

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

CONSOLIDATED EDISON COMPANY  
OF NEW YORK (Indian Point, Unit 2)

POWER AUTHORITY OF THE STATE OF  
NEW YORK (Indian Point, Unit 3)

Docket Nos. 50-247-SP  
50-286-SP

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DIRECT TESTIMONY OF PHILIP MCINTIRE,  
IHOR HUSAR AND JOSEPH H. KELLER  
CONCERNING COMMISSION QUESTIONS 3 AND 4

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June 7, 1982

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The basis of the Presidential Directive is Executive Order 12148, which charges FEMA with the establishment of policy for the coordination



of civil emergency (including manmade) planning, management, mitigation, and assistance functions of executive agencies. The Director of FEMA is also charged with representing the President in working with State and local governments and the private sector to stimulate civil emergency preparedness, mitigation, response and recovery programs. Section 109 of Public Law 96-295, "Nuclear Regulatory Commission Appropriations Authorization" of June 1980, requires the NRC to consult with FEMA on standards for the preparation of State and local radiological emergency plans, and in making determinations on the adequacy of these plans.

Under 10 C.F.R. Parts 50 and 70, a Nuclear Regulatory Commission Final Rule, the NRC will make findings as to whether the offsite emergency radiological plans and preparedness provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at a commercial nuclear power plant. These findings are based on FEMA's findings and determinations as to whether State and local emergency plans are considered to be capable of being implemented.

FEMA's proposed rule, 44 C.F.R. 350, establishes policy and procedures for the policy and approval of State and local emergency plans and preparedness for coping with offsite effects of radiological emergencies which may occur at nuclear power plants. It describes the process by which FEMA makes findings and determinations as to the adequacy of State and local plans, and prescribes standards for State and local plans and preparedness. The standards used for review and approval of plans under this FEMA rule are included in the joint NRC/FEMA guidance document entitled, "Criteria for Preparation and Evaluation of

Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants". NUREG-0654/FEMA REP-1, Rev. 1. This joint guidance applies to the three major entities responsible for radiological emergency plans and preparedness -- the licensee, the State government, and the local government. This guidance document also includes detailed criteria that expands on the standards that are required to be reflected in the plans and preparedness of State and local governments, and nuclear power plant licensees.

The 44 C.F.R. 350 charges the FEMA Regional Directors with responsibility for chairing the Regional Assistance Committees (RACs). This committee exists in each of the ten Federal Regional Offices and is comprised of representatives from the Nuclear Regulatory Commission, Department of Health and Human Services, Department of Energy, Department of Transportation, Environmental Protection Agency, Department of Commerce/National Oceanic and Atmospheric Administration, and the U.S. Department of Agriculture. The basic function of the RAC is to assist State and local government officials in preparing and revising the radiological emergency plans, which are submitted to the FEMA Regional Director. Each representative reviews the plans from his agency's area of expertise. After the RAC has reviewed and commented on the plans, they are returned to the FEMA Regional Director who prepares a combined evaluation and forwards the plan to the FEMA Associate Director for State and Local Programs and Support.

The plan will be distributed to the Federal Radiological Preparedness Coordinating Committee for their review and comment. The Associate Director, as well as the FRPCC, shall review and comment on the

plans within 30 days after receipt and he informs the Governor as to whether the plan can be approved. The Associate Director also notifies the NRC and has the decision published in the Federal Register. The decision of the Associate Director, whether an approval or denial, can be appealed within 30 days directly to the FEMA Director, and any appeal must be based solely on the premise that the Associate Director's decision was not supported by the record.

FEMA and NRC also have a memorandum of understanding (MOU), which defines inter-agency responsibilities. Specifically, FEMA has agreed to make findings as to whether State and local offsite emergency plans are adequate and capable of implementation. Such findings are referred to as "interim" because they are provided outside the formal procedures set forth in 44 C.F.R. 350 and they reflect the status of the plans and the capability of the response at the time of evaluation. Requests for interim findings are usually made by the NRC to support the NRC Staff's presentations in the licensing process.

By the terms of the MOU, FEMA is also responsible for providing "expert witnesses" at the request of NRC, to testify at the ASLB hearings on FEMA findings.

I, Philip McIntire, am employed as the Acting Chief Natural and Technological Hazards Division, and I, Ihor Husar, am employed as the Program Manager for the Radiological Emergency Planning Program of the Federal Emergency Management Agency, Region II, New York. In our respective positions we are responsible for providing assistance to State and local governments in the preparation of Radiological Emergency

Response Plans (RERPs). We also review these RERPs to assure compliance with NUREG-0654 FEMA REP 1, (Revision 1), and make recommendations to the Regional Director regarding the RERPs' compliance with those criteria. Each review involves an analysis of the written RERP, the evaluation of an exercise of the RERP, at least one public meeting on the RERP, and input from those Federal agencies represented on the Regional Assistance Committee (RAC).

On July 21, 1981, the State of New York submitted to FEMA the generic RERP for New York State. On August 18, 1981, the State Site Specific annex was provided along with the annexes containing the response plans for the four counties within the ten mile EPZ. Comments were received from the RAC members, coordinated by FEMA and provided to the State of New York in two separate letters, one dated September 29, 1981 and the other dated December 31, 1981, to assist New York in improving their plans for Indian Point.

The State Plan and its annexes were tested in connection with the exercise held for Indian Point on March 3, 1982. An assessment of the Indian Point Exercise was made available May 27, 1982 with a public meeting scheduled for June 16, 1982.

The State of New York has been provided an opportunity to review and comment on deficiencies noted in the plan and the exercise. Subsequently, a FEMA Region II analysis of the adequacy of these plans will be made and forwarded to FEMA headquarters in Washington, D.C. Upon receipt of this information the Associate Director for State and Local Programs and Support shall also conduct a review of these plans and determine if the plans are adequate to protect the health and safety of

the public living in the vicinity of the nuclear power facility by providing that appropriate protective measures can and will be taken offsite in the event of a radiological emergency; and are capable of being implemented before making a recommendation to the NRC as to the adequacy of those Plans.

The purpose of this testimony is to respond to the contentions relating to offsite preparedness at Indian Point as admitted by Board Order of April 23, 1982.

Q.1. Do you have statements of professional qualifications?

A. Yes. Our statements of professional qualifications are attached to this testimony.

Q.2. When did Joseph Keller first become involved in emergency planning?

A. I became involved in radiological emergency planning in August 1979 when a contract for support to the Federal Interagency Task Force on Offsite Emergency Instrumentation for Nuclear Incidents was entered into by my employer. I was assigned the responsibility of principal investigator on the contract.

Q.3. When did Joseph Keller first become involved in emergency planning as it related to the Indian Point Nuclear Power Plants?

A. My first involvement with the Indian Point Nuclear Power Plants was in February 1982.

Q.4. Please describe the nature of that involvement up to the present time, including the various activities engaged in, persons communicated with and responsibilities.

A. A change in scope in the original contract mentioned in Question 2 resulted in availability of our support to the Regional Assistance Committees. Through this mechanism, I was requested by Region 2 RAC chairman to assist in the evaluation of the Indian Point exercise of March 3, 1982. I was the contact of providing a five member team of Idaho National Engineering Laboratory personnel to act as observers at the exercise. The specific observer assignments were made by the RAC chairman. I have communicated with the members of the RAC, FEMA Region 2 personnel involved with the Indian Point exercise and FEMA National Headquarters personnel associated with the administration of the Contract which provides for INEL services.

Q.5. When did Philip McIntire first become involved in emergency planning?

A. In 1966 he joined the Office of Emergency Planning in Washington, D.C. This was a predecessor agency of the Federal Emergency Management Agency. In 1975 he first became involved in emergency radiological planning when the Federal Disaster Assistance Administration became a member of the Committee that preceded the Regional Advisory Committee.

Q.6. When did Philip McIntire first become involved in emergency planning as it related to the Indian Point Nuclear Power Plants?

A. In November 1981 when he was named Acting Chief of the Natural and Technological Hazards Division.

Q.7. Please describe the nature of that involvement up to the present time, including the various activities engaged in, persons communicated with and responsibilities.

A. His involvement with Radiological emergency planning in FEMA began soon after FEMA was assigned its offsite responsibilities. He was Acting Director of the Plans and Preparedness Division, for the period April-July 1981 that Division under Ihor Husar's day to day administration planned and carried out the first exercise at Salem in April 1981 and Nine Mile Point in September 1981. When FEMA was realigned in November 1981 he was named as Acting Chief of the Natural and Technological Hazards Division. In that position he has managed the Division's plan reviews and exercise observations at the Ginna, Indian Point and Oyster Creek power generating stations. The second Salem exercise scheduled for April 19 had to be postponed because of a strike.

In his present position he has met with the top FEMA staff at FEMA's National Office, the Regional Director of NRC Region I, and State Officials working in the REP program in order to help formulate policy and make decisions.

Q.8. When did Ihor W. Husar first become involved in emergency planning?



A. In April, 1979 he joined the Defense Civil Preparedness Agency (DCPA) in New York. DCPA was one of the predecessor agencies of the Federal Emergency Management Agency, (FEMA).

Q.9. When did Ihor W. Husar first become involved in emergency planning as it related to the Indian Point Nuclear Power Plants?

A. In March, 1980, as Radiological Emergency Preparedness Program Manager for the New York FEMA Region, he began reviewing existing offsite emergency plans for all nuclear power plants in New Jersey and New York, including Indian Point.

Q.10. Please describe the nature of that involvement up to the present time, including the various activities engaged in, persons communicated with and responsibilities.

A. His involvement in radiological emergency preparedness in FEMA began in February 1980, soon after FEMA was assigned the lead agency responsibility for offsite emergency preparedness. The following month, he was designated the Radiological Emergency Preparedness (REP) program manager for FEMA Region II. In this capacity he provided assistance to the States of New Jersey and New York in their development of REP plans for commercial nuclear power plants within these states. During this time period, he served as alternate to the Chairman of the Regional Assistance Committee (RAC). In May, 1980, he was appointed RAC Chairman by the Regional Director and directed the RAC activities in the New York Region for the five operating reactor sites (Oyster Creek, Salem, Nine Mile Point/Fitzpatrick, Ginna and Indian Point), he directed the Federal



observations for exercises at Salem and Nine Mile Point and was responsible for accomplishing the RAC reviews of draft State and local plans for all operating New Jersey and New York reactor sites as well as formal plan submissions for Nine Mile Point/Fitzpatrick and Ginna. During the period of July to October 1981, he served as Acting Chief, Plans and Preparedness Division. Although he relinquished the function of RAC Chairman during this period due to the demands of the managerial position, he maintained supervision of the REP program. When FEMA was realigned in November, 1981, he was named REP program manager for the Region, assigned to the Natural and Technological Hazards Division. In his present position and as RAC Chairman he was met with top FEMA management at the National Office responsible for the REP program as well as State officials responsible for REP. He performed the FEMA review of plans for Ginna and coordinated the plan review for Indian Point. Recently, he has met with NRC Region staff and licensee representatives from the five operating nuclear power plant sites to discuss FEMA acceptance testing of the Plume Exposure Pathway Emergency Planning Zone alert and notification systems.

Q.11. In the course of your review of offsite emergency planning at the Indian Point Nuclear Power Plants, what documents submitted by the State have you and your staff reviewed?

A. The following documents have been reviewed:

- a. New York State Radiological Emergency Preparedness Plan, July 1981 including Indian Point Site specific Annex received Aug. 18, 1981.

- b. Orange County Radiological Emergency Response Plan (Vol. 1) Rev. 8/1/81.
- c. Orange County Radiological Emergency Response Plan Procedures (Vol. 2) Rev. 8/1/81.
- d. Putnam County Radiological Emergency Response Plan (Vol. 1) Rev. 8/1/81.
- e. Putnam County Radiological Emergency Response Plan Procedures (Vol. 2), Rev. 8/1/81.
- f. Rockland County Radiological Emergency Response Plan (Vol. 1), Rev. 8/1/81.
- g. Rockland County Radiological Emergency Response Plan Procedures (Vol. 2), Rev. 8/1/81.
- h. Westchester County Radiological Emergency Response Plan (Vol. 1), Rev. 8/1/81.
- i. Westchester County Radiological Emergency Response Plan Procedures (Vol. 2), Rev. 8/1/81.
- j. State of New York Emergency Worker Training Course for the Indian Point Nuclear Power Station.

Q.12. Are you authorized to present to the Board the current FEMA evaluation of the Indian Point RERP for offsite emergency preparedness? Does your testimony represent that current FEMA evaluation?

A. Yes.

- 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 set forth in 10 C.F.R. 50.47(b), nor do they meet the standards set forth in Appendix E to 10 C.F.R. Part 50.

Q.13. Does the State plan with its annexes for Indian Point contain any deficiencies with respect to the sixteen mandatory standards of 10 C.F.R. 50.47(b) (NUREG-0654, FEMA-REP-1, Rev. 1)?

A. Yes. These deficiencies were noted and transmitted by letters dated September 29, 1981 and December 31, 1981 to the State of New York and are attached herein as Attachments A and B.

Q.14. Are the relationships between the licensees, State and local governments, and the various support organizations delineated in the plan? Explain.

A. The plan that was reviewed by FEMA was inconsistent in identifying who is in charge prior to and after a state declaration of emergency. A change to Article 2b, New York State Executive Law corrected that deficiency, but to date it has not been incorporated into in the plan. During the exercise on March 3, 1981, the assignment of responsibilities prior to and after State declaration, was satisfactorily demonstrated. There are other related deficiencies that are identified in FEMA comments on the plan contained in two letters furnished to the State and referenced in response to Question 13, above.

Q.15. Are the appropriate public officials at the state and county levels including County Department heads aware of the details of the Plan?

A. Based on the results of the March 3, 1982 exercise it appears that virtually all appropriate officials at the State and local level were aware of their responsibilities and had knowledge of the appropriate sections of the plan.

Q.16. Does the plan demonstrate the existence of current letters of agreement delineating the respective responsibilities and commitment of resources of support organizations?

A. Based on FEMA's review of the plans, FEMA does not believe that all facilities and resources of non-government organizations have been identified. Although some letters of agreement are referenced, FEMA notes that the following letters are not referenced: written arrangements between the respective bus companies and the counties in which they are located, volunteer fire companies, and ambulance corps. The State has not provided FEMA with a schedule of corrective actions regarding comments on the plan furnished to the state.

Q.17. Does the plan include a time frame in which emergency response support and resources will be available?

A. The time frames in which Federal (DOE) assistance will be available are described in the plan. There is no planning requirement for providing time frames of non-Federal response support and resources. FEMA's review of the plan revealed that the procedures for alerting, notifying and mobilizing emergency response personnel are adequate.

Q.18. Have provisions been made to provide a backup communication system between offsite support organizations to assure availability of communications in case of loss of normal power, problems with commercial telephone service or adverse weather? If so, please describe those backup systems.

A. There is adequate backup communications at the State level between the State Emergency Operations Center (EOC) in Albany and the State District Office in Poughkeepsie, N.Y. These systems include a dedicated teletype, VHF radio link and Radio Amateur Civil Emergency System (RACES) link. Both State Office locations have emergency generators with capacity to provide power for a fourteen day period. These backup systems are in addition to a priority trunk line telephone system between these two sites. FEMA found that the backup communications in the four counties were not in the plan. However, backup capability utilizing RACES and other methods was demonstrated at the exercises at Westchester and Putnam Counties.

Q.19. Please describe the status of the prompt notification system surrounding Indian Point. Please describe the results of any tests of the system conducted or observed by FEMA. Please detail the status of FEMA's review of the placement of the system and the proposed acceptance testing.

A. Installation of the siren system was completed on January 31, 1982. The entire siren system was activated as part of the exercise on March 3, 1982. A significant number of the sirens failed to function properly during the exercise. The placement of the siren system as part of the overall design analysis is currently under review. Acceptance testing of the siren system has not been conducted nor has a date been scheduled as yet.

Q.20. Is the content of the Emergency Broadcast System (EBS) messages sufficient to assure proper notification?

A. As observed during the exercise the Emergency Broadcast System (EBS) messages were sufficient to assure proper notification.

Q.21. Does the prompt notification system provide adequate notice to non-English speaking residents of the plume exposure pathway EPZ?

A. Currently the brochure is only printed in English and EBS messages are only broadcast in English.

Q.22. Does the prompt notification system make special provision for individuals with learning disabilities, deaf and hearing impaired handicapped and other individuals residing within the plume exposure pathway EPZ with special needs?

A. The public education brochure contains a mail back tear-out card which, according to the instructions in the brochure, should be completed and sent in by or for people with special needs, such as the deaf. The cards are to be mailed to the Four County Nuclear Safety Committee in order that special provisions can be made on a case by case basis.

Q.23. Does the prompt notification system make special provision for "latch-key" children residing within the plume exposure pathway EPZ?

A. The public education brochure explains that all members of a family should be prepared for an accident at Indian Point. If residents have a prior plan for emergency action, they are much more likely to heed

warnings. The most effective warning is one issued to people who are convinced in advance that they could be at risk, who have given thought to how to take protective action, and who are now given evidence to validate the existence of a current threat to them personally not just to the community as a whole. This is the basis for the utilization of Emergency Response Planning areas. If children are to be left alone on a regular basis a tear-out card could be sent back to the Four County Nuclear Safety Committee to indicate their need for special attention. Disaster history has consistently shown that individuals rely on the extended family and other important social contacts during warning and response periods in natural disasters. The literature as well as prior experience with natural disaster situations indicates that friends and relatives will assist special populations, such as latch key children in an emergency situation.

Q.24. Are resources available to assure prompt communication among principal response organization, emergency personnel and the public in the case of a major radiological emergency?

A. During the March 3, 1982 exercise communications among the participants and the general public were generally good. The public would receive most of their emergency information instructions over the EBS. The GINNA incident of January 25, 1982 indicated that the media carried out their responsibilities in a professional manner.

Q.25. Do adequate communication facilities exist in Rockland County?



A. At the time of the exercise there was a definite shortage of actual phones for the emergency workers, although the jacks were in place. RACES people were available as a backup system. RACES could have been utilized more effectively during the exercise.

Q.26. Has a distribution of materials as required by Appendix E to 10 C.F.R. Part 50, Section IV.D.2 been made? If yes, when and how was said distribution accomplished?

A. Mailout of a public information brochure to 100,000 residences and businesses was made between February 15 and February 23, 1982. Utility customer mailing lists were used. Requests for approximately 800 more brochures were received and filled. The brochure contains the necessary information. It appears that the distribution of the brochure was good, including the identification of residents Emergency Response Planning Areas (ERPA). However, based on interviews conducted during the March 3, 1982 exercise, it became apparent that not all individuals were aware of the ERPA in which they reside. A potential problem with the distribution arises from the fact that individuals who are not utility customers (e.g., renters in dwellings where utility bills are paid by landlord) may not have received the brochure.

Q.27. Is the general public residing within the ten mile EPZ aware of the existence of the Plan? What efforts have been made to disseminate information contained in the Plan?



A. The public has been sent a public education brochure. In addition, media coverage of all phases of review and exercise activities has been extensive.

Q.28. Does the plan include a separate system for notification of transient populations in the plume exposure pathway EPZ? If so, have these provisions been implemented?

A. The plan is predicated on the assumption that transients would hear the sirens or other alerting systems. However, signs or other measures to disseminate information to the transient population were not in place at the time of the exercise.

Q.29. Does an emergency radiation monitoring capability exist at the state level, county level? Are there adequately trained staff and appropriate equipment assigned to this support organization?

A. The State of New York has capability in the area of emergency radiation monitoring however, it has opted not to establish this capability for field measurements of airborne plumes. The criteria in NUREG-0654 (Section II, I-9) requires the State to have the capability to detect and measure radioiodine concentrations at  $1 \times 10^{-7}$  u Ci/cc level. In lieu of State measurements, the plan calls for the State use of the data of the Nuclear Facility Operator (NFO) emergency field monitoring teams. The four counties also had monitoring capability. Changes are required in the monitoring systems. These systems were in use by the county teams during the March 3, 1982 exercise, to enable measurements of radioiodine in the presence of noble gases. The equipment used by the

monitoring teams during the exercise was not the equipment described in the plan. The personnel observed during the exercise were adequately trained.

Q.30. Has the capability to respond and assess radiological hazards caused by liquid or gaseous releases from Indian Point been demonstrated?

A. The capability to respond to and assess radiological hazards caused by liquid or gaseous releases from the Indian Point site were demonstrated in the March 3, 1982 exercise. The discussion of this demonstration is found in the Post Exercise Assessment document. In Orange, Putnam and Westchester counties the capability was found to be adequate with some deficiencies. While in Rockland County the capability was found to be weak. The State capability was found to be good. Specific recommendations for improvements are also included in the Post Exercise Assessment.

Q.31. Are there procedures and equipment consistent with the requirements of NUREG-0654 to assess doses received by emergency workers?

A. Based on review of the plans, procedures to assess emergency workers exposure were identified. Based on observation during the exercise improvements in instrumentation are required. (See Q.32)

Q.32. Are personal dosimeters of sufficient quantity and appropriate range available for utilization by emergency workers?

A. NUREG-0654/FEMA-REP-1 criteria calls for both self-reading and permanent record personnel dosimeters as does the New York State plan.

Federal guidance, FEMA-REP-2, suggests two self-reading dosimeters of overlapping ranges. Only a high range self-reading dosimeter was available for emergency workers at the March 3 exercise

Q.33. Are there provisions in the plan for the maintenance of permanent records of radiation exposure received by emergency response personnel?

A. The plan provides a procedure for keeping records of radiation exposure received by emergency workers. The procedure makes it the responsibility of workers to read and record exposure readings from their pencil dosimeters on a card. These cards are collected and retained by the State. The State plan requires self-reading dosimeters and permanent record devices such as film badges or thermo luminescent dosimeters (TLDs).

Q.34. State the current status of the issue of thyroid protection utilizing KI for emergency workers in New York.

A. New York State in its plan does not currently intend to use KI for emergency workers or the general public.

Q.35. Are decontamination facilities, equipment and trained personnel available to respond to an incident at Indian Point consistent with the requirements of NUREG-0654/FEMA REP-1?

A. Based on review of the plan and observations of the March 3, 1982 exercise decontamination facilities, equipment and trained personnel are available. Improvements are needed in handling of contaminated

liquid wastes generated during decontamination of vehicles as well as ultimate disposal of contaminated clothing.

Q.36. Are equipment and trained personnel consistent with the requirements of NUREG-0654 available to monitor evacuees at reception centers?

A. The plan calls for the establishment of congregate care facilities outside the ten-mile EPZ to be manned with trained personnel and provided with equipment to monitor evacuees. This capability was demonstrated during the March 3, 1982 exercise.

Q.37. What is the status of the capability of the American Red Cross to coordinate and staff congregate care facilities?

A. Based on FEMA's experience in dealing with the Red Cross in natural disasters over the years, the Red Cross has time after time, demonstrated their ability to staff and manage sheltering operations. FEMA has confidence in the ability of the Red Cross to carry out its responsibilities regarding uncontaminated personnel. Individuals identified as contaminated would undergo decontamination procedures and medical treatment, if necessary.

Q.38. Are there sufficient transportation resources available to assure the transportation of contaminated individuals in the event of an incident at Indian Point?

A. There is insufficient information contained in each of the four county annexes of the plan to determine the adequacy of the arrangements for transporting victims of radiological accidents to medical support facilities. The exercise did demonstrate the transportation of an accident victim from the plant to a hospital.

Q.39. Does a method exist for periodically estimating the total population exposure? If yes, describe the method and how it would be utilized.

A. Based on our plan review (Attachment A and B), a determination was made that the State has not established a method for periodically estimating total population exposure. The current status of this planning deficiency has not been furnished to FEMA by the State.

Q.40. Are there any established criteria upon which to base a decision to reenter an area after an evacuation had been ordered? If yes, please identify.

A. Yes, the criteria for reentry of an area previously evacuated are contained in Planning Standard entitled, "Recovery and Reentry Planning and Postaccident Operations" (Section II, Planning Standard M, NUREG-0654/FEMA REP-1).

Q.41. What is the purpose of drills and exercises? Do the drills and exercise provide a realistic test of the emergency preparedness capabilities of the participants?

A. An exercise is an event that tests the integrated capability and major portion of the basic elements existing within emergency preparedness plans and organizations. A drill is a supervised instruction period aimed at testing, developing and maintaining skills in a particular operation. Drills and exercises test specific components of the preparedness system, including the plans. Drills and exercises provide the most realistic test of emergency preparedness capabilities short of that of an actual incident.

Q.42. What are the training criteria and methods employed for emergency response personnel as set forth in the plan?

A. Radiological response training for appropriate individuals is addressed in the plan. Organizations participating in and receiving the training are identified. Programs of instruction and qualifying personnel who will implement the plan are also addressed for the categories of functions described in Section II, 0.4, NUREG-0654/FEMA REP-1 (Reference: State Plan, Part I, Section II and Part III, Section I, Procedure F). Deficiencies in the Plan regarding radiological training are identified in Attachment A and B. Deficiencies revealed during the March 3, 1982 exercise that relate to training are identified in the Post Exercise Assessment Report. To date, the State has not provided FEMA with a schedule of corrective actions that relate to these plan review comments.

