee shall have the capability of acquiring and evaluating meteorological information sufficient to meet the criteria of Appendix 2." The licensees equipment exceed the criteria of Appendix 2, since 3 towers are in operation, the 122 meter tower, the 30 meter on the EOF site, and a third backup tower. The meteorological program meets the regulatory requirements.

Q.140 For Contention 3.6, describe the Commission's requirements and guidance regarding the spectrum of off-normal conditions and postulated accidents to be used as a basis for onsite emergency preparedness, and compare the off-normal conditions and postulated accidents used by the licensees with those required and/or recommended in NUREG-0654.

A.140 10 CFR 50 Appendix E.IV.B requires "emergency action levels that are to be used as criteria for notification....The emergency action levels shall be based on in-plant conditions and instrumentation in addition to onsite and offsite monitoring." The guidance in NUREG-0654 I.1. states "each licensee shall identify plant system and effluent parameter values characteristic of a spectrum of off-normal conditions and accidents and shall identify the plant parameter values or other information which correspond to the example initiating conditions in Appendix 1." The licensees have developed implementing procedures for classifying accidents. The procedures list each of the conditions in NUREG-0654, Appendix 1 with the corresponding Indian Point Units 2 and 3 conditions. The licensees emergency action levels are based on specific indications of plant parameters. I have compared the list in NUREG-0654 and the licensees Emergency Action Levels and they are consistent.

Contention 4.2 (c) The following specific feasible offsite procedures should be taken to protect the public:

(c) License conditions should prohibit power operation of Units 2 and 3 when the roadway network becomes degraded because of adverse weather conditions.

Q.141 With respect to Contention 4.2(c), describe how recommendations for protective actions are developed based on plant conditions.

A.141 Recommendations for the protective action of shelter is the initial recommendation. This recommendation is made on the basis of a degraded plant condition before there is a release of activity from the plant. If subsequent plant conditions degrade further the recommendation may be made to evacuate out to a minimum radius. NUREG-0654 Appendix 1 gives specific recommendations which have been repeated in the licensee's procedures.

Q.142 For Contention 4.2(c), describe the extent to which adverse weather conditions have been accounted for in the emergency preparedness at Indian Point, Unit 2 and Unit 3.

A.142 Adverse weather may have the effect of increasing the time necessary to evacuate an area. The evacuation time estimates made by the licensees have included an estimate of evacuation times during adverse weather. Local officials would take these factors into account in making subsequent recommendations after the initial recommendation to take shelter.

Q.143 For Contention 4.2(c), describe how protective action recommendations would account for adverse weather conditions.

A.143 As stated in response to Question 141 and 142, in any case, the initial recommendation would be to take shelter and listen to further instructions on the EBS system. If weather systems were such that evacuation would not be feasible, more specific shelter options might be broadcast, e.g., to employ ad hoc respiratory protection, or to take shelter in a basement.

Q.144 Would there be a significant increase in the protection afforded the public within the plume exposure pathway EPZ by emergency preparedness at Indian Point, Unit 2 and Unit 3, if a license condition prohibited power operation during adverse weather which degraded the road network in the vicinity of Indian Point, Unit 2 and Unit 3? Explain.

A.144 There would be come reduction in risk to the public for those periods when the reactors are not in operation. However, this may be off set by frequent startups and shutdown transients and by the reduction of grid reliability for the delivery of electricity under adverse weather conditions. Because the preferred protective action for severe, fast release accident scenarios is sheltering until after plume passage and subsequent relocation from any area subject to ground contamination the reduction in individual risk from shutting down in anticipation of such scenarios would not depend on calculated evacuation times. We would expect that a more significant increase in overall protection during such conditions would be afforded by the licensees making recommendations to alert the general public at the site emergency level rather than the

general emergency level during any accident warranting these classifications, thus giving the public more time to take effective action (e.g., to make preparations for any precautionary evacuation that might be ordered by offsite authorities).