Q.43. What provisions have been made to update the plan? What provisions have been made to inform the general population residing within the ten-mile EPZ of any revisions to the plan?

A. We have been informed informally, by New York State that plan revision is an ongoing dynamic process. We are still awaiting a schedule for remedial actions based on the plan review. Through the ongoing public education program the general public will be informed of significant change to the plans.

3.2 Emergency planning for Indian Point Units 2 and 3 is inadequate in that the plans make erroneous assumptions about the response of the public and of utility employees during radiological emergencies.

Q.44. What does the literature as well as experience show to be the expected response of the general population in cases of disasters and radiological incidents?

A. In over thirty years of research, the evidence is that a negligible proportion of persons panic in disaster situations. The research covers a range of situations from massive strategic bombing in Europe and the two atomic bombs dropped on Japanese cities during World War II through more recent natural and technological hazards including the Three Mile Island accident and the eruption of Mount St. Helens, and includes fires, flood and earthquakes. Panic occurs only under special circumstances: e.g. when people are faced with a highly visible and immediate threat to survival within an enclosed area and escape routes are closed off. Non-cooperative behavior during evacuation is almost always isolated. FEMA does not believe that this would be a significant factor in the event of an accident at Indian Point.

Q.45. What is the anticipated response of emergency workers such as police officers, firemen, and traffic control officers if they feel they may be exposed to some sources of contamination?

A. The history of disaster response has consistently shown that emergency workers more than meet their responsibilities when faced with emergency situations. There is no guarantee this would happen if there was an accident at Indian Point. However, it is a strong general planning assumption.

Q.46. On what do you base your assumption that non-emergency workers such as teachers, will remain to assist in an evacuation or sheltering instead of leaving to rejoin their families?

A. The history of disaster response has consistently shown that non-emergency workers also more than meet their responsibilities when faced with emergency situations. There is no guarantee this would happen if there was an accident at Indian Point. However, it is a strong general planning assumption. Continued improvement in training and the public education program will provide a higher confidence level to non-emergency workers regarding the safety of their families.

Q.47. Has the effects of spontaneous evacuation been considered in the evaluation of the Plan surrounding Indian Point?

A. Experience has shown that spontaneous evacuation will occur normally. As a result it is entirely possible that fewer people would actually have to evacuate when an order to leave was issued.



Nevertheless, planning is based on movements of the entire population in accordance with NUREG-0654.

Q.48. How will the control of access to certain roadways be enforced?

A. The plan calls for traffic control checkpoints to be set up at preestablished locations and manned by state or local police.

Q.49. Are parents expected to follow instructions and leave the plume exposure pathway EPZ without stopping to pick up their children from school? What effect will parents driving to school to pick up their children have on an orderly evacuation or sheltering effort?

A. The plan provides for the parents to leave the plume exposure pathway EPZ, if ordered, without picking up their children at school. Children at each school, it is planned, will be moved as a group and reunited with the parents outside the plume exposure pathway EPZ.

FEMA is not sure what percentage of the parents would deviate from the plan. If a significant percentage of parents did drive to the school to pick-up their children it would have an impact on an evacuation. FEMA believes that an increased public education program would result in a rise in the confidence level, on the part of the parents, in the plan and lead to a reduction in the number of parents who would actually drive to the school, to pick-up, their children.

Q.50. What plans exist to reunite families after evacuation?

A. The plan addressed this question as follows:

For schools located within the EPZ or effected ERPAs, school authorities may be advised by the County EOC that they should have all children, residing both within and outside the EPZ or the affected ERPAs board buses to be taken to their designated school reception centers (Table 1) to await pickup by their families (Procedures 4, Attachment 1, each county Annex).

Q.51. What impact will separation of family members have on the orderly evacuation or sheltering of the general population?

A. While it is impossible to give a categorical answer it should be noted that most major evacuations have been carried out with the family unit emerging intact. This is one area where further education will increase parents' confidence that their children will be evacuated safely by teachers or other adults.

Q.52. What actions are planned to evacuate or shelter transient population?

A. The plan does not address transients as a special population group for evacuation and sheltering. They are included in the evacuation time estimate for the general population.

Q.53. Has the bus evacuation routes for the general population been reviewed to assure that a bus can safely traverse the route?

A. Appendix A, Attachment 3, paragraph A, of the County Radiological Emergency Response Plans states that "Planned routes have also been checked for tight turns, narrow or congested streets, one way streets, low clearance bridges, low weight limit bridges, and other such

operating restrictions." It can therefore be deduced that the bus evacuation routes for the general population have been reviewed.

Q.54. What effect will a power failure have on an evacuation?

A. A power failure during an evacuation would have significant initial affects brought on by traffic-signals and gas pumps not functioning. During the New York City black-out of 1977 volunteers and off-duty officials manned key traffic control points until off-duty personnel could be recalled to duty.

Q.55. What impact is expected on telephone service during an emergency?

A. It can reasonably be expected that the telephone system could become overloaded in the event of an incident. This is why NUREG-0654 requires a backup communication system and an effective alert and notification system via EBS so people will not be dependent upon the phones.

3.3 The present estimates of evacuation times, based on NUREG-0654 and studies by CONSAD Research Corporation and by Parsons, Brinckerhoff, Quade & Douglas, Inc., are unreliable. They are based on unproven assumptions, utilize unverified methodologies, and do not reflect to the actual emergency plans.

Q.56. Are there sufficient trained personnel available to direct traffic?

A. Adequate provision has been made in the plans to direct traffic. The exercise demonstrated a capability for the control of

traffic. The State provided supplemental assistance to Rockland County when some county law enforcement staff chose not to participate in the exercise.

Q.57. Does the plan include information on the availability of towing equipment to handle automotive breakdowns.

A. The four county annexes to the State Plan do not address policies or procedures regarding the use of tow trucks in connection with evacuations. County policies are not clear as to what to do with stalled vehicles. However, local authorities deal with automotive breakdowns on a daily basis.

Q.58. Are different procedures for the evacuation of school children assumed to be utilized in the studies of evacuation times than are actually provided for in the plan?

A. Not to our knowledge.

Q.59. Is time available to evacuate school children and return and then carry out the assigned bus evacuation routes for the general population?

A. Tables A-5 and A-7 of Appendix A of the County Radiological Emergency Response Plans contain the evacuation time estimates for special facility and transient population for normal and adverse weather conditions. School children are included as a population subgroup for the evacuation time estimates present in Tables A-5 and A-7. Tables A-4 and A-6 contain the evacuation time estimates for the general population

under normal and adverse weather conditions. By comparing Tables A-4 and A-6 with Tables A-5 and A-7 respectively, it can be deduced that the school children will be evacuated before the general population.

Q.60. Have the studies of evacuation times addressed the issue of the transportation needs of the handicapped as they relate to overall evacuation time?

A. The study entitled: "Evacuation Time Estimates for Areas Near the Site of Indian Point Power Plants" prepared by Parsons, Brinckerhoff, Quade & Douglas, Inc. did identify nine special facilities that require additional time to evacuate. The planning process provide for tear-out cards to be mailed back by people with handicaps and other special circumstances so that local authorities can provide for their evacuation.

Q.61. Are there certain circumstances whereby evacuation would not be available as a protective measure? If yes, what other actions would be taken?

A. The plan states (Part I Section III. Page III-52) that in cases where projected or actual offsite doses would indicate evacuation as a protective action, and where evacuations cannot be implemented because of time constraints and/or impediments to highway movement, general sheltering may be implemented in lieu of evacuation.

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

Q.62. What is the purpose of drills and exercises? Do the drills and exercise provide a realistic test of the emergency preparedness capabilities of the participants?

A. An exercise is an event that tests the integrated capability and major portion of the basic elements existing within emergency preparedness plans and organizations. A drill is a supervised instruction period aimed at testing, developing and maintaining skills in a particular operation. Drills and exercises test specific components of the preparedness system, including the plans. Drills and exercises provide the most realistic test of emergency preparedness capabilities short of that of an actual incident.

Q.63. Is the effectiveness of the drills and exercises decreased because they can only test a limited range of events at a time?

A. It is never possible to duplicate all of the facets of an actual emergency situation in an exercise or drill based on a prepared scenario. However, FEMA believes that even though it is not possible to precisely duplicate real emergencies, there is a sufficient level of realism in exercise and drills to effectively test emergency plans and capabilities.

Q.64. Is there funding available for the conduct of drills and tests? If funding is unavailable has this hindered the effectiveness of the drills and tests conducted to date?

A. Each utility makes monies available to the State for Radiological Emergency Preparedness as provided by New York State law. These

funds, if the State so wishes, could be used to conduct drills and exercises.

Q.65. What factors determine the effectiveness of sheltering?

A. The effectiveness of sheltering depends on the type of structure, air exchange rate and gamma energy of the plume.

Q.66. Are there any other protective actions available in addition to evacuation and sheltering?

A. No other methods are available for whole-body radiation exposure protection. Other methods are available for such things as thyroid protection.

Q.67. Do special circumstances exist in the case of precipitation resulting in the "scavenge" of radioiodines and radio particulates resulting in very different conditions than would pertain to a case involving only dry deposition?

A. Yes, precipitation scavenging will result in increased surface deposition of radio nuclides and decreased down wind radionuclide concentrations as opposed to dry deposition only.

Q.68. What effect will inversion conditions have on the dispersion of radioactive material?

A. Inversion conditions will decrease dispersion of airborne radioactive materials. Dispersion estimates for atmospheric conditions including inversions are included in the dose projection capability.

Q.69. What effect will snow and icing have upon the ability of emergency response organizations and the general public to effectuate evacuation as a protective action?

A. Snow and icing conditions would increase times of response of emergency organizations and evacuations. The increased times are reflected in evacuation time studies.

3.7 The problems of evacuating children from threatened areas have not been adequately addressed in the present emergency plans.

Q.70. Are there buses available to carry out evacuation of school children and the general population?

A. The plan does not provide specific information as to the number of buses available at each servicing bus company. The plan indicates "Bus service will be provided for all transit dependents during evacuation." Although information regarding the identification and location of each school, enrollment size, number of buses required and the name of the servicing bus company is provided in the plan (all County RERPs, Appendix A. and Procedure 4.)

Q.71. What is the status of agreements committing the private bus operators to provide bus service during an evacuation?

A. To date, the State of New York has not provided FEMA with essential information regarding evacuation of the Plume Exposure EPZ by public conveyance. FEMA needs the following information regarding buses before we can determine the adequacy of bus service.



a. Written agreements for bus service to evacuate the Plume Exposure EPZ, between each bus company and the counties.

b. The number of vehicles available from each bus company listed by garage.

c. The number of bus drivers that would be available by each bus company, by garage to perform the driving requirements.

d. Which bus companies would run which routes.

During the March 3, 1982 exercise, the counties demonstrated a capability to evacuate segments of the population utilizing buses.

Q.72. Are there enough school buses available to effect a timely evacuation of all school children? Will any school children have to wait for a "second run" in order to be evacuated?

A. The County annexes, Procedure 5, Table 2 indicate the student enrollment of the schools located in the plume exposure pathway EPZ to be evacuated and the number of evacuation buses to be used for each school. However, it is not known how many buses are available in each bus garage at any given time. Also, the passenger capacities of the buses are not indicated in the plan.

The County annexes, Procedure 5, Table 1 indicates that six school children will have to wait for the second run in order to be evacuated. In Orange County 21 buses will be needed for the second run of students at Monroe Woodbury Central School H.S. In Westchester County 3 buses will be needed for the second run at BOCES, Yorktown Heights Center, 1 at the Wiltwyck School, 10 at the Briarcliff H.S., 26 at Yorktown H.S. and 26 at Ossining H.S. 132 schools will be completely evacuated during the first run of buses.

Q.73. What provisions have been made in the plan for the incremental evacuation of the general population, i.e. "public transportation dependent population" schools and other facilities?

A. The plan provides for the evacuation of school children during the first wave for the majority of schools when school is in session. See answer to question 72. The remaining schools and the general population will be evacuated during the second wave. The number of buses assigned for each of the above groups of people is stated in each County RESP, Procedure 5, Table 1.

The evacuation of special facilities is addressed in response to question 85, below.

Q.74. Are school reception centers and congregate care centers equipped with emergency supplies? If not, what provisions have been made to assure the prompt acquisition of such supplies?

A. Generally, reception centers and congregate care centers have sufficient emergency supplies for a few days. In the event of an accident resupply of these facilities outside the 10 mile plume exposure pathway EPZ would be almost routine.

The American Red Cross reviewed all congregate care sites listed in the plan for Indian Point prior to the exercise to determine their suitability for sheltering and feeding the number of people specified in the plan. Red Cross has their own supply of beds and blankets stored in the local chapters throughout the counties and have mobile kitchens and

vans and can purchase food locally or acquire food supplies from the Department of Agriculture.

- 4.1 The plume exposure pathway EPZ should be expanded from its present 10-mile radius in order to meet local emergency response needs and capabilities.

Q.75. What plans exist for the protection of the health and safety of the public beyond the plume exposure pathway EPZ?

A. The plan addressed the protective measures to be used for the ingestion exposure pathway (50 mile radius) including the methods for protecting the public from the consumption of food and water which are contaminated by the radionuclide released in an accident. It was concluded in the NRC/EPA Task Force Report on Emergency Planning (NUREG-0396 EPA 520/1-78-016) that it would be unlikely that any protective actions for the plume exposure pathway would be required beyond the plume exposure pathway EPZ (10 mile radius). See NUREG-0654, pg. 12. On this basis, the plan was not required to contain provisions for the protection of the public other than from the consumption of contaminated food and water. (Note: For ingestion pathway protective actions see State site specific Plan Part I Section III.b and Part III Section I 7.2)

Q.76. Has the topography of the area surrounding Indian Point been taken into account in the planning of protective measures? How was this accomplished?

A. The protective measures are likely to be sheltering or evacuation. The topography has been taken into account in evacuation time studies.

4.2 The following specific, feasible off-site procedures should be taken to protect the public:

- a) Potassium iodide should be provided in an appropriate form for all residents in the EPZ
- b) Adequate sheltering capability should be provided for all residents in the EPZ.
- c) License conditions should prohibit power operation of Units 2 and 3 when the roadway network becomes degraded because of adverse weather conditions.
- d) The roadway network should be upgraded to permit successful evacuation of all residents in the EPZ before the plume arrival time.

Q.77. What is the present status of the Food and Drug Administration's review of potassium iodide?

A. The draft FDA position is to consider use of KI at a projected thyroid dose of 10-20 Rem. The final FDA position is due in the near future.

Q.78. What is the present policy of the State of New York on the use and distribution of potassium iodide to the general public and to emergency workers?

A. New York State in its plan does not currently intend to use potassium iodide for emergency workers or the general public.

Q.79. In order to provide adequate sheltering for the general population are any special facilities or structures necessary?

A. Recommendation of NRC/EPA Task Force (NUREG-0396) is that no specific fallout shelters be constructed.

Q.80. What makes high schools appropriate for use as reception centers?

A. Schools, and particularly high schools, have historically been utilized as reception centers. They have mass cooking facilities, sufficient sanitation facilities and sheltering space.

Q.81. Are there sufficient structures to shelter the general population residing within the ten-mile plume exposure pathway EPZ?

A. Yes. The plan states that the preponderance of general sheltering will take place in residences and business. However, public shelters will also be available.

Q.82. What provisions exist for sheltering individuals that may be traveling in vehicles, both personal automobiles and public carriers?

A. The plan does not have specific references to sheltering of special population groups. All sheltering questions are covered by general population sheltering portion of the plan.

Q.83. What studies were relied on in the drafting of NUREG-0654 to determine that sheltering would be an adequate protective action in the event of major releases of radiation?

A. NUREG-0654 lists several reports which may be considered in determining protection afforded by shelters. See footnotes on page 64 of NUREG-0654.

Q.84. Does the present road system in any of the four counties surrounding Indian Point provide such an obstacle that it precludes evacuation as a protective measure?

A. FEMA, based on the findings of the four evacuation time studies cited, believes that the answer is no.

4.3 There are no feasible offsite emergency procedures which can adequately protect the public.

Q.85. Have provisions been made to assist in the evacuation of individuals in special facilities?

A. The Plan addresses the evacuation of individuals from special facilities in the Special Facilities Procedures of each County Annex to the Plan. The procedure describes initial notification to these facilities to deal with incidents with no off-site consequences as well as incidents with potential off-site consequences. It describes the evacuation steps for each type of facility. The procedures in table form, provides the following data: Map number on which the facility can be found, ERPA number, number of patients, description of facility owned vehicles, description of vehicle type and quantity needed for

augmentation. In addition, the procedures includes a telephone listing of each facility.

Q.86. What medical facilities are available to deal with individuals that may become contaminated? What services are available to transport these individuals to these facilities?

A. The State plan in accordance with planning standards L-1 & L-3, states that information on hospitals will be supplied. To date this information has not been received. The county annexes list available medical facilities and transportation resources for handling injured contaminated personnel.

Q.87. Are ambulances available to assist in the event of a radiological incident at Indian Point? Are the drivers and crews trained? Do agreements exist covering the provision of these services?

A. The ambulance plans are contained in the Ambulance and Medical Services section of each of the four county annexes to the State Plan. However, the availability of vehicles from each ambulance service is not specified. The plan calls for training all emergency workers, including ambulance drivers. However, the State has not provided us with information on the current status of this training.

Q.88. What procedures are outlined in the plan (or exist otherwise) to protect the potable water supplies of New York City and the communities surrounding Indian Point? (NOTE: NYC depends on reservoirs



and some of the surrounding communities have neighborhoods that rely on wells).

A. The plan states that protective actions will be ordered when projected dose for ingestion of water sources equals or exceeds appropriate PAGs. Protective actions range from advice to reduce population daily intake to prohibition of water supply use.

4.4 The emergency plans should be upgraded by taking account of special groups with special needs in emergencies. In particular, provision must be made for evacuating persons who are dependent upon others for their mobility.

Q.89. Have provisions been made to assist in the evacuation of individuals in special facilities?

A. The plan addresses the evacuation of individuals from special facilities in the Special Facilities Procedures of each County Annex to the Plan. The procedure describes initial notification to these facilities to deal with incidents with no off-site consequences as well as incidents with potential off-site consequences. It describes the evacuation steps for each type of facility. The procedures in table form, provides the following data: Map number on which the facility can be found, ERPA number, number of patients, description of facility owned vehicles, description of vehicle type and quantity needed for augmentation. In addition, the procedures includes a telephone listing of each facility.

Q.90. If patients located in hospitals are unable to be transported during an evacuation what other protective actions are available, what provisions have been made in the plan to insure that such protective actions are implemented?

A. If evacuation is not possible, sheltering is available as a protective action.

Q.91. What provisions exist for implementing protective actions for special facilities located beyond the ten-mile EPZ?

A. NUREG-0654 does not require implementation of protective action for special facilities beyond the ten-mile plume exposure pathway EPZ.

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.92. Please describe the status of the prompt notification system surrounding Indian Point. Please describe the results of any tests of the system conducted or observed by FEMA. Please detail the status of FEMA's review of the placement of the system and the proposed acceptance testing.

A. Installation of the siren system was completed on January 31, 1982. The entire siren system was activated as part of the exercise on March 3, 1982. A significant number of the sirens failed to function properly during the exercise. The placement of the siren system as part

of the overall design analysis is currently under review. Acceptance testing of the siren system has not been conducted nor has a date been scheduled as yet.

Q.93. Has FEMA conducted a review of siren placement around Indian Point? What was the result of that review? Are the number of sirens sufficient to alert the general public?

A. The siren system placement at Indian Point is currently under review. We are not able to make a judgement at this time.

Q.94. Has FEMA conducted acceptance testing of the siren system surrounding Indian Point. Are the sirens of sufficient decibel level to alert individuals inside structures?

A. No; FEMA has not made a preliminary determination of adequacy of the siren system design and layout pending receipt of additional information. Acceptance testing involves a full scale operational test of the entire alert and notification system as well as sampling of public response. It includes the mailing to and receipt from the public in the 10-mile plume exposure pathway emergency planning zone of an approved questionnaire and subsequent evaluation. The types of tests are described below:

1. growl test - In this type of test, the siren is sounded for so short a time that it never produces significant sound output, yet long enough so that it can be determined that it is working. Its purpose is to test the electromechanical functions at the individual siren site. The suggested testing frequency is quarterly and when

preventive maintenance is performed. 2. silent test - In this test, the controls are activated at the control center and its purpose is to test the tone encoder at the control transmitter and the receiver decoder at each siren location. The suggested testing frequency is every two weeks. 3. complete cycle test - In this test, the entire system is activated from the control center and the system is allowed to full cycle. Its purpose is to test all system components. The suggested testing frequency is at least annually and as required for formal exercises.

FEMA is to receive an annual statement from the State that silent and growl tests have been performed. In addition, FEMA is to observe or receive a statement of the annual statistical sample of population in the plume exposure pathway EPZ.

Q.95. Is there a backup system if the siren system did not fully activate?

A. Provision for a backup system is not discussed in the plan but a limited capability was demonstrated during the exercise. See Post Exercise Assessment. A verification system for the sounding of the sirens does not exist.

Q.96. What provision is made for notification if the siren system fails?

A. The plans do not provide for alternative means of notification of the general public. (See Q.95.) During the exercise a limited capability for route alerting was demonstrated in some counties.

Q.97. Does the plan include a separate system for notification of transient populations in the plume exposure pathway EPZ? If so, have these provisions been implemented?

A. The plan is predicated on the assumption that transients would hear the sirens or other alerting systems. However, signs or other measures to disseminate information to the transient population were not in place at the time of the exercise.

Q.98. Is the content of the Emergency Broadcast System (EBS) messages sufficient to assure proper notification?

A. As observed during the exercise the Emergency Broadcast System (EBS) messages were sufficient to assure proper notification.

Q.99. Does the prompt notification system provide adequate notice to non-English speaking residents of the plume exposure pathway EPZ?

A. Currently the brochure is only printed in English and EBS messages are only broadcast in English.

Q.100. Has a distribution of materials as required by Appendix E to 10 C.F.R. Part 50, Section IV. D.2 been made? If yes, when and how was said distribution accomplished.

A. Mailout of a public information brochure to 100,000 residences and businesses was made between February 15 and February 23, 1982. Utility customer mailing lists were used. Requests for approximately 800 more brochures were received and filled. The brochure contains the necessary information. It appears that the distribution of the brochure was good, including the identification of residents Emergency Response Planning Areas (ERPA). However, based on interviews conducted during the March 3, 1982 exercise, it became apparent that not all individuals were aware of the ERPA in which they reside.

Q.101. Is FEMA aware of the dissemination of any special public information pamphlets for blind, learning-impaired and non-English speaking individuals?

A. No special brochures have been disseminated however, the state, consistent with NUREG-0654, provided for notification (see Answer to Question 15).

Q.102. Does the prompt notification system make special provision for individuals with learning disabilities, deaf and hearing impaired handicapped and other individuals residing within the plume exposure pathway EPZ with special needs?

A. The public education brochure contains a mail back tear-out card which, according to the instructions of the brochure, should be completed and sent in by or for people with special needs, such as the deaf. The cards are to be mailed to the Four County Nuclear Safety

Committee in order that special provisions can be made on a case by case basis.

Q.103. Does the prompt notification system make special provision for "latch-key" children residing within the plume EPZ?

A. The public education brochure explains that people should make sure their families are fully prepared for any type of emergency. Based on family discussions, children alone at home should be trained for emergency response. Finally, cards can be sent in to ensure the children are accommodated.



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PROFESSIONAL QUALIFICATIONS

Education:

Bachelor of Science in Chemistry, Washington College,  
Chestertown, Md. 1956.

Master of Science in Inorganic Chemistry, Pennsylvania State  
University, University Park, PA, 1958

Graduate Assistant in Chemistry, Pennsylvania State  
University, University Park, PA 1958-61

Professional Positions: 1961-1966

Assistant Professor of Chemistry at Idaho State University,  
Pocatello, ID. Responsibilities included teaching courses in  
freshman chemistry, quantitative analysis, instrumental  
analysis, advanced inorganic chemistry and laboratory radio  
chemistry.

8/1966 - 10/73

Employed at the Idaho National Engineering Laboratory in Idaho  
Falls, ID (then called the National Reactor Testing Station).  
The site is government owned and administered by the  
Department of Energy (previously the Atomic Energy Commission  
and the Energy Research and Development Agency). I was  
employed by one of the operating contractors, initially Idaho  
Nuclear Corp. followed by Allied Chemical Corp. My position  
was a technical one in the research and development area of  
fission product behavior and properties.

10/73 - 6/74

Employed as research scientist by Nuclear Environmental  
Services division of SAI, Inc., Idaho Falls, ID.  
Responsibilities included contact support on performance  
gaseous radwaste processing equipment in a BWR and analysis of  
sources of implant radiation exposure to workers.

6/74 - 12/78

Employed as scientific and engineering supervisor by Allied  
Chemical Corporation at the Idaho National Engineering  
Laboratory. Responsibilities included supervision of a research  
laboratory involved with analysis of fission product levels in  
irradiated nuclear fuel specimens and analysis of the fission  
product content of samples of the world's 1st known natural fission  
reactor and the supervision of an analysis laboratory for environ-  
mental samples. Conducted contract research in support of NRC.

12/78 - present

Employed as scientist by Allied Chemical Corp. and Exxon Nuclear Idaho Co. (after 7/03/79) at the Idaho National Engineering Laboratory. Responsibilities include research and development contract support to NRC and FEMA.

Attended FEMA orientation training course on Radiological Emergency Preparedness Planning for DOE Contract Personnel.

Experience:

Proved existence of previously unrecognized airborne radioiodine species to be hypoiodous acid.

Developed sampling device to differentiate various chemical forms of airborne radioiodine.

Developed Inorganic Adsorbent to retain airborne radioiodine.

Measured fission product behavior in simulated loss of coolant accident.

Made highly accurate and precise measurement of natural abundance of krypton in the atmosphere.

Measured gaseous fission products in effluents and process streams in 5 BWR's stations.

Performed effluent and environmental measurements to assess iodine-grass-cow-milk dose pathway at BWR's.

Made effluent and environmental measurements of radioiodine at a pharmaceutical plant to assess environmental impact.

Analyzed fuel specimens to determine accurately the fission yields in the fast flux region of the neutron spectrum.

Analyzed fuel specimens to establish breeding or conversion ratio in Th-U fuels from the light water breeder program.

Developed a sampling device of airborne  $^{14}\text{C}$  and  $^3\text{H}$  in nuclear plant effluents and process streams.

Participated in environmental program for iodine-milk dose pathway using radioxenon to measure dispersion empirically at BWR site.

Directed gaseous portion of a program to measure movement of radionuclides through process equipment in PWR's so that the predictive models can be evaluated.

Responsible for technical evaluation of commercial BWR off-gas systems.

Evaluated applicability of off-site, real-time instrumentation to determine the magnitude of unmonitored releases in accident situations.

Evaluated soil to vegetation transfer of stable cesium and strontium.

Reviewed current state of knowledge on scavenging of the environment airborne radioiodine by rain or snow.

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of  $^{131}\text{I}$  as Hypiodous Acid," Health Physics 40, p 91-94, 1981



PHILIP H. McINTIRE

PROFESSIONAL QUALIFICATIONS

Philip H. McIntire is employed at FEMA, Region II, 26 Federal Plaza, New York, New York. Mr. McIntire is currently serving as the Acting Chief of the Natural and Technological Hazards Division of the Region II Office of the Federal Emergency Management Agency.

Mr. McIntire holds a B.A. Degree with a major in political science from Bowdoin College in Brunswick, Me. and an M.B.A. Degree from Baruch College with a major in human resource management.

The witness began his Federal service in 1966 as a management intern in the Office of Emergency Preparedness, a predecessor agency of FEMA. After a year of rotational assignments he was assigned to the office which administered the President's Disaster Relief Program. Soon afterwards, OEP created a disaster preparedness branch and Mr. McIntire was assigned to it. This was the first effort by the Federal Government to institutionalize a natural disaster preparedness function.

During the next few years, the witness was involved with several major disaster preparedness projects including serving as a principal author of "Disaster Preparedness: A Report to Congress" in 1971 and a major hurricane preparedness conference in Miami in 1972.

Mr. McIntire also served as a special assistant to the Director of the agency for the NATA Committee on the Challenges of Modern Society. The witness planned and participated in meetings of international disaster experts in Brussels, Rome, Venice and San Francisco. The head of the American delegation to the NATO committee was then Counselor to the President and now U.S. Senator Daniel Patrick Moynihan.

In 1972, Mr. McIntire transferred to the newly created Regional Office of OEP in New York. His first assignment in Region II was to direct the Federal effort to temporarily house nearly 4,000 families who were forced from their homes by the floods generated by Tropical Storm Agnes.

During the 1970's, the witness held key management positions in Federal responses to nearly 15 Presidentially declared disasters and emergencies including the Xenia, Ohio tornado of 1974 and hurricanes Eloise in 1975, and David and Fredrick of 1979, all in Puerto Rico.

In 1974, Mr. McIntire was named Assistant Regional Director for Preparedness. In this position, the witness managed \$250,000 grants to each jurisdiction in Region II (New Jersey, New York, Puerto Rico and the Virgin Islands) to develop a State plan and preparedness capability to respond to disasters. Subsequently, he managed \$25,000 per year grants to each jurisdiction to maintain the plans and improve their

preparedness posture. During the period 1974-1979, Mr. McIntire served as the Federal Disaster Assistance Administration's representative on the interagency committee that preceded the current Regional Assistance Committee. In this regard, the witness was involved in the first efforts by the Federal Government in radiological emergency planning in the States of New York and New Jersey. With the formation of the Federal Emergency Management Agency in July of 1979, Mr. McIntire held a series of Acting Division Directors positions, including that of the old Plans and Preparedness Division when FEMA held its first REP exercise at Salem in April of 1981.

With the realignment of the Regional Office in November 1981, Mr. McIntire was named Acting Chief of the Natural and Technological Hazards Division. Since that time, he has directed the Regional Office's REP activities, including the plan review and exercises for the Ginna, Indian Point and Oyster Creek nuclear generating facilities.



IHOR W. HUSAR  
PROFESSIONAL QUALIFICATIONS

Ihor W. Husar is employed at FEMA, Region II, New York. He currently is Program Manager for Radiological Emergency Preparedness, Natural and Technological Hazards Division, Region II, Federal Emergency Management Agency.

Mr. Husar holds a B.A. Degree in Secondary Education with a major in history from Rider College, Lawrenceville, New Jersey.

The witness began to acquire skills in planning during his nearly four years on active duty while serving in the U.S. Army in various officer assignments in military intelligence between 1969 and 1972. He began his Federal service in May, 1972 as a specialist in security administration for Naval Underwater Systems Center, a U.S. Navy research and development activity. The witness continued to advance in this career field after transferring to the Defense Logistics Agency.

In April, 1979, the witness transferred to Defense Civil Preparedness Agency (DCPA) Field Office in New York City where he became a field representative responsible for civil defense planning and preparedness programs in the State of New York. Among his responsibilities, he reviewed and monitored the development of crisis relocation plans and radiological defense plans related to nuclear attack threats.

With the formation of the Federal Emergency Management Agency in July, 1979, Mr. Husar continued to function in civil preparedness programs in the newly created Plans and Preparedness Division. In February, 1980, the witness was assigned to the radiological emergency preparedness program for commercial nuclear power plants (States of New Jersey and New York). The following month, Mr. Husar was designated the Radiological Emergency Preparedness (REP) program manager for the New York Region.

In his capacity as REP program manager, Mr. Husar has provided assistance to the States of New Jersey and New York in their development of radiological emergency preparedness plans for the commercial nuclear power plants in their states. He also served as alternate to the Chairman, Regional Assistance Committee (RAC).

The RAC (formerly the Regional Advisory Committee) exists in each of the ten Standard Federal Regions and is chaired by a FEMA Regional official. The RAC has members from the Nuclear Regulatory Commission (NRC), Department of Health and Human Services (DHHS), Department of Energy (DOE), Department of Transportation (DOT), Environmental Protection Agency (EPA), and the Department of Agriculture (USDA). The basic functions of the RAC are to assist State and local government officials in preparing and revising radiological emergency plans and improving preparedness capabilities of State and local governments for dealing with accidents and emergencies at nuclear power facilities. The RAC also observes and evaluates exercises and identifies deficiencies in the planning and preparedness effort.

In May 1980, Mr. Husar was appointed as RAC Chairman by the Regional Director and directed the Region II RAC in the duties outlined above for the five operating reactor sites in New Jersey and New York (Oyster Creek, Salem, Nine-Mile Point/Fitzpatrick, Ginna and Indian Point). During the period of July to October 1981, the witness served as Acting Chief, Plans and Preparedness Division. Although he relinquished the function of RAC Chairman during this period due to the demand of the managerial position, he maintained supervision of the REP program. Upon the realignment of the Regional Office in November 1981, the witness resumed direct responsibility for the REP program in the newly created Natural and Technological Hazards Division. Overall, Mr. Husar possesses over six years planning experience, more than two years of which has been specifically devoted to the REP program.



# Federal Emergency Management Agency

Region II

26 Federal Plaza

New York, New York 10278

September 29, 1981

Mr. William C. Hennessy, Chairman  
Disaster Preparedness Commission  
State of New York  
Public Security Building  
State Campus  
Albany, New York 12226

Dear Mr. Hennessy:

Attached to this letter, please find the Post-Exercise Assessment for your September 15, 1981 Nine-Mile Point Exercise, and the Regional Assistance Committee's (RAC) review comments for the Radiological Emergency Preparedness (REP) Plan for Nine-Mile Point.

It should be noted that the RAC comments were made prior to the September 15th exercise. Therefore, many comments have been addressed during the exercise and the REP Plan should be altered accordingly. Concurrently, new deficiencies were apparent or more pronounced during the exercise and will require careful review and correction by New York State.

Although the REP Plan has been improved since the submission of the draft document this year, and comments and deficiencies listed in our letters to your office dated April 6, 1981 and May 1, 1981 have been addressed, it is still the determination of the RAC through their review that a number of criteria are still inadequate according to FEMA REP-1/NUREG-0654.

In summary, deficiencies in the plan fall in the following areas:

(a) Assignment of Responsibility

The State and Oswego County Plans still do not reflect the latest legislation on authorities. It is our understanding that your office is presently making these changes. It was also noted that during the exercise assignment of responsibility was successfully demonstrated at the State and county level.

(b) Training

Within the Plan, there are several instances where it is evident that personnel require extensive training. Yet, no time commitments for training are indicated. A specific deadline for completion of initial training should be included in each plan. A deadline should also be indicated for acquisition of monitoring instrumentation and communications equipment where these are not yet in place. The exercise demonstrated that training must be enhanced at the local level. This was supported by a number of observations by Federal observers.

Mr. William C. Hennessy  
September 29, 1981

(c) Accident Assessment

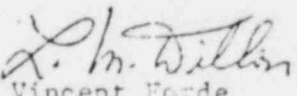
NRC and EPA believe more detailed information is required in this section to assure the State and county's ability to complete an accident assessment. Observations made during the exercise support the need for clarification in the accident assessment portions of the plan. There was almost no field monitoring capability demonstrated. In cases where there was, the lack of sufficient training was evident.

- (d) The format of the State and County Plan has been improved over that of previous submissions. However, under emergency conditions, it will be difficult to implement because of its bulk and complex referencing.

The detailed comments that the RAC has provided, coupled with a meeting you may request to discuss these comments, should serve to identify the revisions necessary in the REP Plan.

The Post-Exercise assessment report is furnished for your information, guidance and appropriate action. Your attention is invited to Page 5, Remedial Action Procedures. Please provide this office, within twenty calendar days of this letter, your schedule of remedial actions for correcting deficiencies on the formal recommendations contained in the report and the deficiencies listed by the RAC on the REP Plan itself.

Sincerely,

*for*   
Vincent Forde  
Acting Regional Director

Enclosures

RAC COMMENTS ON THE STATE OF NEW YORK  
EMERGENCY RESPONSE PLAN  
FOR NINE MILE POINT NUCLEAR POWER PLANT  
(STATE LEVEL PLANS)

DATE

LEGEND: A - ADEQUATE  
N - INADEQUATE

ELEMENT

RATING

A.

Assignment of Responsibility

A.1.a.

N

It is clear in the Oswego County Plan that the lead role for response activities will belong to the County Director of Emergency Preparedness. In Section III, Page III-5 of the county plan, this is specifically highlighted with no indication of primary support supplied by the State. On Page III-9, the New York State Department of Health is given a Secondary Support position for Public Health.

The chart on Page II-18 clearly labels lead roles for various county departments and primary and secondary roles for State agencies. In Section I, Page 1-14 of the county plan, the Concept of Operations never relinquishes the lead role, but expands the support necessary for the county to operate.

In our review of the State Plan, clarity of the State's responsibilities is needed if the county plan is acceptable to all jurisdictions. In Part I, Section III, Page III-2, the local Governments section should be changed from "primary responsibility" to overall "lead role" to agree with the county plan. In turn, the State Government section should be changed from "lead agency" to "lead State agency" to avoid a contradiction. Also, on Page III-3 an explanation of "where necessary" would be useful in explaining when the State takes the lead role for response activity as indicated in the amended law. Page III-6 should be changed where it refers to the Department of Health as the lead agency to indicate it being the lead State agency, or to indicate at what point in time it will be come the lead role agency. This problem is common throughout the State Plan.

ELEMENTRATING

(Con't)

A.1.a.

N

A general review of both the State Agency Response Activity Assignment Chart and the Oswego County Radiological Emergency Response Plan Chart demonstrates contradictions in basic responsibilities. The State chart generally indicates that State agencies have primary responsibilities for response activities. In the case of the county chart, the State is given only primary and secondary support roles. We understand that lead responsibility will shift away from the county after a State declaration of emergency, but this is not reflected in either diagram.

In general, our review indicates that a clear statement must be made in both the county and State plan that clearly defines the change in responsibilities once a State declaration of disaster is made. This is clear in the amendment to New York State Executive Article 2b dated July 9, where section twenty-eighth amended in subdivision 2. The amendment allows the governor or designee to direct the county chief executive. Unfortunately, in the two charts referenced to earlier and in other written sections of both plans, this is not clearly stated. Finally, a chart should be developed which will compliment Chart III-62 in the State plan and establish lines of authority during radiological emergency during a declaration of a "State of Disaster Emergency." The chart on III-61 does not clearly do this.

A.2.b.

A

(Within the confines of the State Plan.)

A.1.c.

N

The diagrams should be adjusted to reflect comments made for A.1.a.

A.1.d.

N

What system will be utilized to assure that phone numbers will be distributed to all responsible



ELEMENTRATING

(Con't)

A.1.d.

N

personnel at State, local, and Federal levels?

A.2.a.

N

Memorandums of understanding are not finalized. Once received they should be included within the State plan in these entities.

The uncertainty in head jurisdictions outlined in element A.1.a. once clarified will improve this section.

Part I, Section II, II 5 the Department of Agriculture (USDA) suggest the following statement to be included to establish USDA's role:

"The United States Department of Agriculture has established in every State and county, USDA Emergency Boards to coordinate USDA State or county disaster assistance efforts. All of the USDA agencies having major emergency responsibilities are presented on these boards. USDA emergency personnel are to establish continuing liaison with State and/or county agricultural agencies to insure coordination of assistance activities and damage assessments."

The USDA Regional radiological Representative (RRR) for the State of New York is:

George J. Puchta  
New York, New York  
(212/264-8980)

The acting USDA Emergency Board (SEB) representative for the State of New York is:

Mr. Duane Dann  
Syracuse, New York  
(315/423-5176)



ELEMENTRATING

(Con't)

A.2.a.

N

A conflict specifying functions and responsibility for transportation exist between the three following section:

Part I, Section III, Page III-25 - Chart assigns State Transportation responsibility to ODP

Part II, Section I, NMP/JAF - Page 15 - Figure 6 assigns State Transportation responsibility to Dept. of Transportation

Part II, Section I, NMP/JAF - Page 16 - designates County Responsibility to County Planning Board.

A.2.b.

A

A.3.

N

See comments for A.2.a.

Part III, Section II, 1.

The written agreements between support organizations do not include the use of USDA resources. If USDA assistance is requested on the State level, the USDA State Emergency Board (SEB) should be the focal point for the use of USDA services. The USDA State Emergency Board (SEB) representative for the State of New York is:

Mr. Duane Dann  
Syracuse, New York  
(315/423-5176)

The USDA Regional Radiological Representative, George J. Puchta in New York, New York (212/264-1390) will determine whether a written agreement between the State and USDA is needed to determine the Department's role.

A.4.

A

<u>ELEMENT</u>	<u>RATING</u>	
C.		<u>Emergency Response Support &amp; Resources</u>
C.1.a.	A	
C.1.b.	A	
C.1.c.	N	<p>Back-up radio system available during working hours only. Part III S1 (B-2)</p> <p>The State plan depends heavily on Federal assistance. However, it does not mention (1) facilities/resources specific for Federal use. (2) where responding Federal agencies will be located, or (3) the information to the appropriate decision makers.</p> <p>State: a. A frequency-relationship chart indicating interagency radio communication (hand-held and base stations) has not been included in the plan. Numerical frequencies need not be listed (for security reasons); a code may be used instead.</p> <p>b. The listing of nuclear generating stations in the State, which is on page B-1, does not include Shoreham which is expected to be complete in May 1982.</p> <p>c. Procedures B &amp; H are inappropriate references for this element. Part III Section I and Procedure D (D-3, D-8, and attachment are the proper references.</p>
C.2.a.	A	
C.3	N	<p>The information concerning the State lab equipment and staff capabilities was found in page 6 of Part III Section II, not Part I as referenced in the plan text on page H-8.</p>

ELEMENTRATING

(Con't)  
C.3.

N

On page H-8, the limitations of the laboratory analysis of sample media for PAG decision-making in the inhalation pathway are discussed.

"Data from laboratory analysis of air, soil, water, milk and vegetation samples collected in the area surrounding the plant are important for defining the magnitude and extent of contamination resulting from the release. These data are normally delayed from several hours to a few days and this cannot be used in the decision process in the preliminary stages where the dose from inhalation and whole body exposure determines the protective actions utilized."

However, this delay time is unacceptable for the ingestion pathway. Not all ingestion pathway PACs are provided for in the automatic ingestion PAG responses for specific emergency classifications discussed elsewhere in the plan. Attention should be given to the information needed to prevent accidental general population ingestion of contaminated water and foodstuffs.

The ORP guidance indicates that when EPA laboratories are to be called upon, "space (with power supply) for laboratory equipment should be provided at least 5 to 20 miles from the nuclear site to avoid background or personnel exposure problems." Other resources and support facilities may be discussed in the MOI being developed. Refer to comment for element C.1.c.

C.4.

N

Letters of agreement with hospitals which are likely to handle accident victims coming from Nine Mile Point (or any other N.Y. nuclear facility) were missing. The State Health Department defers its responsibility to "Emergency Medical Services of Oswego County."

ELEMENTRATING

(Con't)

C.4.

N

(This may eventually cover Oswego County) but not Onondaga County.

Agreements with the Red Cross and other utilities are mentioned but the prime emphasis again is on DED assistance which should have been covered under element C.1. Table 4 of Procedure 5 of the Oswego Plan is a listing of Bus routes. Part III, Section II, Page 1 of the State plan is a list of MOU's. However, none are mentioned for the utilities which the State indicates of Page H-5, Part III, Section I, have signed agreements. These should also be included on this list.

Part III, Section II, Page 1 Letter of Agreement with 3rd & 9th coast Guard District are not present

D.

Emergency Classification System

D.3.

A

D.4.

A

E.

Notification Methods and Procedures

E.1.

N

Part III, Section I, Procedure B

The New York plan does have established procedures for notification of emergency personnel. However, the plan does not provide for the proper notification of the USDA organizations involved. We suggest the following response, "The New York Department of Agriculture will notify the USDA Regional Radiological Representative (RRR) George J. Puchta in New York, New York (212/262-1390) by telephone. The RRR will notify USDA's State Emergency Board representative,

ELEMENTRATING

(Con't)

E.1.

N

Mr. Duane Dann, Syracuse, New York (315/423-5176).  
The USDA State and County Emergency Boards will notify  
the affected agricultural industries.

There is no procedure/method for contacting EPA as  
required by the ORP guidance:

"If EPA has a defined role in the State plan, the  
procedures for requesting EPA assistance must be  
stated. These requests may be made through IRAP, the  
EPA Regional Office, or EPA headquarters."

The titles of contact personnel within the agencies  
listed on Pages III-29 to 32 must be specified. Are  
they the same individuals listed by title on page  
NMP-JAF 15, Figure 6? There is no indication as to  
when the Federal agencies are notified for (1)  
information only or (2) response requests.

E.2.

A

E.5.

A

E.6.

N

Cross-reference Part I Section III  
Part II Section I  
Part IV County Plan

Prompt notification system not installed. Oswego  
County Plan does not describe interim notification  
system.

E.7.

N

Cross-reference Part I Section III - 49  
Section III - 53  
Part III Section I (Proc. C. Attach.1)  
Neither Section III - 49 or III - 53 include draft  
messages. No sample of public information pamphlet  
cited in III - 53 provided. Does it exist?

ELEMENTRATING

(Con't)  
E.7.

N

Sample messages in Part III, Section I (Proc. C, Attach. 1) should include name of state, name of county, should state message is not a test, and give rumor control phone numbers.

People who evacuate their home should be told to leave some signal to indicate they have left.

F.

Emergency Communications

F.1.a.

A

F.1.b.

A

F.1.c.

N

Part III, Section 1, Procedure B - Describes the notification procedure. Attachment 13 lists the Coast Guard 3rd District and 9th District and CONRAIL but no telephone numbers are given. Accordingly, it is not clear if the correct Coast Guard offices will be called since there is no written agreement specifying the contact points.

F.1.d.

N

State Plan reference III, Section I, Procedures B address primarily the state - county communications system it does not talk to EOF to State or county communications, or communications with f assessment

F.1.e.

A

F.2.

A

F.3.

N

Part I, Section III, III-7

The New York plan does include instructions for the periodic testing of the entire emergency communications system.

ELEMENTRATING

(Con't)  
F.3.

N

However, USDA organizations are not included in this test. We suggest the plan provide USDA organizations to be alerted in the tests of the emergency communications system. The procedure would begin with the New York State Department of Agriculture notifying the USDA Regional Radiological Representative (RRR) George J. Puchta in New York, New York (212/2641390). The RRR will notify Mr. Duane Dann, Syracuse, New York (313/423-5176).

G.

Public Education and Information

G.1.

N

Cross-reference Part I, Section II 10, 11  
Cross-reference should be II 9-10, not 10-11. Explains public education programs will be implemented but no specific or samples provided.

Cross-reference Part III, Section I, Proc. E.

Procedure E. describes coordinated educational program but no specifics, samples, or schedule provided.

The New York State plan states (Page E.2, Section 3.2) that "the State Department of Agriculture and Markets will assist in the education of farmers and food processors."

We suggest the plan include the following statement regarding USDA personnel. "USDA personnel have emergency information readily available that could be disseminated to farmers and other agribusinesses. for example, USDA County Extension Agents have a radiological information section in their "Disaster handbook for Extension Agents." This information can be distributed to affect farmers and other agribusinesses in the disaster area."



<u>ELEMENT</u>	<u>RATING</u>	
G.2.	N	Cross-reference Part III Section I proc. C&E Part IV County Plan CI-1
		Same comments as G.1. above. Cannot locate C-1 County Planb.
G.3.a.	A	
G.3.b.	A	
G.4.a.	A	
G.4.b.	A	
G.4.c.	A	
G.5.	N	Cross-reference Part III Section I Proc. C (2.2) Part IV County Plan CI-1
		Although state plan explains that news media will be briefed annually on plans, no specific provided to indicate if and when this has been done.
H.		<u>Emergency Facilities and Equipment</u>
H.3.	A	
H.4.	A	
H.7.	N.	<ul style="list-style-type: none"> <li>a. The state has no iodine detection capability.</li> <li>b. A more detailed discussion of the NMP/JAF iodine sample canister is necessary. Indicate usefulness and accuracy for environmental monitoring on-site and off-site.</li> <li>c. Two monitoring team (of two persons each) are insufficient to perform the assigned function: determine edges and centerline of the plume.</li> </ul>

ELEMENTRATING

(Con't)

H.7.

N

- d. Communication field monitoring equipment contained in the "NMP/JAF downwind survey kit" is not specified. Can the state/county communicate with the NFO field teams? Can the field teams from the non-affected NFOs, who will come to the aid of the affected NFOs, communicate with the other field teams and with the Technical Support Center?
- e. Locations of items listed on Part II Section II, page 4 (DCE field survey equipment list) are not noted. Also, is this the total state capability?
- f. Part II Section II and procedure G references do not contain information required by this element.
- g. Specify what additional resources will be available to the personnel in the sampling agencies listed on Attachment 6 in response to a radiological emergency. Specify location and accessibility of these resources. Include a discussion of the training status of such personnel in this adjunct role of emergency workers.

H.10.

A

H.11.

N

The DEC and ODP equipment list is a statewide inventory. Specific locations of inventory should also be provided. Information of maintenance and accessibility of kits is necessary.

Page 14-19 list numerical frequencies of communications equipment. It is unclear if intercommunication can in fact take place because operating frequencies differ. A coded frequency relationship chart would reduce this confusion.

Specify the titles of persons responsible for the maintenance and distribution of the equipment in this reference.

ELEMENTRATING

H.12.

A

I.

Accident Assessment

I.7.