Contention 4.5 Specific steps must be taken by NRC, State, and local officials to promote a public awareness that nuclear power plant accidents with substantial offsite risks are possible at Indian Point.

Q.145 For Contention 4.5, describe the Commission's requirements and guidance for public education and information concerning emergency planning, and compare the provisions made by licensees for public education and information.

A.145 10 CFR 50 Appendix E.IV.D.2 states, "Provisions should be described for yearly dissemination to the public within the plume exposure pathway EPZ of basic emergency planning information, such as the methods and times required for public notification and the protective actions planned if an accident occurs, general information as to the nature and effects of radiation, and a listing of local broadcast stations that will be used for dissemination of information during an emergency. Signs or other measures shall also be used to disseminate to any transient population within the plume exposure pathway EPZ appropriate information that would be helpful if an accident occurs."

The licensees have complied with the first part of this requirement by distributing through the mail a brochure which addresses all of

the issues in that sentence. For the transient population, the licensees are committed to have a telephone page insert in the Fall, 1982, edition of the local telephone books, which will extract pertinent information from the brochure. The telephone page information will be available to all telephone users, both permanent residents and businesses, and transients wherever a telephone book is available, e.g., motel rooms. The licensees are planning to distribute a poster for places of public gathering, e.g., movies, meeting rooms. The poster is planned to have similar information as the telephone insert.

Contention 4.6 A maximum acceptable level of radiation exposure for the public must be established before any objective basis will exist for adequate emergency planning.

Q.146 For Contention 4.6, describe the Commission's requirements and guidance concerning acceptable levles of radiation exposure for the general public in the event of a reactor accident.

A.146 There are no acceptable levels of radiation exposure for the general public in the event of a reactor accident in the Commission's regulations.

Q.147 For Contention 4.6, describe the overall objective of emergency planning and your views on whether an objective basis exists for adequate emergency planning.

A.147 The overall objective of radiological emergency preparedness is to minimize the radiation dose that people might receive due to a reactor accident. With that object in mind, the NRC requires the

licensee to declare the emergency on the basis of plant parameters before there is a release of radioactivity, and with that same object in mind the local authorities are to activate an alarm system promptly, and that alarm system is to alert and notify people as quickly as possible.

Contention 4.7 The present emergency planning brochures and present means of alerting and informing the population of an emergency do not give adequate attention to problems associated with persons who are deaf, blind, too young to understand the instructions, or who do not speak English.

Q.148 For Contention 4.7, describe the Commission's requirements and guidance for alerting and informing the public and compare the provisions made by licensees to those requirements and/or recommendations of NUREG-0654.

A.148 The NRC requirements for educational material are stated in response to question 147. The requirements for alerting and informing the public are in 10 CFR 50.IV.D3..."the nuclear power reactor licensee shall demonstrate that administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure EPZ." The siren system that has been installed has the objective of prompt alerting of the public within the 10 mile EPZ. Arrangements have been made for radio and-TV stations in the Emergency Broadcast System (EBS) to broadcast messages to notify the public on what to do in a specific radiological emergency.

The comment concerning handicapped or young or non-English Speaking people can be made about many aspects of modern life. Boy Scouts help elderly people across the street because some elderly are confused by traffic signs and lights. Blind people need assistance in coping with emergencies.

The educational brochures referred to in response to Question 58 included a questionaire for people who would need assistance in an emergency. The questionaire was in the form of a stamped, self addressed series of questions. The response to this questionaire has been transmitted to local county authorities for a registry of residents for whom special arrangements would be made.

The public information staffs of both PASNY and Con Ed have underway a public information program of meetings with citizens groups, church groups, PTAs, organizations such as Rotary to explain what could happen in an emergency and what people should be prepared to do. This program should also help to get the word out to people with special problems.

The NRC staff, in promulgating regulations and guidance, and in requiring licensees to disseminate information to the public, does not expect immediate 100% understanding by all the general public. We expect, in a severe emergency that people will help one another. This is what happens in all other kinds of emergency situations

where everyone is subject to the same conditions; we have no reason to expect that it would not happen in a radiological accident.

JOHN R. SEARS

RESUME'

Prior to 1952, I was employed in field jobs in various aspects of mechanical engineering. In 1952, I joined Brookhaven National Laboratory as a Reactor Shift Supervisor on the Brookhaven Graphite Reactor. While at Brookhaven, I completed a series of courses given by the Nuclear Engineering Department in nuclear engineering. These courses were patterned on the ORSORT programs. In 1956, I was appointed Project Engineer on the Brookhaven Medical Research Reactor. I was a member of the design group, participated in critical design experiments, wrote specifications,, coauthored the hazards report, was responsible for field inspection and contractor liaison, trained operators and loaded and started up the reactor. About three months after start-up, in 1959, following the successful completion of proof tests and demonstration of the reactor in its design operating mode for boron capture therapy of brain cancer, I accepted a position as reactor inspector with the Division of Inspection, U. S. Atomic Energy Commission. In 1960, I transferred, as a reactor inpsector, to the newly-formed Division of Compliance. I was responsible for the inspection, for safety and compliance with license requirements, of the licensed reactors and the fuel fabrication and fuel processing plants, which use more than critical amounts of special nuclear material, in the United States.

In September 1968, I transferred to the Operational Safety Branch, Division of Licensing. My responsibility included development of appropriate operational aspect of license applications and staff assistance to reactor applicants submittals in the areas of Organization and Staff Qualifications, Training Programs, Procedures, Start-up Testing Programs Indu

JOHN R. SEARS

RESUME'

Prior to 1952, I was employed in field jobs in various aspects of mechanical engineering. In 1952, I joined Brookhaven National Laboratory as a Reactor Shift Supervisor on the Brookhaven Graphite Reactor. While at Brookhaven, I completed a series of courses given by the Nuclear Engineering Department in nuclear engineering. These courses were patterned on the ORSORT programs. In 1956, I was appointed Project Engineer on the Brookhaven Medical Research Reactor. I was a member of the design group, participated in critical design experiments, wrote specifications,, coauthored the hazards report, was responsible for field inspection and contractor liaison, trained operators and loaded and started up the reactor. About three months after start-up, in 1959, following the successful completion of proof tests and demonstration of the reactor in its design operating mode for boron capture therapy of brain cancer, I accepted a position as reactor inspector with the Division of Inspection, U. S. Atomic Energy Commission. In 1960, I transferred, as a reactor inpsector, to the newly-formed Division of Compliance. I was responsible for the inspection, for safety and compliance with license requirements, of the licensed reactors and the fuel fabrication and fuel processing plants. which use more than critical amounts of special nuclear material, in the Eastern United States.

In September 1968, I transferred to the Operational Safety Branch, Directorate of Licensing. My responsibility included development of appropriate guides for evaluatio of operational aspect of license applications and staff assistance in review of power reactor applicants submittals in the areas of Organization and Management.. Personnel Qualifications, Training Programs, Procedures and Administrative Control, Review and Audit, Start-up Testing Programs Industrial Security and Emergency Planning

The Branch was reorganized as the Industrial Security and Emergency Planning anch in April 1974 to place increased emphasis and attention upon areas of physical security and emergency planning.

In 1976 I transferred to the Divison of Operating Reactors as the sole reviewer responsible for review of emergency planning for all the operating reactors in the United States.

New York City College, 1950 - Mechanical Engineering

Argonne International School of Reactor Technology, 1961 - Reactor Control Course

GE BWR System Design Course, 1972

Popo-U.S. Army, 1974 - Course in Industrial Defense and Disaster Planning

Instructor at DCPA , 1976, 1977 - Course in Emergency Planning

Director, 1962 - Reactor Program, Atoms for Peace Exhibit, Bangkok, Thailand

Director, 1966 - Atoms for Peace Exhibit, Utrecht, Holland