N

This requirement asks what field monitoring capability the State has within the plume exposure EPZ. The references given do not address this. If the State has no capability, the plan should so state and provide information in what field monitoring data the State intends to use for its evaluation at various stages in accident.

State Plan III, I Procedure H (5.2.3.) does address "State Data", and is not very specific as to how this data will be attained.

Two teams of two people each from NMP/JAF are assigned for the off site monitoring. Their information is to be "radioed back to the TSC upon completion of the measurements at each location," although no radios or transportation provisions are indicated. The team designation and composition are insufficient for the assigned duty to properly collect data from all the equipment listed in the NFO "downwind survey kit." The average data collection and relay time, i.e. potential worker exposure time per field monitoring site should be discussed. An SOP detailing the method to be used by the teams to "... determine the centerline and edges of the plume..." this determination, or are data to be relayed to a coordinating point for correlation and interpretation?

I.8.

N

This requirement asks for notification means, field team composition, transportation, communications, monitoring equipment and estimated deployment times.

ELEMENTRATING

(Con't)

I.8.

N

The references do not provide any of this specific information even though H(5.2.3.) indicates the State does have some capability in this area, even if delayed.

The use of Federal response teams is an integral part of the state and county plans; however, there are no specific facilities or resources allocated for Federal use. Assembly points are also indicated.

State: a. Indicate, by title, the person responsible for activating monitoring teams and the source of these teams. It is unclear whether the Emergency Director (or designee) or the NFO activates the teams referred to in the state plan. This is particularly important because the state and county depend on the on NFO for the initial field monitoring data for PAG decision-making.

b. Specify an assembly point for on-site (i.e. NFO) and off-site (i.e. county, state, Federal agencies, and Ginna) monitoring teams. The command and authority of teams composed of personnel from several different levels (i.e., state/local/NFO) is unclear. This should be well-defined.

c. Describe notification of off-duty monitoring teams and arrangements for the distribution of equipment and transportation. Discuss the order of visitation of the off-site monitoring locations and the decision process for site selection. Are the teams familiar with the locations of the fixed stations and auxiliary monitoring sites?

I.9.

N

The state does not have any field measurement capability iodine. If such capability is anticipated, it should be indicated.

<u>ELEMENT</u>	<u>RATING</u>	
I.10.	A	<p>a. A lack of review time prevented proper evaluation of parameters and equations used in the plan. However, they were listed and would appear to cover all contingencies.</p> <p>b. The specific procedure was not listed in the cross-references index, but was presumed to be H. This should be corrected.</p>
I.11.	A	<p>a. The DOE response teams are assigned this responsibility. Will their arrival be within an appropriate time frame to obtain this PAG decision-making data?</p> <p>b. Part I Section III, page III-28 is not an appropriate reference for this element.</p>
J.		<u>Protective Response</u>
J.2.	A	
J.9.	N	<p>The plans are adequate with regard to referencing the appropriate recommended protective action guides. However, it is not clear who will make the decision to implement protective measures, the State or the County. Both State plan (P. III - 41) and the County plan (P. III - 36) contain statements that they will make the decision to implement a particular protective action. It appears that the new legislation still has not cleared up this conflict between State and local jurisdictions. Based on review of these plans it appears that the county currently does not have the resources to make the necessary evaluations. Attachment 15, Procedures 3, List of Agency Resources is blank. What will they do in the interim period before they can get properly trained people and equipment? The State is also heavily dependent on assistance from the utilities and the Federal Government.</p>

<u>ELEMENT</u>	<u>RATING</u>	
J.10.a.	A	
J.10.b.	A	
J.10.c.	A	
J.10.d.	A	
J.10.e.	N	Quantities, storage and means of distribution not specified. NYS Health Department does not recommend the use of thyroid blocking agents for the general public or emergency workers at this time. (P. III-55.) No explanation is given for their decision, particularly, why it is not being considered for institutionalized individuals. The county plan (P. III-26) indicates that radioprotective drugs shall be available for emergency personnel and refers to Appendix C for further information. However, Appendix C has been deleted. The only other reference is a copy of the "Thyro-Block" package insert in the procedure (3, att. 12.) The plan should consider details of (1) projected absorbed radiation doses to the thyroid that would trigger the use of the drug; (2) a specific procedure for estimating or determining these doses; (3) plans for rapid distribution (4) provision for supplies adequate for administration up to 10 days; and (5) plans for the acquisition, stockpiling, inspection, and periodic replacement of drug stocks.
J.10.f.	N	Refer to J.10.e.
J.10.g.	A	
J.10.h.	A	
J.10.i	N	Missing

<u>ELEMENT</u>	<u>RATING</u>	
J.10.j.	A	
J.10.k.	A	
J.10.l.	N	Unable to discern information on NMP/JAF - site plot plan.
J.10.m.	N	<p>a. The chain of command between the state and the county must be clarified for this element to be satisfied.</p> <p>b. Specify to whom the State is recommending protective actions.</p> <p>c. indicate the location of the State Commissioner of Health during this phase of the emergency.</p>
J.11.	N	<p>Reference could not be located for the following parts of this element: (1) Procedures for detecting contamination. (2) Maps for recording survey and monitoring data, etc. (Part III, Section II P. 8 indicates maps showing wells and surface intakes for water aere being prepared.) (3) Lists of facilities which regularly process food products originating in the ingestion pathway, but located elsewhere. Cross references: Part I Section III III-39 thru 49(b) Part III Section I Procedure H-14 (7.2) Part III Section II 2,8.</p> <p>A list of available maps showing farms, food processing plants, milk processing plants, dairies and open reservoirs, etc. are on file and available in the Department of Agriculture and Markets or the Division of Radiological Health. This information satisfies USDA's requirement for element J.11.</p> <p>If the authority for decision-making is, in fact, the DCH and the necessary field data are available, this comment is not relevant. However, at the present time, these authorities and capabilities are not clearly defined.</p>



ELEMENTRATING

(Con't)

J.11.

N

Prior to initiation of ingestion PAGs uncontrolled general public consumption may take place. Have any estimates of this potential dose been incorporated into the projected general public dose for protective action decisions?  
Discuss the provisions that have been made for decontamination of foodstuffs.

J.12.

N

- a. Specify the arrangements for monitoring evacuees (and equipment available) at relocation centers. County monitoring teams (not presently available) will be sent to the relocation centers "if necessary." This is unsatisfactory, as NUREG-0654 states that monitoring of evacuees will be done.
- b. The registration plans appear adequate.
- c. Contamination control procedures and facilities for the relocation centers are not discussed.

K.

Radiological Exposure Control

K.3.a.

N

- a. Part I Section III, page III-56 discusses what is planned for the future, but does not give dates of expected capability nor does it discuss interim procedures.
- b. It is unclear as to present 24-hour capabilities.
- c. Are the instruments listed on pages G-2 & 3 now available? If not, specify (1) interim equipment, (2) target date for acquisition, and (3) equipment location, with 24-hour access.
- d. Have the Radiological Liaisons for each agency been designated? If not, state when they will be.
- e. There is no information concerning the location of the PMCs.
- f. It would appear that each emergency worker will be issued a dosimeter charger. Is this correct? If so, is it really necessary?

<u>ELEMENT</u>	<u>RATING</u>	
(Con't)		
K.3.a.	N	If not, how is dosimeter recharge accomplished? g. State Plan Part III, Section I Procedure G. does not address the program for permanent record devices for state workers.
K.3.b.	N	This element will be satisfied when the post-emergency storage location of records is stated.
K.4.	A	
K.5.a.	N	a. Is 0.1 mr/hr the minimum action level for personnel decontamination? If not specify the minimum action level. b. Action levels for decontamination of equipment, foodstuffs, soil, and other surface material are not stated.
K.5.b.	N	a. It is presumed that the PMCs are the decontamination facilities for emergency personnel. If this is correct, where are they located? If this is not correct then specify (1) functions of PMCs and (2) specific locations and facilities for personnel decontamination. b. Discuss the monitoring equipment to be used to determine the need for and effectiveness of decontamination. It is essential that this equipment detect <u>&lt;0.1 mr/hr with accuracy</u> if this is the decontamination action level. c. Identify the medical facilities "having trained people in personnel decontamination and care" that are to be used in a radiological emergency. Necessary MOUs should be included in the plan. d. If emergency first aid field kits are available indicate the storage locations(s). If not, indicate anticipated availability and future storage locations.

<u>ELEMENT</u>	<u>RATING</u>	
L.		<u>Medical Public Health Support</u>
L.1.	N	The state plan does not get into the details of adequate hospital resources to handle contaminated individuals.
L.3.	N	Part III Section III is not yet available.
L.4.	N	The agreement, with organization like American Red Cross, Emergency Medical Services of Oswego County and various bus companies in the county may supply needed information on transporting victims. The plan should include this specific information when it is available. References to the county plan do site specific county responsibilities which are clearly define.
M.		<u>Recovery and Reentry Planning and Postaccident Operations Planning Standard</u>
M.1.	N	The procedures for reentry are outlined in the plan. For example Part I, Section IV, P.IV-6 states that "a radiation monitoring program for contaminated areas will be established". There is no indication what this program may consist of. NYS Part I, Section IV P IV 1-IV 7 Oswego IV A.1. IV.B VI B.3 IV C. Appendix A is cross-referenced by the county, but this is the evacuation plan.
M.3.	A	
M.4.	N	Cross reference Part I, Section IV, IV-6 (C.4) of the State plan does not establish a method for periodically estimating total population exposure.

<u>ELEMENT</u>	<u>RATING</u>	
N.		<u>Exercise and Drill</u>
N.1.a.	N	State plan does not meet criteria of "exercise shall be conducted as set forth by NRC-FEMA Rules."
N.1.b.	N	No provision for exercise once every six years between 6:00 p.m. and midnight and midnight at 6:00 a.m.
N.2.a.	A	
N.2.d.	N	This criteria will be satisfied when the word "may" on page r-2 bullet #2, line 2 is corrected to "shall" as stated on page 71 of NUREG-0654.
N.3.a.	A	
N.3.b.	A	
N.3.c.	A	
N.3.d	A	
N.3.e.	N	State plan needs narrative summary describing conduct of exercise and drills.
N.3.f.	N	State plan requires more detail on arrangement and advance materials to be provided to official observers.
N.4.	N	Alert procedures for USDA should be included as follows: The Regional Radiological Representative, George J. Puchta in New York, New York (212/264-1390) should be contacted. Either Mr. Puchta or a USDA designated representative will attend the exercise.

<u>ELEMENT</u>	<u>RATING</u>	
N.5.	N	Part III, Section I, Procedure F-5 (4.2,4.3) merely repeats word for word the contents of element N-5 in NUREG-0654 No "means" are established.
O.		<u>Radiological Emergency Response Training</u>
O.1.	A	
O.1.b.	A	
O.4.a.	N	State and local plans and procedures not specific enough. They do not list specific type of training needed.
b.		
d.		
f.		
g.		
h.		
j.		
O.5.	N	State plan does not provide for annual retraining of personnel with emergency responsibility.
P.		<u>Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plan</u>
P.1.	A	
P.2.	A	
P.3.	A	
P.4.	A	
P.5.	A	
P.5.	A	
P.6.	A	

ELEMENTRATING

P.7.

A

P.8.

A

P.10.

A

RAC COMMENTS ON OSWEGO COUNTY  
RADIOLOGICAL EMERGENCY RESPONSE PLAN

LEGEND: A - ADEQUATE  
N - INADEQUATE

ELEMENT RATING

A. Assignment of Responsibility  
(Organization Control)

- A.1.a. N See comments for A-1-a on State Plan.
- A.1.b. N In Section I, page 14, of the County Plan it states that for a General Emergency the immediate exhaustion of county resources is assumed. At this point should it be assumed that the State has the lead role? If so, it should be clearly stated.
- A.1.c. All diagrams should be adjusted to reflect comments made for A.1.a on the State Plan.
- A.1.d. A
- A.1.e. A
- A.2.a. N The uncertainty in lead jurisdiction outlined in element A.1.a. once clarified, will improve this section.
- A.2.b. A
- A.3. N The Chairman of the Legislature must sign off on the letter attached under Appendix I which endorses the County Plan. Agreement requests have been made with nonpublic organization by New York State and should be ineligible in the County Plan. ~~included~~
- A.3. N Section I.A. Authority, (page 1-2) contains the following paragraph which contradicts the county lead responsibilities listed in Section III.C and Table III-1, but concurs with the State Plan:

"Under the authority vested in the Chairman of the Oswego County Legislature, protective action can be instituted by the County without the formal approval of the State Commissioner of Health. This local authority is important in the event of a breakdown in communications between the nuclear facility and State



officials. It is anticipated, however, that the State Commissioner of Health will provide direction to the Oswego County Director of Emergency Preparedness before the mobilization of key local officials is completed. The New York State Commissioner of Health, or his designated representative, will be responsible for overall direction and control." It is necessary to reconcile the primary and secondary authorities of the state and county in both plans under all circumstances.

- b. There are no agreements listed in Section 1.A between the county and Oswego (city) or Fulton and the participating hospitals.
- c. EPA is listed as secondary support in accident assessment, but there are as yet no defined responsibilities or agreements between EPA and Oswego County.
- d. Local interfacing with the county is indicated, but no authorizations or MOUs are listed. These should be included as applicable, or authorities should be cited.
- e. For the 50-mile ingestion pathway, coordination is needed with Jefferson, Lewis, Oneida, Madison, Onondaga, Cayuga, Seneca, Ontario, and Wayne Counties.

A.4. A

C. Emergency Response Support and Resources

- C.1.c. N      The county plan depends heavily on Federal assistance. However, it does not mention (1) facilities/resources specific for Federal use, (2) where responding Federal agencies will be located, or (3) the channels of communication for dissemination of data and assessment information to the appropriate decision makers.

As indicated in the State Plan, numerical frequencies are not necessary. Table E-1 need only indicate by symbol notation (on a flow-chart) the inter- and intra-agency radio (hand-held and base) communication capabilities. Call signs for county, fire, and EMS are not necessary in the public plan, only in the operational listing.

- b. Airports, command posts, and communication resources to be used by Federal support personnel have not been designated.

C.2.a A

C.4. N No letters of agreement with hospitals yet available.

D. Emergency Classification System

D.3. A

D.4. A

E. Notification Methods and Procedures

E.1. N Verification of message (from NFO) is implied in response action by CDEP: called NFO for additional information. However, it appears to occur relatively late in the response actions. Verification should be accomplished prior to any further actions.

E.2. A

E.5. N Cross-reference Part III-22.

Plan states that a new local EBS plan is being developed and will be available in the near future. Until this plan is incorporated into the County Plan, no adequate system can be said to exist.

E.6. N Cross-reference III.C.2, D.2, and Appendix F

Prompt notification system not installed. No interim system described which would alert effected population until prompt notification system installed.

E.7. N Cross-reference III.C.10, III.0.2, and Appendix B

Sample messages in Appendix B should include:

1. Name of state
2. Name of county (counties)
3. Advise to listeners to stay tuned to station(s).

In addition, during site or general emergency, messages should be broadcast more often than hourly.

Also, when a state of emergency has been declared by the county or governor's office, messages should include this fact.



Rumor control phone numbers should be included in all messages.

Rumor control phone numbers should be included in all messages.

A message explaining evacuation plans for school children should be prepared.

People who evacuate their homes should be told to leave some kind of signal to indicate that they have left (e.g. tie a white cloth to door knob).

All messages should begin by stating that the bulletin is an important message and that it is not a test.

F. Emergency Communications

F.1.a. A

F.1.b. A

F.1.c. N See comment on State Plan.

F.1.d. A

F.1.e. A

F.2. A

F.3. A

G. Public Education and Information

G.1. N Cross-reference II.B.6, III.C.10, and Appendix L.

Although a public information program is described at the date of submission of the plan, no materials were available for inclusion. Therefore, no review of the materials is possible.

The following statement should be added to Section II-6:

"The USDA County Extension Agent in Oswego County is the key contact. The agent will notify farmers and other agricultural industries in the event of a nuclear accident."

G.2. (Same as G.1. above)

G.3.a. A

G.4.a. A

G.4.b. A

G.4.c. N Cross-reference III.d.2.d.

The plan does not reflect a full understanding of the purpose of rumor control. Rumor control is primarily designed to provide members of the general public a point of contact to obtain answers to individual questions. Notwithstanding, evaluation of questions coming into rumor control may point up a need for new releases on frequently-asked questions. The plan does not provide information about how the rumor control center will be staffed.

Volume II, Part I, Section 4.0, Alert, does not include responsibility for alerting EBS to standby-status per NUREG-0654, Appendix I, page 1-8.

G.5. A

H. Emergency Facilities and Equipment

H.3. A

H.4. A

- H.7. N
- a. It is unclear as to what equipment is presently available and where it is located. Several citations are listings of equipments, but it is difficult to determine what is available for the county's use. The arrangements for distribution to emergency workers on a 24-hour basis are not sufficiently explained.
  - b. At what future date does the county anticipate having radiologically trained personnel? What is the present maximum strength in this area? What detection equipment will be assigned to the county teams?
  - c. Part II.G and Procedures 13, Section 2.0 are inappropriate references.

State and County: As stated in the ORP guidance:

"Minimum sensitivity requirements of measurement should be specified. Methods for recording and translating data to projected dose should also be prescribed."

- H.11. N a. Procedure 3, Attachment 15, is blank. This is the resource list for the Health and Radiological Officers. The expected availability and locations of equipment should be indicated.
- b. Location(s) of the protective equipment listed is (are) not stated.
- c. Of the OEP equipment listed, what is now available? Resource availability by date and location are not present. Staff responsible for maintenance and accessibility are not given.
- d. The same information discussed in Comments a., b., and c. above is required for consumable supplies, such as plastic bags and rubber gloves.
- e. Arrangements for 24-hour access to these kits by emergency workers must be indicated.

H.12 A

I. Accident Assessment

- 1.7. N (Most of the required information was found in Appendix J, Attachment 14.)
- a: Procedure 3, page 14-4, paragraph 4.2.22.1:
- "Hold the probe of the GM Survey Instrument up to the filter in the sampler and obtain a reading in cpm."
- Specify the radiation types and energies to which the field GMs sensitive and the precautions taken to prevent contamination of probe. If provisions have been made for field replacement of the contaminated probes, this should be stated.
- b. During the 10 minutes that the sampler is running, indicate the activities and location of the team members.
- c. "County personnel trained in radiological monitoring will be allowed to accompany NFO Nuclear Environmental Monitoring Teams."
1. At the present time, such personnel are not available. Specify when they will be trained and the number of such trained personnel.

2. Detail duties of county personnel when accompanying the NFO teams.
3. This quotation conflicts with Attachment 14 in regard to the procedures outlined for monitoring team personnel.

- I.8. N a. Specify anticipated availability of county personnel equipment and present plans to be used in the interim.
- b. Procedure 1, Attachment 8, lists civil defense equipment available for county use. Is this equipment maintained through periodic checks of calibration, working order and batteries? Specify sensitivities and ranges of the equipment. Discuss responsibility for repair and replacement where necessary.
- c. Specify anticipated dates for county radiological field monitors to have hand-held, portable radio units with local government frequencies. Specify interim procedure.
- d. A new transmitting and receiving Fire Base Station is expected to be installed in 1982. What are the interim arrangements?
- e. Reference III d.26 should be corrected to III D.2.b. in the cross-reference index.

J. Protective Response

J.2. A

- J.9. N a. Sections III G-2 and 4 describe the automatic protective actions but do not "establish a capability for implementing."
- b. It is unrealistic to have the deaf, verbally (and otherwise) handicapped, invalid, home-bound elderly, latch-key children, and non-English speaking populace notify the County EOC that they need evacuation assistance during the emergency. It is even probably that this segment of the population may be unaware that an emergency exists. It would be more prudent to ascertain beforehand the residential locations of these individuals. This information has proven invaluable to local police/fire/rescue agencies in other areas in the routine performance of their duties.

Also, see comments for J.a on the State Plan.

- J.10.a.
- J.10.b. A
- J.10.c. A
- J.10.d. A
- J.10.e. N (See comment on State Plan).
- J.10.f. N (See comment on State Plan).
- J.10.g. A
- J.10.h. A
- J.10.i. N Missing.
- J.10.k. A
- J.10.l. N Unable to locate information.
- J.10.m. A
- J.11. A
- J.12. N (See comment on State Plan).

K. Radiological Exposure Control

- K.3.a. N The County Plan (III.E) talks in generalities about dosimeter and exposure control. This, however, is inadequate to satisfy this element. A specific procedure is needed - where           ? are issued, by whom, number available, who keeps dosage records, and how.

The "24-hour-per-day capability to determine the doses received by emergency personnel..." appears to rest in the self-kept emergency worker's exposure card. If that is correct, (1) what provisions or assumptions are made for an emergency worker who loses his card, (2) how frequently are the cards checked by the immediate supervisor (or Radiological Control Officer) if there is no occasion for the worker to leave the area, and (3) will all the emergency workers be properly trained in recording techniques and limitations of personnel dosimeters?

- K.3.b N (See comment above and comment on State Plan.)



K.4. A

K.5.a. N (See comment on State Plan.)

Unable to locate levels for decontamination in the County Plan. Are they the same as the State Plan?

K.5.b. N. (See comment on State Plan.)

The County Plan references assign the responsibilities and talk in generalities. However, what is needed is the who, where, and with what. Attachment 13 to Procedure 3 adequately explains the how.

L. Medical and Public Health Support

L.1. N The County Health Department is assigned the responsibility of notifying the Central New York Hospital Association for hospital support outside the county. More detail should be given to facilities within the county.

L.4. General statements included about fire and rescue but no coordinated plan was evident.

M. Recovery and Reentry Planning and Postaccident Operations

M.1. N (See comment on State Plan.)

N. Exercise and Drills

N.1.a. A

N.1.b. A

N.2.a. A

N.2.c. N No provision for emergency medical drills at the County Level.

N.2.d. N This criterion will be satisfied when (1) exposure record keeping and collection and analysis of sample media are included in the drill procedures and (2) when the "mechanism for using the results of drills and exercises as a basis for improving the CRERP" has been established.

N.3.a. A

N.3.b. A

N.3.c. A

N.3.d. A

N.3.e. A

N.3.f. A

N.3.g. A

N.4. N An incomplete reference was provided; hence this element could not be evaluated.

N.5. A

Radiological Emergency Response Training

N.6. A

N.7. A

N.8.a.) N Local Plans and Procedures not specific enough. They do not list specific type of training needed.

N.8.b.)

N.8.c.)

N.8.d.)

N.8.e.)

N.8.f.)

N.8.g.)

N.8.h.)

N.8.i.)

N.8.j.)

N.9. A

P.

P.1.

P.2.

P.3.

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## Federal Emergency Management Agency

Region II

26 Federal Plaza

New York, New York 10278

December 31, 1981

Mr. William C. Hennessy, Chairman  
Disaster Preparedness Commission  
State of New York  
Public Security Building  
State Campus  
Albany, New York 12226

Dear Mr. Hennessy:

DOCKET: FEMA-REP-2-NY-2

Attached to this letter, please find the Regional Assistance Committee's (RAC) comments regarding the State Site Specific plan (Attachment 1) and comments regarding the Orange, Putnam, Rockland and Westchester County Radiological Emergency Response Plans (CRERPs) (Attachment 2) for the Indian Point Site.

The detailed comments that the RAC has provided, coupled with a meeting you may request to discuss these comments, should serve to identify the revisions necessary in the State Site Specific plan and the County Radiological Emergency Response Plans (CRERPs).

Please provide this office, within twenty days from receipt of this letter, your schedule for each plan, by date, the remedial actions for correcting deficiencies listed by the RAC.

Sincerely,

*Vincent Forde*  
Vincent Forde  
Acting Regional Director

Attachments

RAC COMMENTS  
ON  
NEW YORK STATE  
RADIOLOGICAL EMERGENCY PREPAREDNESS PLAN  
PART II - SECTION I: NUCLEAR POWER PLANTS  
INDIAN POINT SITE - SITE SPECIFIC OPERATIONS

JULY 1981

General Comments: Regional Assistance Committee (RAC) comments pertaining to NY State generic Radiological Emergency Preparedness Plan (RERPP) were furnished in a letter from the FEMA Region II Acting Regional Director to the Chairman, Disaster Preparedness Commission, dated September 29, 1981, along with comments on the Oswego County Radiological Emergency Response Plan (CRERP) (Docket: FEMA-REP-2-NY-1). Therefore, the comments below relate only to those planning criteria elements of NUREG 0654/FEMA REP-1 that are addressed in the NY State RERPP Indian Point Site-Site Specific Operations.

LEGEND: A-ADEQUATE  
N-INADEQUATE

<u>ELEMENT</u>	<u>RATING</u>	<u>COMMENT</u>
Alc	N	Figures 7 thru 10 (pp. IP 19 thru 29A) should be changed to reflect comments made for element Ala, in letter referenced above.
Ald	N	The site-specific plan identifies a specific individual by title who shall be in charge of the emergency response for each of the four counties in the 10 mile EPZ. (Pgs. IP 37) However, this element will not be adequately addressed until the deficiency for this element in the generic RERPP is corrected. (See comment for element Ald, letter referenced above.)
Ale	A	In addition to 24-hour per day manning of communications links each organization shall provide for 24-hour per day response. Provision is made in the site-specific plan for both (Pgs. IP-42 and IP-44).
A2a	N	Memoranda of Understanding in the generic State RERPP are not finalized. This uncertainty casts doubt on the validity of the interrelationships depicted in Figures 7 thru 15.  The uncertainty in lead jurisdictions outlined in comment on element A2a, letter referenced above, once clarified, will improve this section.  The assignment of emergency responsibilities of the various supporting organizations has been established with the exception of the responsi-

ELEMENTRATINGCOMMENT

bilities of the Department of Agriculture (USDA). We suggest the following statement be included to establish USDA's role. "The United States Department of Agriculture has established in every State and county disaster assistance efforts. All of the USDA agencies having major emergency responsibilities are represented on these boards. USDA emergency personnel are to establish continuing liaison with State and/or county agricultural agencies to insure coordination of assistance activities and damage assessments."

The USDA Regional Radiological Representative (RRR) for the State of New York is:

George J. Puchta  
New York, New York  
(212-264-1390)

The USDA State Emergency Board (SEB) representative for the State of New York is:

Frank Walkley  
Syracuse, New York  
(315-423-5176)

D

Emergency Classification System

D3

A

The Site Specific Operations establish an emergency classification and emergency action level scheme consistent with that established by the facility licensees. (pp. IP-43)

<u>ELEMENT</u>	<u>RATING</u>	<u>COMMENT</u>
E		<u>Notification Methods and Procedures</u>
E1	N	<p>The NY State RERPP does have established procedures for notification of emergency personnel. However, the plan does not provide for the proper notification of the USDA organizations involved. The NY DOH should notify the USDA Regional Radiological Representative (RRR), George Puchta, New York, NY (212-264-1390) by telephone. The RRR will notify USDA's State Emergency Board representative, Frank Walkley, Syracuse, NY, (315) 423-5176). The USDA State and County Emergency Boards will notify the affected agricultural industries.</p> <p>As commented in NY State RERPP as referenced in letter referenced above for element E1, there is no procedure/method for contacting EPA as required by the ORP guidance. (RERPP Part I, Section III, III-28 thru 31, 33; Part III, Section I, Procedure B)</p> <p>The Site Specific Operations addresses procedures which describe mutually agreeable bases for notification of response organizations consistent with the emergency classification and action level scheme set forth in Appendix 1, NUREG 0654/FEMA REP-1. However, procedures for verification of messages were not addressed (Part II, Section I, IP-44).</p>
E6	A	<p>The NY State generic RERPP supplemented by the Indian Point Site Specific Operations, describe administrative means and for notifying and providing prompt instructions to the public within the plume exposure pathway EPZ. See comments on the County Radiological Emergency Response Plans for adequacy of physical means and time required for notifying and providing prompt instructions to the public within the 10 mile EPZ (RERPP-Part I, Section III, III-7 thru 10, 27, 33, Part III, Section I, Procedures B and C; Site Specific - Part II, Section I, IP-50) (See RERPP comments for element E6, letter referenced above).</p>
E7	N	<p>The Site Specific Operations does not provide draft messages. Neither does the generic RERPP. No sample of public information pamphlet is cited. (p. IP-50)</p>



<u>ELEMENT</u>	<u>RATING</u>	<u>COMMENT</u>
G		<u>Public Education and Information</u>
G4a	A	<p>The Site Specific Operations designates a spokesperson who should have access to all necessary information (p. IP-50)</p> <p>This information is reinforced in the generic RERPP (Part I, Section III, III-15)</p>
H		<u>Emergency Facilities and Equipment</u>
H3	A	The Site Specific Operations establishes an emergency operations center for State at the Office of Disaster Preparedness (ODP), Public Security Building, Albany, NY. In addition, the State has established a District EOC at the ODP Southern District office, Creek Road, Poughkeepsie, NY. Both facilities are equipped for directing and controlling response functions (pp. IP-39 thru 41).
H4	A	The Site Specific Operations provides for timely activation and staffing of facilities and centers described in pp. IP-39 thru 41. (pp. IP-47 thru 48).
H7	N	The State has no iodine detection capability as part of the off-site monitoring equipment in the vicinity of the site. (pp. IP 48 thru 50 and Attachment 5)
I		<u>Accident Assessment</u>
I7	N	<p>This criteria element asks what field monitoring capability each organization (licensee, state, and local) has within the plume exposure pathway. Attachment 5 does not describe what field monitoring capability the State has. If the State has no capability, the plan should so state and provide information on what field monitoring data the State intends to use for its evaluation at various stages of an accident.</p> <p>(For additional comments, see element I7, generic RERPP, letter referenced above)</p>
I8	N	This criteria element asks for provisions for activation, notification means, field team composition, transportation, communications, monitoring equipment and estimated deployment times. Attachment 5 does not provide any of the specific information. The generic RERPP is similarly deficient.



<u>ELEMENT</u>	<u>RATING</u>	<u>COMMENT</u>
I9	N	As of July, 1981, the State had no field measurement capability to detect and measure radiiodine concentrations in the air. If such a capability now exists, it should be reflected in the Site-Specific Operations or the generic RERPP (Attachment 5).
J		<u>Protective Response</u>
J2	N	The Site Specific Operations provides for evacuation and transportation of Site personnel to suitable off-site locations, including alternatives for inclement weather. However, this plan does not address alternatives due to specific radiological conditions (pp. IP-56 thru 57)
J9	N	The Site Specific Operations is not clear in identifying who will make the decisions to implement protective actions (pp. IP-49 thru 50 and Attachment 5).
J10b	N	Maps, as described in Figures 1, Appendix 4, NUREG 0654/FEMA REP-1 could not be located in the Site Specific Operations. However, a table of sector and zone designators in conformance with Table J-1, NUREG 0654/FEMA REP-1 was located in Figure 1, Attachment 1 (pp. IP-54 thru 55 and Attachment 1)
J10d	N	Paragraph 7.2.13 states that "Normal procedures for evacuating special facilities will be implemented when ordered." This statement does not provide sufficient detail to ascertain whether the means for protecting those persons whose mobility may be impaired due to confinement, etc., is adequate (pp. IP-61, Attachments 10 thru 13).
J10g	N	<p>Although the means of relocation is described, there is no assurance referenced in this plan that the public and privately owned buses would respond, upon call up, to transport personnel if so directed.</p> <p>Letter Agreements/MOUs are lacking. (pp. IP-56, 57 and Attachment 7). How many buses are available in each bus garage at any given time? What are the passenger capacities of these buses. Is augmentation necessary? Where will it come from?</p>

<u>ELEMENT</u>	<u>RATING</u>	<u>COMMENT</u>
J10h		Paragraph 7.2.11 states that Reception Center and Congregate Care Centers are specified in each of the four CRERPs. Host facility maps, attached but not adequately referenced, contained host facilities in each of the four counties.
J10i	N	Projected traffic capacities of evacuation routes under emergency conditions could not be located where referenced in the Site Specific Operations. (pp. IP-54, IP-56, and Attachment 6)
J10j	A	Provision has been made for control of access to evacuated areas and organization responsibilities for such control. (Procedures for manning ingress control points are said to be included in the four CRERPs. (p. IP-56 and IP-60 and Attachment 9) Will there be sufficient law enforcement personnel to man all the control points identified in Attachment 9?
J10k	N	Insufficient information is furnished to determine whether or not identification of and means for dealing with potential impediments to use evacuation routes, and contingency measures. (p. IP-56)
J10l	N	Although evacuation time estimates under various weather conditions are described in table form in Attachment 6 of the Site Specific Operations, they are described by EPA rather than by sector and distance. Moreover, a determination of adequacy of planning for this element cannot be determined until Appendix 4, (cited in the cross-reference) is submitted to the RAC by the State and reviewed. Based on a conversation between FEMA Regional staff and the State nuclear Emergency Preparedness Group (NEPG) on December 28, 1981, the Appendix 4 report has not been received by New York State from the licensee consultant, Parsons, Brinkerhoff. The rating for planning related to this element will remain inadequate until the RAC has made a determination on the adequacy of Appendix 4.
J11	N	Paragraph 6.2.2 does not specify the protective measures to be used for the ingestion pathway, including the methods for protecting the public from consumption of contaminated foodstuffs. Maps are not furnished or referenced. Up-to-date lists or references to same regarding name and location of all facilities which regularly process milk products and other large amounts of food, et.al. (p. IP-46)

ELEMENT

RATING

COMMENT

(For additional comments, see element J11,  
generic RERPP, letter referenced above.)

RAC COMMENTS  
ON  
NEW YORK STATE  
COUNTY RADIOLOGICAL EMERGENCY PREPAREDNESS PLANS (CRERPs)  
INDIAN POINT  
AUGUST 1981

LEGEND: A-ADEQUATE  
N-INADEQUATE

<u>Element</u>	<u>Rating</u>	<u>Comment</u>
A.		<u>Assignment of Responsibility</u>
A.1.a.	N	<p>It is clear in the Westchester County plan that the lead role for response activities will belong to the County Executive with the Primary Support role belonging to the County Office of Disaster and Emergency Services. (III.C.1., Table III-1)</p> <p>In the Westchester County Plan, State agencies are given only primary and secondary support roles. It is understood that lead responsibility will shift away from the county after a State declaration of emergency, but this is not reflected in the Plan (Table III-1).</p> <p>A clear statement must be made in all county plans that clearly defines the change of responsibilities once a State declaration of disaster is made. This is clear in the amendment to the New York State Executive Law, Article 2b, where Section 2b is amended in subdivision 2. The amendment allows the Governor or designee to direct the County Chief Executive. However, in neither Table III-1 nor in the written sections of the plan is this clearly stated. A chart should be developed which will complement Table III-1 and establish lines of authority during a radiological emergency during a declaration of a "State of Disaster Emergency."</p> <p>Page 11 of NUREG 0654 states that the State rather than local response organizations will be principally responsible for the planning associated with the ingestion exposure pathway EPZ. It is not clear where in the plan this is stated. The plan should include the above comment. All private sector organizations have not been identified (i.e. radiological laboratories to process environmental samples).</p>

<u>Element</u>	<u>Rating</u>	<u>Comment</u>
		What arrangements have been made for these services? (III.B., III.C, Table III-1, all CRERPs)
A.1.b.	N	<p>Although functions and mission statements were found in the plan in Section III, describing lead, primary support and secondary support roles, these statements do not satisfy the planning element.</p> <p>The concept of operation for each organization has not been provided. While there are organizational charts in the CRERPs, functional relationships are not clear. We suggest functional charts depicting relationships by function across "line" organizations to establish clear, functional relationships during emergencies. (i.e. For the function of traffic control, a chart depicting who is in charge of this function, showing the command and control relationship down to the intermediate and responder levels.)</p> <p>(I.D., I.E., III.B., Procedures 1 thru 9, Putnam CRERP; I.D., I.E., III.B., Procedures 1 thru 10, Orange, Rockland and Westchester (ORW) CRERPs)</p>
A.1.c.	N	<p>Although the block diagram illustrating organizational interrelationships is found in Figure III-1, Article 2B revisions are not reflected in this chart.</p> <p>Also see comment on element A.1.b.</p>
A.1.d.	N	<p>The CRERPs identify a specific individual by title who shall be in charge of the emergency response in many cases. However, this information was not adequately cross-referenced in the plan. Also see comment on element A.1.b.</p> <p>A chart or master chart similar to the one in Figure III-1 could easily identify all the data necessary.</p> <p>(III.C.1., III.D., all CRERPs)</p>
A.1.e.	N	<p>The CRERPs provide for a 24-hour per day manning of a communications link, called the county warning point (III.C., III.D.). However, we could not determine whether or not provisions allow the individual in charge of each organization's emergency response could be reached 24 hours a day (e.g. during non-duty hours away from home or in transit).</p>

ElementRatingComment

Any implementing procedures should be specifically referenced.

(III.F.1, all CRERPs)

A.2.a.

N

Although the specific functions and responsibilities for major elements of the emergency response are not adequate at this time, this planning element will be satisfied when Articles 2B revisions are incorporated in the plan (See Comment for A.1.a.) (III.C., Table III-1, Procedure 1 thru 9, Putnam CRERP; III.E., Table III-1, Procedure 1 thru 10, ORW CRERPs)

A.2.b.

A

The CRERPs contain, by reference to specific acts, codes or statutes, the legal basis for such authorities. (I.A., all CRERPs)

A.3.

N

The County Executive or Chairman of the Legislature must sign off on the letter under Appendix 1 which endorses each County plan.

There are no agreements between the county and non-governmental organizations listed in the plans. These should be obtained and included in the plans. Specifically, there are no letters of agreements from bus companies, unions, volunteer fire departments and ambulance services, or EBS station managers for activation of the EBS. Mutual aid agreements with the other counties within the 10 mile EPZ for equipment and personnel resources should be considered. A copy of all Letters of Agreement/MOUs must be on file at the FEMA Regional Office, since that is the Federal Office of Record for REP. (I.A. and Appendix 1, all CRERPs)

A.4.

N

Not addressed where referenced (I.D., I.E., III.C.1). Each organization shall be capable of continuous 24-hour operations for a protracted period. The individual in the principal organization who will be responsible for assuring continuity of resources is not specified by title.

C.

Emergency Response Support and Resources

C.1.c.

N

Resources available to support the Federal response are not described where referenced. (I.D., III.2.D., Appendix E, all CRERPs)

C.2.a.

A

The CRERPs provide for the dispatch of a county



<u>Element</u>	<u>Rating</u>	<u>Comment</u>
		official to the near-site EDF (III.D.2., III.F.2., Procedure 1, all CRERPs)
C.4.	N	Have all facilities and resources of non-government organizations been identified? Letters of agreement are not available for all organizations listed (I.D., I.E., Appendix J, Procedure 5, all CRERPs).
D.		<u>Emergency Classification System</u>
D.3.	A	The CRERPs have established an emergency classification level scheme consistent with that established by the facility licensee. (III.F., Procedure 1 thru 9, Putnam CRERP, III.F., Procedure 1 thru 10, ORW CRERPs)
D.4.	A	The CRERPs provide for emergency actions to be taken which are consistent with emergency actions recommended by the nuclear facility. (Procedures 1 thru 9, Putnam CRERP; Procedure 1 thru 10, ORW CRERPs).
E.		<u>Notification Methods and Procedures</u>
E.1.	A	The CRERP procedures for notifying response organizations are consistent with the emergency classification and action level schemes. Although verification of message from the licensee is included, it is suggested that verification be made immediately after receipt of call (III.F.1., Procedure 1 thru 9, Putnam CRERP; III.F.1., Procedure 1 thru 10, ORW CRERPs).
E.2.	A	Good discussion of individual agency procedures to follow to alert, notify and mobilize emergency response personnel (III.F.1., II.F.2., Table III-2, Procedures 1 thru 9 Putnam CRERP; III.F.1., II.F.2., ORW CRERPs).
E.5.	N	The CRERPs do not satisfy the planning guidelines regarding the dissemination of information to public using the EBS. The cross reference erroneously refers to Appendix E. The correct cross reference is Appendix F. The correct page reference in Paragraph F.1.a. (page F-12) should be F-18.

Section II.F. of Appendix F merely repeats information that is included in the EBS Local Operational Area plan.



Indicate which radio stations are operational on a 24-hour basis.

Has the Hudson Valley Catskill Operational Area EBS Plan, been approved by the Federal Communications Commission (FCC)? The Operational Area EBS Plan, which is not cross-referenced in the CRERPs, states in Paragraph V.A.1, "Activation of EBS for the Hudson Valley Catskill Operation Area, other than weather, will be at the exclusive request of authorized officials at the White Plains Civil Defense Headquarters." Annex A of this EBS plan designates by name, title and phone number, the Westchester County Executive County Director of Disaster and Emergency Services, County Executive Officer, County Sheriff and Commissioner of Health, as the only officials authorized to activate the EBS. The CPCS-1 for this Operational Area is station WABC, New York, N.Y. The CPCS-2 is WFAS, White Plains, N.Y. Have the other three county executives agreed to this arrangement? Where are the letter agreements among the counties on this arrangement? What is the procedure for this arrangement? Copies of all Letters of Agreement should be on file at the FEMA Regional Office (See NUREG 0654/FEMA REP, Appendix 3, Section C.4 for detailed guidance on use of EBS for prompt notification).

The plans do not contain any detailed information concerning the method of coordination of all EBS messages among counties within the EPZ, as well as with the State. Appendix B should be cross referenced.

In Section III.D.C., Reference Appendix E should be changed to Appendix F.

The sample public warning notices in Appendix B should state "this is not a test." (except of course during a test). (III.D.2.c., III.F.1., Appendix F, Procedures, 1 thru 9, Putnam CRERP; III.D.2.c., III.F.1., Appendix F, Procedures 1 thru 10, ORW CRERPs)

E.6.

A

What is the actual completion date for installation and operational capability for the alert and notification system? What is the actual date for installing the supplemental notification devices (the alert receivers)? (III.C.2., III.D.2., Appendix F, Procedures 2 and 8, all CRERPs)

<u>Element</u>	<u>Rating</u>	<u>Comment</u>
E.7.	N	<p>The draft announcements are not adequate neither in number nor content to meet the emergency information needs for people with the Indian Point EPZ. Deficiencies which should be remedied are:</p> <ol style="list-style-type: none"> <li>1-Include advisory to stay tuned to station.</li> <li>2-Provide updates more frequently than on an hourly basis during site and general emergency stages. Provide time when next advisory will be given.</li> <li>3-Since ERPAs are used as the basic unit by emergency planners, announcement should utilize ERPA designation. This is particularly important because the public education materials presumably use ERPAs as the base unit.</li> <li>4-Announcements should indicate coordination with other counties in EPZ and should include information for residents of other counties.</li> </ol> <p>There is a critical need for coordination in this area because obviously a Westchester County resident, for example, could be listening to a Rockland County radio station.</p> <ol style="list-style-type: none"> <li>5-Separate announcements regarding school evacuations should be prepared.</li> <li>6-The General Emergency evacuation announcement should name reception centers and routes to be used to the reception centers.</li> <li>7-People should be provided with a rumor control number. Considering the size of the transient population in the EPZ as well as the density of the permanent population, it's inevitable that, in the event of an incident, there will be a number of people who will be in special circumstances requiring special aid and/or information.</li> </ol>

(III.C.10., III.D.2., Appendix B, all CRERPs)

F. Emergency Communications

F.1.a.	N	<p>The County communications centers are manned on a 24 hour basis and is responsible for calling the emergency response agencies (II.F.1., III.F.2). It is not clear from the plan what the alternate method of communications is for notification and</p>
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<u>Element</u>	<u>Rating</u>	<u>Comment</u>
		activation of the emergency response network. This should be clearly stated in the plans.
		Identify, by title, who is responsible at each end of the communications link for the emergency communications function. (III.F.1., III.F.2., Procedures 1 thru 9, Appendix E, Putnam CRERP; III, F.1., III.F.2, Procedures 1 thru 10, Appendix E., ORW CRERPs).
F.1.b.	N	<p>III.D.2. states that the capability exists at the EOF for communication between the counties and the State. This is to be accomplished by the New York State nuclear hotline as stated in Appendix E.</p> <p>The plans have not provided for communications between contiguous States and counties in the 50 mile ingestion exposure pathway.</p> <p>In addition, provision for all alternate communications links between States and counties has not been clearly defined in the plans (III.C.5., III.D.2., Appendix E, and Procedure 1, all CRERPs).</p>
F.1.c.	N	<p>Although the plan states there is to be communications with Federal agencies, there is no indication how this will be accomplished. Include the Coast Guard, Railroads, FRMAP teams, etc.</p> <p>(III. C. 5., III.D.2., and Procedure 1, all CRERPs).</p>
F.1.d.	N	<p>How will communications be maintained with the field monitoring teams?</p> <p>(III.C.5., III.D.2., Appendix E, Procedures 1 thru 9, Putnam CRERP; III.C.5., III.D.2., Appendix E., Procedures 1 thru 10, ORW CRERPs).</p>
F.1.e.	N	<p>Alternate individuals for each emergency response agency have not been designated. Also, the designated PIO should be included in Procedure 1, Attachment 3. (See criteria for F.1.)</p> <p>(III.F.1., III.F.2., Figure III-2, Procedures 1 thru 9, Putnam CRERP; III.F.1., III.F.2., Figure III-2, Procedures 1 thru 10, ORW CRERPs)</p>

<u>Element</u>	<u>Rating</u>	<u>Comment</u>
F.2.	N	<p>It is unclear from the plans whether communications links for the fixed and mobile medical support facilities exist. Specific information concerning the method of communications linking the hospital and the mobile support units and the types of communications equipment at both the mobile and fixed facilities are not provided.</p> <p>(III.C.5., III.C.7., III.C.11., Appendix E, Procedure 8, all CRERPs)</p>
F.3.	N	<p>Procedures for hotline testing are adequate. This planning element necessitates provisions for the conduct of periodic tests for the entire emergency communications system. These tests must address and include: communication equipment for radiological field monitors, all fixed and mobile radio units between EOF, County, District, State EOC and response organizations. Also see planning criterion N.2.a.</p> <p>The references that were reviewed did not satisfy the criteria for radios and land lines other than hot-lines.</p> <p>(III.B.2., II.B.4., Appendix E, Procedure 14 Putnam CRERP, II.B.2., II.B.4., Appendix E, Procedure 15, ORW CRERPs)</p>
G.		<u>Public Education and Information</u>
G.1.	N	<p>According to Appendix L. a public information pamphlet is being developed, but at the date of submission of this plan, none has been included. Therefore, review of the materials and this element is not possible. (II.B.6, III.C.10., Appendix L., all CRERPs)</p>
G.2.	N	<p>There are no specifics regarding the public information program for permanent and transient populations of the plume exposure EPZ. What is the methodology to ensure that the public information program materials will be available to all permanent and transient populations?</p> <p>(II.B.6., III.C.10. and Appendix L, all CRERPs)</p>
G.3.a.	A	<p>Each CRERP designates the County PIO as the point of contact. Each plan indicates a physical location for use by the news media during the emergency (III.D.2.C., all CRERPs).</p>

<u>Element</u>	<u>Rating</u>	<u>Comment</u>
G.4.a.	A	Plans designate County PIOs as the spokespersons who should have access to all necessary information (III.D.2.C., all CRERPs).
G.4.b.	N	Specifics are not provided as to how information will be exchanged among spokesperson. Suggest that provisions be made so that hard-copy of all announcements/new releases are available on a timely basis to all spokesperson and all decision-makers. Recommend log or message board be used at County EOCs and media centers to display <u>all</u> information which has been provided to the public by county and State officials in 10 mile EPZ. (Not referenced in CRERPs.)
G.4.c.	N	Section III.D.2.d. states that the county PIO is responsible for establishing a Rumor Control Center. However, provision has not been made, as yet, since no specific information concerning the Center has been included in each plan. In addition, the plans do not reflect a full understanding of the purpose of rumor control. Rumor Control is primarily designed to provide the general public a point of contact to obtain answers to individual questions. Notwithstanding, evaluation of questions coming into rumor control may point up a need for new releases on frequently asked questions. The plan does not provide information on the location and the staffing of the Rumor Control Centers. (III.D.2.d., all CRERPs)
G.5.	N	Section II.B.6.b. merely assigns responsibility for the coordination of an annual news media program to acquaint the news media with the CRERP. A detailed program should be developed and presented in the plans. (II.B.6., Procedure 12, Putnam CRERP; II.B.6., Procedure 13, ORW CRERPs)
H.		<u>Emergency Facilities and Equipment</u>
H.3.	A	Each CRERP identifies the name and location of County EOCs which will be used in directing and controlling response functions (III.D.2., all CRERPs).
H.4.	A	Each CRERP provides for timely activation and staffing of the EOCs described in the plans (II.F.1., III.F.2., and Procedure 1, all CRERPs).



<u>Element</u>	<u>Rating</u>	<u>Comment</u>
H.7.	N	<p>Specify the date for installing of the Reuter Stokes Sentri 1011 Environmental Radiation Monitoring System. Appendix J of the 8/1/81 revision indicates that "this equipment is scheduled to be installed and operable by the end of 1981, and will be available for interrogation by the MIDAS System at the time."</p> <p>As previously stated, the plan must discuss both the adequacy of calibrations, and security from damage.</p> <p>Identify duties to be performed by the county personnel trained in radiation monitoring (i.e., identify present capabilities of personnel) who will be allowed to accompany NFO Nuclear Environmental Monitoring teams.</p> <p>Describe the chain of command to be used by multi-agency monitoring teams, i.e. within the team itself, and the method communicate of data to the immediate supervisor through the chain to the final accident assessment personnel and their location(s). (See comments on element A.1.a. and A.2.a.)</p> <p>Specify laboratory equipment to be used in sample analysis and its location. If this is a State responsibility, reference the appropriate section of the State plan. Describe county monitoring equipment and location. (See comments on element A.3.)</p> <p>The "radiation monitoring emergency kits for county field teams," discussed in Appendix J, are really personnel support items which are not available in sufficient quantity for the anticipated personnel who will make up these teams. (Procedure 3, Attachment 17)</p> <p>The evaluation symbols are missing in Table III-3 of the Rockland Plan.</p> <p>(III.C.14., II.G., Procedure 13; Putnam CRERP; III.C.14.; II.G., Procedure 14, ORW CRERPs).</p>
H.10.	A	<p>Procedure 13, Putnam CRERP and Procedure 14, ORW CRERPs contain a good set of procedures for checking and verifying equipment and instruments.</p> <p>(II.B.2., II.B.4., Procedure 13, Putnam CRERP; II.B.2., II.B.4., Procedure 14, ORW CRERPs).</p>

<u>Element</u>	<u>Rating</u>	<u>Comment</u>
H.11.	N	<p>This element requires identification (in an appendix) of emergency kits by general category: protective equipment, communications equipment, radiological monitoring and emergency supplies.</p> <p>In the Westchester plan, these general categories are covered in Procedure 3, Attachments 16 and 17. Attachment 16 lists emergency supplies, including rolls of dimes and nickels (purpose unspecified). There are no personnel dosimeters or permanent record device in this list. Attachment 17 is a List of Agency Resources. On page 17-1, the following are listed: 1. Personnel, 2. Transportation, 3. Equipment. Page 17-2 was missing from the EPA copy of the plan. On page 17-3, the following are listed (numbers as in plan): 3. Equipment, 4. Communication. The headings on page 17-4 duplicate those on page 17-3, but the contents of the lists differ. Page 17-6 list Protective Gear/Clothing, 4. Facilities. Attachment 17 requires reorganization to eliminate confusing duplication.</p> <p>Procedure 3, Attachment 15 (Westchester, Putnam and Orange CRERPs) is an incorrect reference dealing with sheltering and alternative actions for protection from radioiodine ingestion.</p> <p>In the Rockland County plan, Procedure 1, Attachment 8 is a List of Agency Resources which discusses the general categories of this element. There is no radiological equipment available at this time. Specify anticipated acquisition time. Discuss the emergency use of the personnel, transportation, and communication equipment with respect to the various emergency response actions in the plan. Putnam and Orange CRERPs do not sufficiently discuss the requirements of this element. (Appendix J, Procedure 1, Putnam CRERP; Appendix J. Procedure 3, ORW CRERPs).</p>
H.12.	N	<p>The portion of the CRERPs referenced identify where field data will be collected and recorded, but the plans do not specify where field data will be analyzed and where sample media will be coordinated. (III.D.2, Procedure 3, Attachment 14, all CRERPs)</p>
I.		<u>Accident Assessment</u>
I.7.	N	<p>In all the plans the chain of command places a county official in a leadership role over teams</p>



ElementRatingComment

provided by the NFO and DOE. All plans contain an attachment entitled "Instructions for Radiation Monitoring Teams." It is unclear if these instructions have been developed in cooperation with the two organizations that will be doing the actual monitoring.

Develop specific Standard Operating Procedures (SOPs) for each type of monitoring equipment and instructions on data and sample collection.

Specify location or monitoring site maps which are sufficiently detailed to allow rapid arrival at destination by teams unfamiliar with the locations (i.e. DOE, county teams, newly trained NFO teams) and for the use of the county official to whom the teams are reporting their data.

Discuss transportation arrangements for monitors.

It is advisable to include phone numbers or numerical radio frequencies in the public plan. A reference to the location and availability of this controlled information is sufficient.

Discuss methodology for sample collection at survey points, method for relaying information to Team supervisor or to collection point. Discuss primary and backup communications to be used by field personnel. Identify central collection points designated for all environmental samples collected by survey teams and the means by which data are provided to organizational element responsible for the emergency assessment functions.

If there are no separate county monitoring teams, for whom are the "Instruction for Radiological Monitoring Teams" intended?

(III.C.14., III.G.1., Appendix J, Procedures 3, Putnam CRERP; III.C.14., III.G.1. Appendix J, Procedure 14, ORW CRERPs)

I.8.

N

The present capabilities for this element are lacking in all counties. Procedures 3, Attachment 2, does not adequately fulfill the activation portion of this element. The notification means may be either landlines or radio but it is unclear as to how specific response personnel are notified.

ElementRatingComment

Transportation arrangements for monitoring teams are not discussed. Communication equipment is described in Appendix E. However, there is little evidence of backup arrangements and no discussion of communication for field monitoring teams. Monitoring equipment lists of the NFO and DOE are included. Putnam and Orange County have no monitoring equipment. Specify field team deployment times.

No consideration has been given to information available from the licensee (i.e. description of site conditions time-frame for repair, release projections, corrective action under way).

The CRERPs should address means for interpreting licensee furnished data.

Reference III.D.2.b. should be corrected to read III.D.2.b. in the cross-referenced index.

(III.C.14., III.D.2.b., Appendix J. Procedure 3, all CRERPs)

J.

Protective Response

J.2.

N

Provisions for evacuation routes and transportation for on site location, including alternatives for inclement weather, could not be located in plan where referenced. (Appendix A, Procedure 1 thru 9, Putnam CRERP; Appendix A, Procedure 1 thru 10, ORW CRERPs)

All CRERP response actions are predicated on the assumption of a release of radioactive materials which develops over a period of time. However, the facilities and means for monitoring emergency personnel and evacuees are inadequate or completely lacking.

J.9.

A

All CRERPs discuss the capability for implementing protective measures based upon protective action guides and Federal criteria. The applicable point of Procedure 3 in the Putnam, Orange, Rockland and Westchester, CRERPs should be specified. (III.G.2., III.H., Tables III-2 thru III-5., Procedure 3)

See general comments for deficiencies in evacuation plans. Has the general public been provided with the pertinent RERP information? If so, specify details of the program. If not, provide program details and completion date.

Discuss the conditions under which evacuation will no longer be a viable protective action, i.e. inclement weather, short-term duration of a high exposure plume.

The Red Cross does not recognize a difference between reception centers and congregate care centers; all are simply "shelters." Therefore, it is necessary to use common terminology to reduce the possibility of confusion. Since there is a potential for bypassing the reception centers, it is necessary to have registration, monitoring, and decontamination facilities at both types of centers.

Specify present decontamination facilities and monitoring capabilities at these facilities.

During an emergency of this nature, it is necessary to "mandate" monitoring and decontamination activities, not "encourage" them as stated on page A-37, paragraph 3. Provisions must be made for the feeding of non-Red Cross emergency personnel working in reception/congregate care centers.

The right hand column of Table III-3 is incorrectly labeled. The heading should reflect the fact that the items listed are the protective action response options that will be considered for implementation to the projected dose commitment listed in the left-hand column.

Specify the completion date for installation of permanent evacuation route signs.

The vehicular evacuation times under adverse conditions for many ERPAs are much greater than the times for people to walk out of the EPZ. The circumstances under which vehicular evacuation ceases to be a viable protective action might be an appropriate inclusion for Appendix A.

Decontamination action levels are given only for skin contamination, milk, and agricultural products other than milk. Specify levels for equipment. Not all plans contain action levels for skin contamination from alpha particles. Procedure 3, Attachment 16 states that during a site area emergency, the appropriate county

organization will "provide off-site monitoring results to NFO and others and jointly assess them." Since the off-site monitoring is being done by the NFO, it would seem that this statement requires clarification.

As previously discussed, Table 4II-4 should include dose as well as concentration values because protective actions are in response to projected dose commitment.

J.10.a.

N

Although not cross referenced, maps in Volume 2 of each CRERP contain evacuation routes, evacuation areas and relocation centers in host areas and relocation centers in host areas and shelter areas. However, none of the maps depict preselected radiological sampling and monitoring points (Appendix A, all CRERPs).

J.10.b.

N

Maps, as described in Figure 1, Appendix 4, NUREG 0654/FEMA REP-1 could not be located in the CRERPs. However, tables of sector and zone designators depicting population distribution were found to be in conformance with Table J-1, NUREG 0654/FEMA REP-1.

Sector maps should be superimposed over ERPA maps to facilitate coordination of protective response measures with contiguous counties in the Plume EPZ and with the State.

Means for notifying all segments of the transient and resident population are not adequate.

(Appendix G, all CRERPs)

J.10.c.

N

See comment for element E.5. (Appendix F., all CRERPs)

J.10.d.

N

Procedure 9 of each CRERP addresses the means for protecting those persons whose mobility may be impaired due to such factors as institutional or other confinement. There is a minor error in cross-referencing on page CI-16 of cross reference for element J.10.d. There is no paragraph A.3 in Part III. However, there is a paragraph III.A.3. in Appendix.

The CRERPs do not address those individuals who are impaired or confined, but are not institutionalized.

(III.H.2., III.H.3., III.H.4., III.H.5., III.A.3., Appendix A, Procedures 3 and 5, all CRERPs).

<u>Element</u>	<u>Rating</u>	<u>Comment</u>
J.10.e	A	<p>According to statements made by NYS Health Department Officials on October 7, 1981 at the FEMA Regional Office at a meeting with RAC members, all CRERPs should be consistent with the State decision not to use KI at this time.</p> <p>(Procedures 6,8 and 9, all CRERPs)</p>
J.10.f.	A	<p>See comment for element J.10.e.</p> <p>The CRERPs include method by which decisions by the State Health Department for administering radioprotective drugs to the general population are made during an emergency and the predetermined conditions under which such drugs may be used by off-site emergency workers.</p>
J.10.g.	N	<p>Although the means of relocation is described, there appears to be no commitment referenced in the CRERPs that public and privately owned buses would respond upon call to transport personnel, if so ordered. (Are there agreements?) How many operational buses are available in each garage at any given time? Is augmentation necessary? Where will it come from? (See comment for A3)</p> <p>(III.C.12., III.H.4., III.H.5., Appendix A, Procedures 1 thru 9, Putnam CRERP; III.C.12., III.H.4., III.H.5., Appendix A, Procedures 1 thru 10, ORW CRERPs).</p>
J.10.h.	N	<p>Based upon the review of the Host Facility Location Maps for Orange, Rockland and Westchester Counties, some of the relocation centers appear to be less than 5 miles beyond the boundary of the plume exposure EPZ. (III.C.4, III.H.4., Appendix A and Procedures 2,3,4,5,6 and 8). The host facility location map of Putnam County appears adequate.</p> <p>(III.C.4., III.H.4., Appendix A, Procedure 2, all CRERPs)</p>
J.10.i.	N	<p>Projected traffic capacities of evacuation routes under emergency conditions could not be located, where referenced in any of the CRERPs (Appendix A, all CRERPs)</p>
J.10.j.	A	<p>Provision has been made for control of access to evacuated areas and organization responsibilities for such control (Procedure 2, Tables 1A, 1B, 2A,</p>



<u>Element</u>	<u>Rating</u>	<u>Content</u>
		2B, 3 and 4; also III.C.8., III.H.5., IV.B.6., all CRERPs)
J.10.k.	N	Insufficient information is furnished to determine adequacy of means for dealing with potential impediments to use evacuation routes, and contingency measures. (III.H.3., III.C.9., Appendix A and Procedure 7 of CRERPs).
J.10.1.	N	Although evacuation time estimates under various weather conditions are described in table form in Appendix A of each CRERP, the estimates are described by ERPA rather than by sector and distance. Moreover, a determination of adequacy of planning for this element cannot be determined until Appendix 4, (cited in the cross-reference) is submitted to the RAC by the State and reviewed. Based on a conversation between FEMA Regional Staff and the State Nuclear Emergency Preparedness Group (NEPG) on December 28, 1981, the Appendix 4 report has not been received by NY State from the licensee's consultant, Parsons, Brinkerhoff. The rating for planning related to this element will remain inadequate until the RAC has made a determination on the adequacy of Appendix 4.
J.12.	N	The methodology for registering and performance of monitoring of evacuees at relocation centers in host areas could not be located (Procedure 6 of all CRERPs).
K.		<u>Radiological Exposure Control</u>
K.3.a.	N	<p>There is no mention of permanent dose recording devices in any of the plans.</p> <p>Specify where dose records will be kept and for how long. It is unclear if the dosimeters are presently available on a 24 hour basis.</p> <p>The dose record form (Attachment 8, Procedure 3), as a field record log, should be revised to allow an individual to record periodic readings for one shift. Attachment 8 in its present design is inappropriate either as a field or permanent dose record.</p> <p>(II.B.2., II.E. and Procedure 3, all CRERPs)</p>

<u>Element</u>	<u>Rating</u>	<u>Comment</u>
K.3.b.	N	<p>This criterion requires that "each organization shall...provide for emergency workers..." Therefore, see appropriate comment for K.3.a. above. The proper references in the Putnam and Rockland plans are Attachment 8 and 11, not Attachments 9 and 12. Attachment 8 and 11, in the Orange plan are more appropriate than the referenced Attachments 10 and 12.</p>
K.4.	N	<p>Specify the person (by position title) authorized to permit emergency workers to receive higher exposures. Specify the qualification of the individual (i.e., health physicist, M.D.). Specify "decision chain for authorizing emergency workers to incur exposures in excess of the EPA General Public Protective Action Guides..."</p> <p>(III.E.2. and Procedure 3 all CRERPs)</p>
K.5.a.	N	<p>See comments for J.9.</p> <p>Action levels for decontamination are erroneously referenced. Procedure 3, Attachment 13 addresses criterion. However, the procedure does not satisfy specific instrumentation to be utilized for measurement. The CRERPs do not state what level of contamination follow-up is necessary (e.g. bio-assay, nasal wipes, etc.)</p> <p>Records that are to be kept on every individual who is surveyed should detail area of body surveyed and level of contamination. Records should also include means of decontamination attempted and results achieved by each step.</p> <p>(III.C.4., III.E.2., III.H.3., IV.B.1., Table III-5 and Procedure 3 of all CRERPs)</p>
K.5.b.	N	<p>Specify the "means for radiological decontamination of emergency personnel, wounds, supplies, instruments and equipment, and for waste disposal."</p> <p>Describe medical treatment arrangements for personnel who have been contaminated or exposed to high levels of radiation. Discuss decontamination stations, especially locations, facilities available, and waste disposal means. Attachment 13 contains only the instructions for decontamination.</p>



ElementRatingComment

Discuss source of teams needed to monitor emergency workers and evacuees, to determine need for decontamination and to assure results.

Explain or identify medical or radiological authorities to which contaminated personnel will be referred for additional consultation or treatment.

(III.C.16., III.E.7., IV.B.3., Procedure 3 and 6 of all CRERPs)

L.

Medical and Public Health Support

L.1.

N

Was unable to locate any facilities with radiological evaluation and treatment capabilities in the referenced sections. Attachment 8 under Procedure 10 - Ambulance Medical Services - does list three hospitals with radiological treatment capabilities but no documentation is provided.

(II.B.5., II.E.11., Appendix E and Procedure 3, all CRERPs)

L.4.

N

Insufficient information is furnished to determine adequacy of the arrangements for transporting victims of radiological accidents to medical support facilities (III.C.7. and Procedure 8).

(III.C.7., Procedure 3 and 8, Putnam CRERP; III.C.7. and Procedure 8, ORW CRERPs)

M.

Recovery and Reentry Planning and Postaccident Operations

M.1.

N

Although reentry and recovery procedures are described, insufficient information is furnished regarding assignment of responsibility, criteria for reentry and details on the long term radiation and medical monitoring programs (IV.A.1., IV.B., IV.B.3., IV.C. and Appendix A of all CRERPs).

N.

Exercise and Drills

N.1.a.

N

The plan refers to the conducting of periodic exercises to evaluate the county's emergency response capabilities. However, a conflict exists between II.B.3.a. which calls for an annual exercise for the county and the State and Procedure 12 Section 3.2.1. in the Westchester, Orange and Rockland plans and Procedure 11 Section 3.2.1. in the Putnam County Plan, which call for

ElementRatingComment

a test every three years.

In addition, in the Orange County Plan cross reference Procedure 11. Section 3.2.1. should be changed to Procedure 12 Section 3.2.1. (II.B.3, II.B.4, Procedure 12 of Westchester, Rockland and Orange CRERPs and Procedure 11 of Putnam CRERP).

The plans do not state that the exercises shall be conducted as set forth in NRC and FEMA rules. It is suggested that this statement be included in the plans.

(II.B.3., II.B.4. and Procedure 11, Putnam CRERP; II.B.3., II.B.4. and Procedure 12, ORW CRERPs)

N.1.b.

N

The plans do not adequately address the evaluation criteria. There is no provision in the plans for the exercise to be conducted under various weather conditions or for unannounced exercises.

Procedure 12 in the Westchester, Orange and Rockland County plans and Procedure 11 in the Putnam County Plan, paragraph 3.2.4., refer to having qualified personnel serve as exercise observers. It is requested that the qualifications required to be an observer be listed.

Include the following cross references: Procedure 12 of the Orange, Rockland and Westchester CRERPs and Procedure 11 of the Putnam County CRERP, Sections 3.2.1. and 3.2.2.

(II.B.3., Procedure 11, Putnam CRERP; II.B.3., Procedure 12, ORW CRERPs)

N.2.a.

N

Provisions have been made for the monthly testing of communications systems within the county, with the State and surrounding counties and for annual testing of communications between the NFO and the State and county EOCs and field assessment teams. However, the plans do not contain specific procedures for conducting the tests. In addition, Procedure 12 of the Orange, Rockland and Westchester CRERP and Procedure 11 of the Putnam CRERP paragraph 3.3.2.2 should be cross referenced.

(II.B.3., II.B.4., and Procedure 11, Putnam CRERP; II.B.3., II.B.4., and Procedure 12, ORW CRERPs)

N.2.c.	N	<p>Provision has been made for a medical emergency drill to be conducted annually. However, it isn't specified whether the drill is to be performed as part of the annual exercise. If it is to be performed separately, it is recommended that a coordinated plan be submitted that includes step by step procedures that show how the drill is to be carried out.</p> <p>(II.B.3. and Procedure 11, Putnam CRERP; II.B.3. and Procedures 12, ORW CRERPs)</p>
N.2.d.	N	<p>Specify when the mechanism to implement the results of exercise and drills will be established. Discuss timetable for incorporating the results of RAC plan reviews, exercises, and drills into plan updates. There is no mention of the collection and analysis of sample media and provisions for recordkeeping in the discussion of exercises and drills.</p> <p>(II.B.3. and Procedure 11, Putnam CRERP; II.B.3. and Procedure 12, ORW CRERPs)</p>
N.3.a.	N	<p>The planning element has not been adequately addressed. The CRERPs present a sequence of events for a hypothetical radiological emergency. The CRERPs should include a plan for each exercise and drill that explains how they are to be carried out.</p> <p>(II.B.3.b. and Procedure 11, Putnam CRERP; II.B.3.b. and Procedure 12, ORW CRERPs)</p>
N.3.b.	N	See comments for N.3.a.
N.3.c.	N	See comments for N.3.a.
N.3.d.	N	See comments for N.3.a.
N.3.e.	N	See comments for N.3.a.
N.3.f.	N	See comments for N.3.a.
N.4.	N	<p>The plans do not describe the method by which the State and local governments will observe, evaluate, and critique the exercise.</p> <p>Discuss deadlines for incorporating results of formal critique evaluation into the CRERPs.</p>

		(II.B.3. and Procedure 11, Putnam CRERP; II.B.3. and Procedure 12, ORW CRERPs)
N.5.	N	Insufficient information has been furnished to determine whether means exist for evaluating observer and participant comments. The plans do not assign responsibility for implementing corrective actions. Management controls to ensure that corrective actions are implemented as a result of acceptance of observer comments were not discussed.
		(II.B.1., II.B.3. and Procedure 11, Putnam CRERP; II.B.1, II.B.3 and Procedure 12, ORW CRERPs)
0.		<u>Radiological Emergency Response Training</u>
0.1.	N	<p>The CRERPs do not have sufficient information to evaluate the planning element. The Training Lesson Plan Applicability Matrix (Procedure 13 of the Orange, Rockland and Westchester CRERP and Procedure 11 of the Putnam CRERP, Attachment 3) should list all emergency response agencies and training courses that cover the activities for which they are responsible.</p> <p>Detailed lesson plan outlines should be indicated for each of the lesson plans within Lesson Plan 4 (Procedure 13 of the Rockland, Orange and Westchester CRERP and Procedure 12 of the Putnam CRERP, Attachment 3).</p> <p>The present training status of emergency response personnel should be specified.</p> <p>A timetable for bringing training levels of emergency response personnel up to readiness levels should be furnished.</p> <p>Attachment 4 should include '82 list of courses instead of '81.</p> <p>Without having personnel assigned to specific duties one cannot determine: who needs the training by position, what training by position is necessary, and who will conduct training (Also see comments on element A.1.a. and A.2.a.)</p> <p>(II.B.5. and Procedure 12, Putnam CRERP; II.b.5. and Procedure 13, ORW CRERPs)</p>

<u>Element</u>	<u>Rating</u>	<u>Comment</u>
0.1.b.	N	<p>Inadequate where referenced. See comments for 0.1. Each off-site response organization shall participate in and receive training. Where mutual aid agreements exist between local agencies such as fire, police and ambulance/rescue, the training shall also be offered to the other departments who are members of the mutual aid district.</p> <p>(II.B.5. and Procedure 12, Putnam CRERP; II.B.5. and Procedure 13, ORW CRERPs)</p>
0.4.	—	<p>Each organization shall establish a training program for instructing and qualifying personnel who will implement radiological emergency response plans. The specialized initial training and periodic retraining programs (including the scope, nature and frequency) shall be provided in the following categories:</p>
0.4.a.	N	<p>Inadequate where referenced for directors or coordinators of the response organizations. See comment for 0.1. (II.B.5. and Procedure 12, Putnam CRERP, II.B.5. and Procedure 13, ORW CRERPs).</p>
0.4.b.	N	<p>Inadequate where referenced for personnel responsible for accident assessment. See comment for 0.1. (II.B.5. and Procedure 12, Putnam CRERP; II.B.5. and Procedure 13, ORW CRERPs)</p>
0.4.c.	N	<p>Inadequate where referenced for radiological monitoring teams and radiological analysis personnel. See comments on element 0.1.</p> <p>(II.B.5. and Procedure 12, Putnam CRERP; II.B.5., Appendix J. and Procedure 13, ORW CRERPs).</p>
0.4.d.	N	<p>Inadequate where referenced for police, security and fire fighting personnel. See comment on element 0.1.</p> <p>(II.B.5. and Procedure 12, Putnam CRERP; II.B.5. and Procedure 13, ORW CRERPs)</p>
0.4.f.	N	<p>Inadequate where referenced for first aid and rescue personnel. See comment for element 0.1. (II.B.5. and Procedure 12, Putnam CRERP; III.B.5. and Procedure 13 ORW CRERPs).</p>
0.4.g.	N	<p>Inadequate where referenced for local support services personnel including Civil Defense/Emergency Services personnel. See comment on element 0.1.</p>

<u>Element</u>	<u>Rating</u>	<u>Comment</u>
		(II.B.5. and Procedure 12, Putnam CRERP; II.B.5. and Procedure 13, ORW CRERPs).
0.4.h.	N	Inadequate where referenced for medical support personnel. See comment on element 0.1. (II.B.5. and Procedure 12, Putnam CRERP; II.B.5. and Procedure 13, ORW CRERPs).
0.4.j.	N	Inadequate where referenced for personnel responsible for transmission of emergency information and instructions. See Comment for element 0.1. (II.B.5. and Procedure 12, Putnam CRERP; II.B.5. and Procedure 13, ORW CRERPs).
0.5.	N	The CRERPs do not adequately provide for the initial and annual retraining of personnel with emergency response responsibilities. See comment for element 0.1.
		(II.B.5 and Procedure 12, Putnam CRERP; II.B.5. and Procedure 13, ORW CRERPs)
P.		<u>Responsibility for the Planning Effort:</u> <u>Development, Periodic Review and Distribution of</u> <u>Emergency Plans</u>
P.1.	N	The training of individuals responsible for the planning effort was not addressed where cross referenced in the Westchester, Orange and Rockland CRERP. (II.B.5. and Procedure 13)
		In the Putnam CRERP, reference is made to the training of individuals involved in the planning effort. However, the plan does not contain a program for training individuals. (II.B.5. and Procedure 12).
P.2.	N	Although the County official responsible for the administration of the CRERP is stated in each plan, it is unclear whether or not he has authority for radiological emergency response planning (II.B.1., and Procedure 10, Putnam CRERP; II.B.1. and Procedure 11, ORW CRERPs).
P.3.	N	Each CRERP designated a County official, by title, who is in charge of emergency planning coordination (II.B.1. and Procedure 11, ORW CRERPs).
		Who, by title, is responsible in each agency of the county for maintaining and updating emergency plans (i.e. telephone lists)?



<u>Element</u>	<u>Rating</u>	<u>Comment</u>
P.4.	A	The CRERP and agreement updates and reviews are addressed in each plan (II.B.1. and Procedure 10, Putnam CRERP, II.B. and Procedure 11, ORW CRERPs).
P.5.	A	Forwarding of CRERPs and approved changes are adequately addressed. The marking requirement has also been addressed. (II.B.1. and Procedure 10, Putnam CRERP; II.B.1. and Procedure 11, ORW CRERPs)
P.6.	N	The CRERPs do not contain a detailed listing of supporting plans and their sources. (III.B., all CRERPs)
P.7.	A	The CRERPs contain, as appendixes, by title, procedures required to implement the plans. However, the procedures themselves, in many cases are either incomplete or inadequate as discussed in preceeding comments. (Table of Contents, Volume 2, all CRERPs)
P.8.	N	The CRERPs contain specific tables of contents. However, the plans are inadequately cross referenced as stated in many of the preceeding comments (Table of Contents; Cross Reference/Index of all CRERPs).
P.10.	N	The CRERPs simply restate the wording in the NUREG 0654/FEMA REP-1 criteria element, rather than describing the method for accomplishing this criterion.  (Procedure 10, Putnam CRERP, Procedure 11, ORW CRERPs)



# POST EXERCISE ASSESSMENT



Exercise of the New York State and  
Westchester, Putnam, Rockland and Orange  
Counties Radiological Emergency Plans for  
**INDIAN POINT NUCLEAR GENERATING STATION**

**MAY 27, 1982**

Federal Emergency Management Agency  
Region 2

FRANK P. PETRONE  
Regional Director

26 FEDERAL PLAZA  
New York, N.Y. 10278

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## I. INTRODUCTION

### 1. FEMA Responsibilities

On December 7, 1979, the President directed the Federal Emergency Management Agency (FEMA) to assume lead responsibility for all off-site nuclear planning and response.

FEMA's immediate basic responsibilities in Fixed Nuclear Facility Radiological Emergency Planning include:

1. Taking the lead in off-site emergency planning and review and evaluation of state and local government emergency plans for adequacy.
2. Determining whether the plans can be implemented, based upon observation and evaluation of exercises conducted in these jurisdictions.
3. Coordinating the activities of other involved Federal and volunteer agencies:
  - Nuclear Regulatory Commission (NRC)
  - Environmental Protection Agency (EPA)
  - Department of Energy (DOE)
  - Department of Health and Human Services (HHS)
  - Department of Transportation (DOT)
  - Department of Agriculture (USDA)
  - National Oceanic and Atmospheric Administration (NOAA)
  - Food and Drug Administration (FDA)

Representatives of these agencies serve as members of the Regional Assistance Committee (RAC), which is chaired by FEMA.

Formal submission of emergency plans to the RAC by the states and involved local jurisdictions is, in each case, followed closely by evaluation of those plans and an exercise and critique. A public meeting is held to acquaint the citizenry with the contents of the plans, answer questions about them, and receive suggestions on the plans.

This report is an evaluation of the first joint exercise at the Indian Point site, which involved participation by state, local, and Indian Point Unit 3 personnel to determine whether the radiological emergency plans can be implemented.

## 2. Exercise Event

A radiological emergency exercise was conducted on March 3, 1982, between the hours of 6:00 a.m. (EST) and approximately 5:00 p.m., to assess the adequacy of radiological emergency response plans for New York State, Westchester County, Rockland County, Orange County, and Putnam County, and to test the state and local capabilities to protect the public in the event of a radiological emergency involving the Indian Point Nuclear Power Station (IPNPS), operated by the Power Authority of the State of New York (PASNY) and located near Buchanan, New York.

## 3. Exercise Objective

The off-site exercise objective was to demonstrate the response and capability of the state and local governments according to existing plans, and to demonstrate the emergency response capabilities that would be brought into play in the event of a radiological emergency at the IPNPS-3 that affected off-site areas.

The key state and local support capabilities, as presented in the radiological emergency response plans that were to be tested, include:

- The adequacy and capability of implementation of the New York State, Westchester, Rockland, Orange, and Putnam counties and the Indian Point radiological emergency plans.
- The capability of the state, counties, and Indian Point to notify and activate emergency response personnel.
- The capability of the counties and the state to alert and notify the affected permanent and transient population within the plume exposure emergency planning zone (EPZ) of an incident at the Indian Point site and to provide follow-up information as required via sirens and the emergency broadcast system (EBS).
- The capability of the normal and back-up emergency communications among Westchester, Rockland, Orange, and Putnam counties, the state, and Indian Point, including the radiological emergency communications system (RECS) hot line.
- The adequacy of the staffing and activation, as appropriate, of emergency response facilities, and the adequacy of space and habitability for management of radiological emergency at:

Indian Point 3 Control Room (CR)  
 Indian Point 3 Technical Support Center (TSC)  
 Indian Point 3 Operational Support Center (OSC)  
 Indian Point Emergency Operations Facility (EOF)  
 State Emergency Operations Center (EOC)  
 ODP Southern District EOC  
 Westchester County EOC  
 Rockland County EOC  
 Orange County EOC  
 Putnam County EOC  
 Emergency News Center

- The adequacy and competency of the state, Westchester, Rockland, Orange, and Putnam counties, and Indian Point 3 staff to operate the emergency response facilities.
- The ability of key emergency personnel at Indian Point and at all levels of government to initiate and coordinate timely and effective decisions with respect to a radiological emergency.
- The ability of Indian Point 3 staff to activate the special news center in conjunction with state and county agencies and to provide for periodic release of public information and for rumor control.
- The counties' ability to deploy radiological field monitors and to receive and assess meteorological and radiological data from both county and utility field teams in accordance with their respective radiological emergency plans.
- The ability of Indian Point 3 and the state to calculate dose projections, compare projections to protective action guides (PAGs) and recommend appropriate protective actions.
- The capability of the emergency response organizations for the state and Westchester, Rockland, Orange, and Putnam counties to make decisions and to implement appropriate protective action options. These options include sheltering, (simulated) evacuation of on-site and off-site areas, informing the public on the development of the accident, identification of and provision for special populations, activation of reception and congregate care facilities, and control of ingestion exposure.
- The capability of off-site emergency response personnel to implement access control procedures.
- The ability of Indian Point and Westchester, Rockland, Orange, and Putnam counties to coordinate, control, and deploy radiological monitoring teams via the respective field communications systems.
- Methods for radiation exposure control, including distribution of dosimeters and maintenance of individual worker exposure records.

- Ability to use decontamination facilities and to limit exposure of emergency workers.
- Capability for providing medical support to radiation casualties.
- Capability for implementing procedures for (simulated) reentry, damage assessment, and recovery.

#### 4. Participating State and Local Facilities and Organizations

The principal operating area for the exercise was the plume exposure emergency planning zone around the Indian Point site, approximately a 10-mile radius around the power plant. Organizations and facilities that were designated to participate in the exercise are listed below; during the exercise some of the organizations may have had minimal involvement.

##### New York State Facilities

###### EOCs

Albany, New York

Office of Disaster Preparedness  
Southern District  
Poughkeepsie, New York

###### Personnel Monitoring Centers

Hawthorne, New York

Monroe, New York

##### County Facilities

###### EOCs

Westchester County, White Plains,  
New York  
Rockland County, Pomona, New York  
Orange County, Goshen, New York  
Putnam County, Carmel, New York  
Dutchess County,\* Poughkeepsie,  
New York

###### Reception/Congregate Care Centers

Westchester County  
Rockland County  
Orange County  
Dutchess County

###### Hospitals

Westchester County  
o Peekskill Hospital  
  
Orange County  
o Cornwall Hospital  
o Middletown Hospital

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\*Dutchess County EOC was activated to provide support to the plume exposure EPZ counties, such as reception/congregate care centers, monitoring and decontamination of "evacuees," and traffic control.

Indian Point Facilities

Indian Point EOF  
Emergency News Center

Buchanan, New York  
Verplanck, New York

New York State

Disaster Preparedness Commission  
Department of Health  
DMNA/Office of Disaster Preparedness  
Department of Transportation  
Division of State Police  
Department of Agriculture Markets  
Department of Environmental Conservation  
State Energy Office  
Department of Social Services  
Department of State, Fire Prevention and Control  
Department of Education  
Office of General Services  
Department of Labor  
Department of Parks, Recreation and Historic Preservation  
Department of Mental Health  
Department of Correction  
Department of Criminal Justice  
Thruway Authority

CountiesWestchester, Rockland, Orange, and Putnam

County Executive  
Civil Defense Director  
Commissioner of Public Safety  
Commissioner of Health  
Commissioner of Hospitals  
Commissioner of Public Works  
Director, Department of Transportation  
Commissioner of Social Services  
Fire Coordinator  
Public Information Officer  
Radiological Health Specialist  
Sheriff  
Volunteer Ambulance Disaster Coordinator  
Superintendent of Highways

Private Agencies and Volunteers

American Red Cross  
RACES (Radio Amateur Civil Emergency Service)  
Conrail  
MTA (Metropolitan Transit Authority)  
Amtrak  
Bus Companies



## 5. Exercise Critique

A preliminary oral critique of the March 3 exercise was conducted at 11:00 a.m., March 6, 1982, at Cortland Civic Center, New York.

## 6. RAC Evaluation Objectives

General objectives of the Regional Assistance Committee (RAC) for the operational phase of the plans were to observe and evaluate the exercise, focusing on the ten functional areas listed and briefly described below. These ten functional areas include approximately 75 specific criteria taken directly from Section II of NUREG-0654-FEMA REP-1, Rev. 1, which is the basic planning document on which the state and local plans, and also the criteria for observing and evaluating the exercise, are based.

### Functional areas:

- Emergency Operations Facilities and Resources.
- Alerting and Mobilization of Officials and Staff.
- Emergency Operations Management.
- Public Alerting and Notification.
- Public and Media Relations.
- Accident Assessment.
- Actions to Protect the Public.
- Health, Medical, and Exposure Control Measures.
- Recovery and Reentry Operations.
- Relevance of the Exercise Experience.

## 7. Federal Observer Team

A 50-member off-site Federal Observer Team was established by the FEMA Region II RAC Chairman for observing the response at Indian Point. Observers included:

Observer	Agency	Location/Function
F. Petrone	FEMA (Regional Director)	Oversight Responsibility
R. Kowieski	FEMA (RAC Chairman)	Oversight Responsibility
S. McIntosh	FEMA	State EOC/Team Leader
N. Steinlauf	FEMA	State EOC
J. Feldman	EPA	State EOC/Accident Assessment
M. Adler	DOE	State EOC/P.I.O.
J. Johnson	FEMA	S. District EOC/Team Leader
W. Pierson	FEMA	Indian Point EOF/Team Leader
B. Bores	NRC	Indian Point EOF
J. Harrison	NOAA	Indian Point EOF
M. Jackson	FEMA	News Media Center/P.I.O.
L. Dillon	FEMA	News Media Center/P.I.O.
S. Glass	FEMA	Westchester EOC/Advisor
G. Connolly	FEMA	Westchester EOC/Team Leader
R. Bernacki	FDA	Westchester EOC/Accident Assessment
J. Kelly	FEMA	Westchester EOC/Communications
K. Lawrence	FEMA	Westchester EOC/P.I.O.
D. Tinsman	DOT, USCG	Westchester Co./Evacuation
J. Bravo	FEMA	Westchester Co./Evacuation
F. Fishman	FEMA	Westchester Co./Evacuation
G. Rodriguez	FEMA	Westchester Co./Congregate Care
W. Gasper	ANL*	Westchester Co./Radiological Monitoring
J. Keller	INEL**	Westchester Co./Radiological Monitoring
R. Jones	FEMA	Westchester Co./Medical
P. McIntire	FEMA	Putnam EOC/Advisor
T. Maynard	FEMA	Putnam EOC/Team Leader
K. Gant	DOE	Putnam EOC/Accident Assessment
H. Rand	FEMA	Putnam EOC/P.I.O.
T. Holliday	FEMA	Putnam EOC/Communications
J. O'Sullivan	FEMA	Putnam Co./Evacuation
M. Kaplan	ANL*	Putnam Co./Evacuation
C. Nichols	INEL**	Putnam Co./Radiological Monitoring
J. Bratis	ANL*	Putnam Co./Radiological Monitoring
J. Picciano	FEMA	Rockland EOC/Team Leader
M. Goodkind	ANL*	Rockland EOC/Accident Assessment
R. Garelik	FEMA	Rockland EOC/Communications
G. Seidenfeld	FEMA	Rockland EOC/P.I.O.
P. Lutz	DOT, USCG	Rockland Co./Evacuation
R. Hellriegel	FEMA	Rockland Co./Evacuation
C. Malina	USDA	Rockland Co./Congregate Care/PMC
R. Skinner	INEL**	Rockland Co./Radiological Monitoring
J. Tatar	ANL*	Orange Co./Radiological Monitoring
R. Reynolds	FEMA	Orange Co./Team Leader
E. Levine	ANL*	Orange Co./Accident Assessment
A. Davis	FEMA	Orange Co./Communications
C. Carlton	FEMA	Orange Co./P.I.O.
H. Fish	DOE	Orange Co./Evacuation

Observer	Agency	Location/Function
P. Weberg	FEMA	Orange Co./Evacuation
L. Hoffman	INEL**	Orange Co./Radiological Monitoring
L. Lewis	ANL*	Orange Co./Radiological Monitoring

\*Argonne National Laboratory (under contract to FEMA)

\*\*Idaho National Engineering Laboratory (under contract to FEMA)

In addition to the Federal Observer Team, utility's contractor personnel and visitors observed the exercise.

#### 8. Evaluation Criteria

Major functions witnessed by federal observers were evaluated in accordance with the following scheme:

- Capability outstanding: no deficiencies noted, no improvements necessary.
- Capability good: only minor deficiencies noted.
- Capability acceptable: deficiencies noted that limit effective performances.
- Capability weak: significant deficiencies noted.
- Capability lacking: response called for but not demonstrated.

#### 9. Remedial Action Procedures

Provided under Part IV of this report are evaluations and recommendations for remedial actions. These evaluations and recommendations are based on the applicable planning standards (from which the state and local plans were developed) and evaluation criteria set forth in Section II of NUREG-0654 FEMA REP-1, Rev. 1. Other recommendations are suggested that are not keyed to NUREG-0654, but which could improve operations.

In this report, recommendations are presented and are keyed to the state and local jurisdictions. State and local jurisdictions should submit to FEMA a description of the corrective measures they have taken and a schedule for the ones to be undertaken. If remedial actions cannot be instituted immediately, then a detailed schedule for implementing remedial actions must be provided to FEMA, including dates for completion.

The Regional Director of FEMA is responsible for certifying to the FEMA Associate Director, State and Local Programs and Support, Washington, D.C., that the deficiencies noted in the exercise have been corrected and that such corrections have been incorporated into the plan.

#### 10. Review and Approval Procedures

A state that seeks review and approval by FEMA of its plan and annexes submits an application for review and approval to the FEMA Regional Director of the region in which the state is located. The application, in the form of a letter from the Governor, or such other state official as the Governor may designate, is to contain one copy of the completed state plan with an indication that deficiencies have been corrected.

Upon receipt of a state plan, the Regional Director initiates the review process as described in 44 CFR Part 350, Federal Register, Volume 45, Number 123, Tuesday, June 24, 1980 (Review and Approval of State and Local Radiological Emergency Plans and Preparedness). After the Regional Assistance Committee (RAC) and the FEMA Regional staff have completed their review, including the evaluation of the supporting exercise and the public meeting required in proposed 44 CFR Part 350, the FEMA Regional Director will issue a report to FEMA Headquarters regarding the state and local government plans, procedures, and preparedness capabilities. This report will consist of a summary of the overall findings and determinations in respect to the procedures, training, resources, staffing levels, qualifications, and equipment availability. The FEMA Associate Director is to conduct such review of this report as deemed necessary prior to its being forwarded to the appropriate NRC licensing bodies.

## II. EXECUTIVE SUMMARY

A joint exercise of the emergency preparedness plans for the Indian Point site was held on March 3, 1982. The off-site exercise was observed by a team of 50 federal observers, who reported their findings to the Federal Emergency Management Agency (FEMA). Participating in the exercise were the owner of Indian Point Unit 3, Power Authority of the State of New York (PASNY), officials and agencies of the State of New York, and the counties of Westchester, Rockland, Orange, Putnam, and Dutchess.

Emergency response facilities observed by FEMA included:

- the Indian Point Emergency Operations Facility (EOF);
- the state Emergency Operations Center (EOC) in Albany;
- the state EOC in the Office of Disaster Preparedness, Southern District;
- the Westchester County EOC;
- the Rockland County EOC;
- the Orange County EOC;
- the Putnam County EOC;
- the Dutchess County EOC; and
- the Emergency News Center in Verplanck.

The Dutchess County EOC also chose to participate in the exercise, although it is not within the 10-mile emergency planning zone.

Evaluators also observed procedures at personnel monitoring centers, at reception/congregate care centers, and at hospitals where simulated accident victims were treated.

Over 50 state, local, and private agencies and departments participated in the exercise.

### 1. Overview

During the review of the exercise, each of the ten functional areas described in section I.6 were evaluated for the state operations and each of the four municipal counties' operations (except Dutchess). At the state level, all observed functions were carried out well; only minor deficiencies were noted. Among the four counties, nine functional areas were evaluated

as weak. These deficiencies, positive areas of performance, and corrective recommendations are detailed in the summaries provided below and in the following pages.

Several concerns were identified during the exercise that influenced the evaluation of that element. Some of these concerns are identified below.

- The primary means for alerting the populace to a serious radiological emergency will be a system of sirens. This system is now being installed and is to be tested by the licensees. The existing sirens were activated during the exercise, but some of the units did not sound or were inaudible to local residents. The backup system of notification by sound trucks (police/fire trucks equipped with public address systems) was not used.
- Rockland County's police, fire and volunteer ambulance corps initially chose not to participate in the exercise, claiming that inadequate training had been provided. During the exercise these groups participated, but to a minimal extent, thereby reducing the training benefit of the exercise and the ability to fully evaluate the county's preparedness.
- The effectiveness of the existing radiological public education program should be strengthened. Currently, public education on radiological emergency procedures relies on distribution of pamphlets to residents. Concern remains as to the level of public awareness and response. These concerns include the public's understanding of the concept and geographical boundaries of planning zones. Also, the level of awareness of the non English-speaking residents living in the area should be analyzed.

## 2. Summary: State Activities

Emergency Operations Facilities and Resources. Facilities and resources in the state EOCs in Albany and Poughkeepsie were good. Displays were well placed and promptly updated. Some additional plotting of dose calculations is recommended. The communications between state and local accident assessment teams were weak. Internal communications and public information arrangements were good.

Alerting and Mobilization of Officials and Staff. All mobilization activities functioned well.

Emergency Operations Management. Management of the response organization was well demonstrated. Increased flow of information in both directions between agencies and decision-makers would be beneficial.

Public and Media Relations. At the state EOC in Albany, press facilities and media briefings were good. At the Joint Media Center, the state PIO staff demonstrated good capability.

Accident Assessment. Accident assessment capabilities were good. However, the state did not demonstrate their own independent field monitoring capability. Some additional computational aids would be of value.

Recovery and Reentry. Short-term and long-term recovery and reentry procedures appeared to be good.

Relevance of the Exercise. Participants felt that the exercise was beneficial for training and experience. Use of simulated meteorology and the rapid pace of scenario events detracted somewhat from the realism of the exercise.

### 3. Summary: Indian Point Emergency Operating Facility (EOF)

Emergency Operations Facilities and Resources. The EOF in Chanan had acceptable capabilities; however, space was limited and inconveniently arranged. Internal and external communication systems could be improved.

Alerting and Mobilization of Officials and Staff. Staffing and notification was acceptable. Additional feedback from the state and counties to the EOF would be of benefit.

Emergency Operations Management. Management of the response was good for state representatives and acceptable for the county representatives. More involvement of the state and county in decision making is recommended.

Accident Assessment. Capabilities in this area were acceptable. Computing capability for rapid response is recommended. Improvement is needed in use of monitoring data.

Relevance of the Experience. The exercise was felt to be beneficial to the participants.



#### 4. Summary: Westchester County

Emergency Operations Facilities and Resources. The facilities at the Westchester County EOC were good overall. The working space was small but adequate because of the layout. Communication, internal and external, was good. Backup RACES communication capability was demonstrated. Displays and maps were well organized and security was good.

Alerting and Mobilization of Officials and Staff. Westchester County demonstrated a good capability for alerting and mobilizing officials and staff in a timely manner. This resulted from good communications and from adequate procedures and backup personnel. The capability for 24-hour alerting and 24 hour a day operation was good. There is some concern over the availability of enough personnel to adequately staff the reception centers if an actual emergency started on a weekend.

Emergency Operations Management. Emergency operations management, headed by the County Executive, was very good, and demonstrated well-defined leadership at several levels. The staff was kept well informed through periodic briefings by the leaders.

Public Alerting and Notification. Public alerting and notification actions were weak, due primarily to the unsatisfactory performance of the siren system. Lack of understanding by some of the populace of the meaning of the sirens; lack of knowledge of the emergency response planning areas (ERPA); and lack of adequate notification of transients were observed. The procedures for broadcasting EBS messages were very good; EBS messages were well written and timely. Activation of EBS station and issuance of first EBS message were excellent.

Public and Media Relations. The public and media relation actions were acceptable, however, public education programs and rumor control procedures need improvement. Public education pamphlets were mailed and received by rate payers, but apparently were not effective, because the public as a whole seemed to have a general lack of knowledge of radiological emergency preparedness. People who do not pay utility bills directly, such as some tenants, may not have received the pamphlets. Emergency information was not posted, nor was it printed in the telephone book.

Accident Assessment. Accident assessment capabilities were evaluated as acceptable but some deficiencies are noted. The radiological assessment

instrumentation was good, except that the instrument used for measuring radiiodine should be equipped with a silver-containing air filter. Procedures for quickly measuring contamination in liquid samples are needed. Projected dose calculations were good, and field monitoring teams were well trained and capable. The ability to recommend protective actions based on the protective action guidelines was well demonstrated.

Actions to Protect the Public. Overall, the Westchester County personnel demonstrated an acceptable capability to protect the public by implementing protective measures. Improvements are needed in the details of the procedures for relocating residents who do not have private vehicles, in protecting mobility-impaired persons, and in dealing with potential impediments to evacuation.

Health, Medical, and Exposure Control. Most of the health, medical, and exposure control capabilities were weak. The 24-hour capability to determine exposures of emergency workers was weak because of instrumentation problems, while decontamination procedures were weak primarily because of a lack of adequate waste disposal, especially for liquid wastes. Control of access to evacuated areas was good, and maintenance of dose records was good. Action levels that require decontamination procedures were well established.

Recovery and Reentry Operations. Simulated reentry operations made it appear that the capability to recover and reenter exists.

Relevance of the Exercise Experience. Participants felt that the exercise was a good learning experience.

##### 5. Summary: Rockland County

Emergency Operations Facilities and Resources. The facilities at the Rockland County EOC were weak. Significant deficiencies were noted relating to external and internal communications, leadership in the EOC, and space allotment.

Alerting and Mobilization of Officials and Staff. The capability for alerting and mobilization of staff from the EOC was weak. Deficiencies were noted related to the lack of telephone lines and staff to perform initial calling. Backup staff was also lacking. Overall improvement in communications is needed.

Emergency Operations Management. Organizational control, leadership, and decision making were acceptable. However, effective management of the EOC by one individual was not demonstrated. More familiarity is needed with response procedures.

Public Alerting and Notification. Initial notification of the public was weak, primarily because of siren system malfunction. Activation of the EBS station and issuance of the first EBS message were well coordinated. EBS messages were professionally coordinated, cleared, and issued.

Public and Media Relations. Media capabilities were acceptable. However, public awareness of a public education brochure was low. Rumor control needs to be strengthened. There may be a need to translate the brochure in order to reach non-English speaking individuals.

Accident Assessment. Accident assessment capabilities were weak. Poor communication systems contributed to problems in this area. Field monitoring teams need more training with their instruments. The role of the county representative at the EOC needs to be better defined.

Actions to Protect the Public. Capabilities for protection of the public were good. Evacuation and decontamination were well demonstrated.

Health, Medical, and Exposure Control Measures. These activities were well demonstrated. Facilities were good and well staffed.

Recovery and Reentry Operations. The capability of the EOC for recovery and reentry was good, as demonstrated by simulation. Activities in the field were not observed, due to the shortness of the scenario.

Relevance of the Experience. Lack of involvement by some local agencies reduced the effectiveness of the exercise. The inclusion of a simulated wind shift in the scenario was good, but the county's computer analysis system was not used during the exercise.

The exercise identified areas that would benefit from additional training and better equipment.

## 6. Summary: Orange County

Emergency Operations Facilities and Resources. The facilities at the Orange County Emergency Operating Center (EOC) were evaluated as acceptable.

Some deficiencies were noted, particularly with the communication system linking Orange County with the other counties. Internal communications systems could also be improved. Maps and displays were generally good. Acceptable security was provided.

Alerting and Mobilization of Officials and Staff. The overall capability for alerting and mobilization was evaluated as weak, based upon a deficiency in the key element of 24-hour shift change capability. Backup personnel did not demonstrate sufficient knowledge in all essential areas. The remaining elements in this category were in general adequately demonstrated, although poor communications between agencies in the EOC led to difficulties in establishing access control points.

Emergency Operations Management. Organizational control, leadership, decision making and support by officials were acceptable. Performance was affected by internal communications in the EOC, which depended upon hand-carrying messages between rooms in the facility. Briefing of agencies was sporadic and written updates were not always available.

Reception centers, congregate care facilities, and the decontamination center were well staffed and organized.

Public Alerting and Notification. Public alerting and notification were weak, due primarily to the unsatisfactory performance of the siren system. The EBS was activated in a timely manner. The first EBS message was coordinated with the siren sounding. Procedures for issuing EBS messages were good.

Public and Media Relations. The capability for dealing with the media was good. Rumor control needs to be strengthened. Public education programs also should be strengthened.

Accident Assessment. Capabilities for accident assessment were rated as acceptable. Deficiencies noted included the failure of the field monitoring teams to carry full instrumentation.

Actions to Protect the Public. Means for sheltering or evacuating the public were evaluated as good. All observed facilities were well staffed. Lack of data on radioiodine levels in the field were believed to affect decisions for public protection.

Health, Medical, and Exposure Control Measures. Procedures for medical treatment and exposure control were evaluated as acceptable. Deficiencies noted included the lack of provision for disposal of contaminated wastes. Hospital personnel need additional training. Permanent dose recording instruments were not available for emergency workers.

Recovery and Reentry. Recovery and reentry procedures were evaluated as weak. The significant deficiency related to the lack of full simulation by participants.

Relevance of the Experience. The exercise seemed to provide an acceptable level of experience. One drawback noted was that some response teams were not fully tested, while others were tested on skills that were considered routine.

#### 7. Summary: Putnam County

Emergency Operations Facilities and Resources. The working space in the Putnam County EOC was cramped, which resulted in some minor discomfort to the staff. The overall functioning of the EOC was good in spite of the small size, because the management was good. Communication systems were good, and had good backup.

Alerting and Mobilization of Officials and Staff. Putnam County demonstrated an acceptable capability for alerting and mobilizing officials and staff. The procedures used would have been effective at any time during the day or night, and resulted in a prompt and timely activation of the EOC and field monitoring teams. A capability for continuous operations 24 hours per day was well demonstrated by executing a shift change and by exhibiting lists of backup personnel. This shift change revealed that two key people, the CD Director and the radiological defense (RADEF) officer, do not have adequate backup. An emergency generator was not available in the event of power failure.

Emergency Operations Management. The management of the Putnam County EOC was very good and was well supported by elected officials. Many specific organizations had well-defined roles and demonstrated good performance. Leadership was excellent and support by the RACES organization was excellent.

Public Alerting and Notification. Public alerting and notification were weak, due primarily to the unsatisfactory performance of the siren system. Activation of the EBS station and issuance of first EBS message were good. Other EBS messages were cleared and issued on a timely basis. Some route alerting by police and fire vehicles was simulated but no PA announcements were made. Deficiencies were noted in the ability to notify the transient population.

Public and Media Relations. The capability for public and media relations in Putnam County was acceptable overall. Public education brochures were mailed to the public, and public training courses were given by the fire department and RACES personnel. Nevertheless, there appears to be a need for additional education to help the public understand protective actions and ERPA zones. The PIO officer had good access to all information, and prepared timely and appropriate releases. There was no evidence of a coordinated effort to identify and control rumors.

Accident Assessment. Accident assessment capabilities were evaluated as acceptable; however, some deficiencies were noted. Initial projections of radiological exposure were made independently in a timely manner and confirmed the utility projections. Field monitoring teams were promptly deployed, and were very competent. The instrumentation for whole body gamma ray was good. However, there was no capability for measuring radioiodine. Silver-loaded filters are needed to provide capability for measuring radioiodine.

Actions to Protect the Public. Putnam County demonstrated a good capability to protect the public. Roadblocks were set up promptly. Orders were given in a timely manner for the actions to simulate sheltering and then evacuation. A bus load of students was evacuated (in actuality) to the congregate care center in Dutchess County. This was well done. The congregate care centers were well located, well staffed, and well equipped. Their procedures were good; however, the radiation monitoring personnel could benefit from additional training.

Health, Medical, and Exposure Control. Overall, the health, medical, and exposure control actions were acceptable, with the exception of the procedures for ultimate disposal of contaminated liquids. Direct reading



dosimeters supplied to emergency workers had appropriate ranges and sensitivities. Readings were made and recorded frequently, and the results reported by radio to the EOC. No permanent-record dosimeters were provided. Procedures for approval of exposure of emergency workers in excess of protection action guides need to be clarified. Action levels for decontamination procedures were known.

Recovery and Reentry Operations. Reentry operations were demonstrated by simulation only. An acceptable capability for reentry and recovery appears to exist.

Relevance of the Exercise Experience. There was unanimous agreement that the exercise was very beneficial to the participants, all of whom took the exercise very seriously and performed as if the power plant accident actually occurred.



### III. EXERCISE SCENARIO

The scenario provided a simulated series of events on-site that resulted in all four classes of emergency conditions being declared. In turn, these conditions triggered off-site response actions (or simulations).

An overview of the sequence of emergency conditions, major events, and their approximate times of occurrence is summarized below.

<u>EVENT</u>	<u>TIME (EST)</u>
Notification of unusual event	735
Notification of alert	815
District Office begins staffing	830
Notification of site-area emergency	906
Counties activate all emergency workers	915
Activate emergency news center	920
Notice to Brewster congregate care center	1002
Sirens activated	1012
EBS message aired	1015
General emergency declared	1025
Reactor shuts down automatically	1030
Brewster congregate care center functional	1030
Sheltering of selected ERPAS ordered	1055
State emergency declared	1134
EBS message of general emergency	1150
Evacuation ordered for ERPA 16, 18	1153
Evacuation ordered for ERPA 1, 2, 7, 8 & 44	1200
Wind shift	1215
Sheltering ordered for ERPA 24, 26, 45, 46	1215
Downgrade to site area emergency	1509
Simulate elapse of 3 days	
Implement recovery procedures	1558
Exercise terminated	1615

The timetable of exercise events was for the most part withheld from off-site participants. However, the exercise date and the general time of the first exercise event was known, since demonstrations of response functions using volunteers require some advance administrative preparations, such as time off from work, etc.

#### IV. EVALUATIONS AND RECOMMENDATIONS

##### 1. State

###### Emergency Operations Facilities and Resources

EOC facilities at Albany and at the Southern District in Poughkeepsie were good, with only minor deficiencies. Displays were well placed and frequently updated; however, additional maps are needed in the Albany EOC to show data such as populations in emergency response planning areas (ERPAs) and the location of county field sampling points.

The communications between state and local accident assessment teams were weak. Internal communications were good. Public information arrangements were also good.

###### Recommendations:

- Communications systems between the state EOCs and other EOCs should be improved. (Reference NUREG-0654, II.F.)
- Additional maps for displaying populations within ERPAs and field sampling locations should be provided in the Albany EOC. (Reference NUREG-0654, J.10.a)

###### Alerting and Mobilization of Officials and Staff

The procedures and actions for alerting and mobilization of officials and staff were good. State EOCs were promptly staffed, and 24-hour response capability was demonstrated. RACES operators in Albany were well prepared for providing assistance in notifying emergency personnel. At the Southern District, computerized calling of emergency workers was a good feature.

###### Emergency Operations Management

Organization, leadership, and decision making were good at the EOCs. Procedures and authority for requesting federal assistance were also good. However, it appeared that there was not enough feedback to agency representatives from the decision makers.

Recommendation:

- State support agencies should be given more involvement in the exercise.

Public Alerting and Notification

These functions were not observed at the state EOCs.

Public and Media Relations

At the Albany EOC press facilities, media briefings, and news releases were good. The media spokesperson performed very well; however, some press questions regarding dose rates were not answered immediately. At Joint Media Center, state PIOs and staff demonstrated a high level of ability. The state is committed to coordinating a joint number system for support of rumor control during an actual emergency. A review of county EBS messages and news releases indicates that in a limited number of instances information in news releases more properly should have been contained in EBS messages. This occurrence could adversely effect overall PIO operations.

Recommendations:

- In conjunction with county PIOs, criteria should be developed to determine what type of information will be issued via EBS and what type via news releases.
- Procedures for quickly activating rumor-control telephone numbers and procedures should be formalized.

Accident Assessment

Accident assessment procedures were good overall. More plotting and display of dose calculations and field data would be beneficial for decision making purposes. The state did not demonstrate their own independent field monitoring capability. The field data reported by the county were not sufficient for confirmation of dose projections. Lack of computing capability slowed dose calculations; however, procedures for calculating doses were adequate.

Recommendation:

- Additional calculating equipment should be considered to expedite dose calculations.
- The state may wish to consider its own field monitoring capability which would allow the state to make an independent accident assessment.

Actions to Protect the Public

Sheltering and evacuation procedures were not observed at the state EOCs.

Health, Medical, and Exposure Control Measures

These activities were not observed at the state EOCs.

Recovery and Reentry

Short-range recovery and reentry procedures appeared to be adequate. It was more difficult to assess the value of the longer-range planning described by the state. Consideration has been given to long-term environmental effects.

Relevance of the Exercise Experience

Participants felt that the exercise was beneficial for training and for gaining more familiarity with the emergency plan. The use of simulated meteorology reduced the realism of the exercise. Some participants also felt the rapid pace of events in the scenario was not realistic. It was also noted that winter-time exercises greatly reduced the role of agricultural agencies.

## 2. Emergency Operating Facility (EOF)

### Emergency Operations Facility and Resources

The Emergency Operating Facility (EOF) in Buchanan, New York, was evaluated as acceptable, with deficiencies noted that would limit effective performance.

Space allotted to the EOF was considered insufficient, and the two-level structure was inconvenient. The communications system in the EOF also needed improvement. Backup telephone lines are needed for the state and counties. The audible intercom system was felt to be detrimental to operations. Internal communications need to be improved to reduce reliance on hand-written messages. Although the REC line to the EOCs allowed good contact, little feedback was observed from the EOCs to the EOF.

Displays and status updates were adequate but little information was displayed on state and county actions.

#### Recommendations:

- More space is needed for effective display of information in the EOF, and a single-floor area would ease communications.
- The communications system needs improvement, and backup telephone lines should be available (Reference NUREG-0654, II.F)

### Alerting and Mobilization of Officials and Staff

Staffing, 24-hour response capability, and alerting capability were evaluated as acceptable, with deficiencies listed below that limited effective performance.

The state and county responses were acceptable.

Feedback of information from the state and counties to the EOF was insufficient. Information on the state's evacuation efforts in response to the utility recommendations was delayed.

Backup staff capability was adequately demonstrated.

Recommendation:

- Improvement is needed in the flow of information back to the EOF from state and local response organizations. (Reference NUREG-0654, II.F)

Emergency Operations Management

The organization, leadership, and decision-making capabilities were evaluated as good for the state with some minor deficiencies, and acceptable for the counties, with deficiencies noted that limited effective performance. More definition of the county representatives' roles at the EOF was needed. Good briefings were held by the utility director. Utility functions were performed very smoothly.

Closer contact was needed between engineering staff at the EOF and at the technical support center to ensure timely and accurate information exchange. Also, state and county representatives should have been made aware of the basis for RECs messages.

Recommendations:

- The role of county representatives at the EOF needs better definition. (Reference NUREG-0654, II.B.6)

Public Alerting and Notification

These activities were not observed at the EOF.

Public and Media Relations

These activities were not observed at the EOF other than that the utility public information officer functioned well in providing information to the media center.

Accident Assessment

Accident assessment capabilities were evaluated as acceptable, with deficiencies noted that limited effective performance.

Communication of field monitoring data to the EOF was erratic.

State representatives at the EOF communicated their dose calculations well to the state EOCs; however, integrated dose estimates were performed by the utility only.

Recommendation:

- Response time for analyzing changes in dose calculation parameters should be shortened. (Reference NUREG-0654, II.I.8)

Actions to Protect the Public

These activities were not observed at the EOF.

Health, Medical, and Exposure Control Measures

These activities were not observed at the EOF.

Recovery and Reentry Operations

These activities were not observed at the EOF.

Relevance of the Exercise Experience

The exercise was felt to be of benefit to the participants.



### 3. Westchester County

#### Emergency Operations

Overall, the facilities, resources, space, internal communications, displays, and security were good, and only minor deficiencies were noted.

The Westchester County emergency operating center (EOC) is located in the County Office Building, 148 Martine Avenue, White Plains, New York. The location in the sub-basement area provides excellent protection and security for the emergency workers.

The small working space in the EOC was adequate because it was divided into four work areas. Separate rooms are provided for radio communications, for the accident assessment function, and for management personnel. The fourth room was the large outer room. This contained work tables for the many agency participants and provides wall space to display maps, status boards, etc. Some of the observers considered this outer main room to be too crowded. One thought that the noise level was too high. All four of these rooms were well lighted and well ventilated.

The overall performance of the several communications systems was good. A dedicated executive hot line was used between state and local governments, with the exception of Orange County. The Orange County executive hot line was not functioning because of equipment problems. Backups for the system were a radio network, the commercial telephone, and the RACES systems.

The bulk of the communications from the EOC was sent by commercial telephone (notification, transmitting orders to county workers, etc.). Excess commercial telephone line capacity was demonstrated to be available. Backup for these calls relied heavily on the RACES system. The RACES organization provided a superb communications support.

Communications with federal agencies was adequate.

A need for better communications between the nuclear facility and Westchester EOC was identified. The plant data on release rates, meteorological conditions, etc., were not always complete. Some data bypassed the county representative at the EOF.

Internal communications within the EOC were good. For example, messages were promptly logged and distributed to the proper personnel; plant status, release data, and monitoring data were displayed and updated on a status board; and periodic briefings kept the entire staff well informed.

Displays and maps in the EOC were well organized in general; however, the population distribution map was available at the EOF instead of in the EOC. Some clarification is needed on who has the responsibility for posting information on the displays.

The security was very good because two policemen were stationed at the only entrance to the EOC. The location of the security check point caused some inconvenience, since adequate toilet facilities were not available inside the secured area.

#### Recommendations:

- The arrangement of tables and the locations for each emergency worker in the EOC should be reviewed in order to minimize the impact of the small space on the operation of the EOC. (Reference NUREG-0654, II.H.3)
- A dedicated line between the EOF and the EOC should be installed to improve communications. (Reference NUREG-0654, II.F.1.d)
- Orange County EOC executive hot line should be made operational so that all the county EOCs can communicate with each other readily (e.g., Orange with Westchester). (Reference NUREG-0654, II.F.1.d)
- A population distribution map should be displayed in the EOC. (Reference NUREG-0654, II.J.10.b)
- Backup communications systems and procedures should be reviewed to reduce dependence on the commercial telephone system, since this may be overloaded in a real emergency. (Reference NUREG-0654, II.F.1.e)
- It is recommended that workers in the EOC wear identification badges that give their names, their organizations (e.g., Red Cross, etc.) and their functions, in order to expedite the flow of messages and orders. (Reference NUREG-0654, II.H.3)

### Alerting and Mobilization

Westchester County demonstrated a very good capability for alerting emergency workers, with only minor deficiencies noted. Most of the EOC staff had two-way radios to receive the emergency calls. Telephone lists of backup personnel were available. Manning of the EOC was very prompt, and the arrival of each staff member was recorded on a special display board.

A county representative was alerted and dispatched to the utility's EOC in a timely manner. The field radiological monitoring teams were alerted and dispatched by radio from the police department headquarters. They were deployed promptly.

The several procedures for alerting and mobilizing the emergency workers were effectively demonstrated. These procedures would have functioned at any time during the day or night because of the backup methods of communication. A detailed write-up of these alerting and mobilization procedures should be included in the emergency plan document.

A good capability for staffing the EOC 24 hours a day was demonstrated by performing a shift change at the EOC. This was accomplished very smoothly. A 24-hour capability for staffing the field monitoring teams was not demonstrated; however, each field team knew its backup personnel.

The Social Services staff at the EOC noted a potential shortage of personnel for staffing all of the reception centers to the level required in an actual emergency, should the emergency start on a weekend.

#### Recommendations:

- More detailed alerting and mobilization procedures should be included in the written plan. (Reference NUREG-0654, II.E.2, H.4)

### Emergency Operations Management

Emergency operations management at the Westchester EOC was very good, with only minor deficiencies noted. The organization, control, leadership, and support by elected officials was good.

It was quite evident that many specific organizations had been given roles in the overall emergency response. They knew their roles and responsibilities and participated effectively in the exercise.

Leadership was well defined at several levels. The County Executive took an active role, and was clearly in charge of the EOC. Individual organizations (e.g., Health, Red Cross) each had their own representative in charge of that function. Accident assessment was well staffed and strongly led.

The staff was kept up to date by periodic briefings by the County Executive and by periodic reports by the leaders of each participating organization. The EOC used the emergency classifications used by the utility.

#### Public Alert and Notification

Some of the actions taken for public alerting and notification were acceptable. Those that were weak and in need of substantial improvement include performance of the siren system and the ability to notify the transient population.

The Westchester EOC received the notice of a site area emergency and verified it. A message for the EBS was prepared by the Westchester PIO in the Joint Media Center, and was coordinated with the other county and state PIOs in the EOC. The siren system was then activated. Some observers heard the sirens very well, some heard them to be weak, and some did not hear them at all. No route-alerting activity was reported.

The EBS message followed the sirens by three minutes and was promptly broadcast by the radio stations. The EBS messages listed by number the Emergency Response Planning Areas (ERPA) that were affected by the simulated emergency. Sample checks by observers indicated a lack of public understanding of the ERPA zones.

A check of the schools indicated that the majority of them had been notified. However, Lakeland School District was notified but did not contact the school districts they were assigned to inform. There was no means established to verify whether school districts were contacted.

Most of the residents had received pamphlets distributed by the utility. Three of the motels and one nursing home visited by an observer were not aware of the pamphlets, while others had received them. There was a lack of knowledge of procedures for notifying the transients, especially those in business establishments.

A review of county EBS messages and news releases indicated that in a limited number of cases information in news releases more properly should have been contained in EBS messages. All official emergency public information pertaining to public safety should be broadcast on EBS. The public has been advised that EBS is the sole source for official emergency public information.

Recommendations:

- Test measurements of sound levels should be made throughout the 10-mile EPZ. Modification and/or additions should then be made until the system meets the notification requirements. (Reference NUREG-0654, II.E.6, J.10.F)
- Route-alerting procedures and messages should be developed to supplement the siren system, especially in those areas of low siren-sound levels. (Reference NUREG-0654, II.E.6, J.10.c)
- Intense efforts should be made to make the public aware of the meaning of the siren signals. (Reference NUREG-0654, II.G.1)
- A very complete educational campaign regarding ERPAs should be implemented that includes distribution of detailed maps showing these areas. (Reference NUREG-0654, II.J.10.a, G.1)
- Criteria should be developed, in conjunction with the state and the other counties, to determine the type of information to be issued via EBS and the type to be issued via news releases.

Public and Media Relations

Overall, public and media relations were acceptable, with some deficiencies noted. Public education programs need improvement.

Public information pamphlets were mailed to residents recently. Questions asked the public by FEMA observers during the exercise confirmed a general lack of understanding of evacuation zones.

The Westchester County public information officer had access to all of the information available at the EOC and the EOF. The information released was timely and concise. Westchester County was responsible for coordinating all EBS messages from the other counties.

The Joint Media Facility (JMF) was the point of contact with the press. The JMF did not have adequate space or equipment, including maps and

charts. Its location, about one mile SSW of the plant, is of some concern, since under certain wind conditions it might be in a contaminated zone potentially requiring evacuation. The alternative JMF location is in White Plains, and might not be conveniently reached under certain conditions, for similar reasons.

Briefings in the media center were not always announced, and not all important briefings were attended by the PIOs. For example, when PASNY announced the site area emergency at 9:20 a.m., only the utility was present, and at the 11:26 a.m. briefing only PASNY and Westchester County were present.

A toll-free information number was listed in the PASNY brochure for rumor control. Two phone numbers were also available in Westchester County for referring rumor inquiries to appropriate personnel.

#### Recommendations:

- Additional public education is needed so that the public will understand the locations of the areas that are to take protective actions, and will know how to carry out the protective actions. Consideration should be given to ascertain whether a significant number of people did not receive the pamphlets. If this is the case, additional distribution should be made. (Reference NUREG-0654, II.J.10.a, G.1)
- A new location for the JMF, with adequate space and equipment; that is outside the 10-mile EPZ, should be established. (Reference NUREG-0654, II.C.3.a)
- County PIOs should attend all major media briefings.

#### Accident Assessment

Accident assessment capabilities were evaluated as acceptable, with some deficiencies noted. Methods for measuring radioiodine need to be improved, and procedures for quickly determining contamination levels in liquid samples need to be addressed.

Release rates and meteorological data measured at the plant were used by the Westchester County accident assessment personnel to make initial projections of the radiological exposures expected. The Westchester EOC had excellent maps and an extensive set of transparent overlays to help determine these projections. The ability to calculate projected doses rapidly was demonstrated.



Field monitoring teams were dispatched promptly by the RADEF officer, with communication provided by the police radio. Data from the field teams were transmitted to the EOC by radio in a timely manner.

The field monitoring equipment for measuring whole-body gamma-ray exposure rates was excellent, and covered a wide range of potential exposure rates. Monitoring equipment for measuring radioiodine was inadequate, due to the use of a charcoal filter medium in the air sampling equipment, which limited its functional utility. This filter collects the noble gases as well as iodine. Therefore, the readings do not meet the requirements of NUREG-0654. The use of a silver zeolite filter instead of charcoal greatly reduces the collection of the noble gases.

The number of readings that the field teams could make was limited primarily by travel time from one sample point to another. Nevertheless, if the sampling teams were very efficiently deployed, it appears that data could be obtained in a short time, so that the EOC could make an early independent assessment.

The accident assessment room in the EOC was the central collection point for field samples. Sample media were bagged, labeled, and returned to the EOC when the field teams reported back near the end of the exercise.

The accident assessment personnel in the EOC demonstrated that they could calculate gamma dose rates and doses from iodine from the data transmitted from the field teams. They also demonstrated an ability to recommend protective actions based on the protective action guides. These recommended actions verified the state recommendations.

#### Recommendations:

- Silver zeolite filters should be used in the air sampling equipment that is used for measuring radioiodine. NOTE: Charcoal filters may be used during drills and exercises, but the silver zeolite filters must be in the instrument kits ready for use in an actual emergency. (Reference NUREG-0654, II.I.9)
- The sequence of sample points used (routes driven by the monitoring teams) should be carefully chosen to give the maximum amount of data for use in making the early independent assessment. (Reference NUREG-0654, II.I.8)



- The number of samples needed for an independent early assessment, and the possible hinderances to fast deployment of the field monitoring teams, should be reviewed to assess the possible need for additional field monitoring teams. (Reference NUREG-0654, II.I.8)
- Procedures should be developed for obtaining the field data measured by the utility's field monitoring team in a timely manner. (Reference NUREG-0654, II.I.8)

#### Actions to Protect the Public

Overall, the Westchester County personnel demonstrated an acceptable capability to protect the public by implementing protective measures. Some deficiencies were noted that limited effective performance. Improvements are needed in the areas of relocating the populace, protecting the mobility-impaired, and dealing with potential impediments to evacuation.

Police personnel staffed all but one of the traffic control points called for in the exercise. Traffic control point "F" was staffed by city police approximately 40 minutes after the sirens were sounded. Traffic control point "E" was staffed by the State Police 1 hour and 30 minutes after the sirens were sounded. Traffic control point "G" was not staffed during the time that the observer waited at the location. No explanation for these delays was discovered. Police personnel indicated that there may be a lack of enough trained police to staff all of the traffic control points in addition to other duties. Capabilities that were not demonstrated, nor called for by the scenario, but which may be associated with general vehicular evacuation, include capabilities to handle auto accidents, breakdowns, severe road conditions, and supply of gasoline.

Bus transportation is extensive in Westchester County, and is an important part of the evacuation plan, especially for school children and for people without private automobiles. Six bus companies participated in the drill. Five of these had radios in their buses while one depended on periodic telephone calls to the dispatcher. A total of six evacuation routes were run with the buses.

Several problems surfaced during the evacuation tests. Better maps and/or instructions would expedite the evacuation by bus to the reception centers. The use of fixed stops and uncertain times to pick up passengers should be reevaluated, especially for those routes that use narrow, hilly

roads. The lack of radio dispatch on some buses may delay the use of those buses once evacuation has been ordered. There is a need for more substantial plans for bus support -- i.e., memoranda of understanding with bus companies.

Evacuation capabilities for the mobility-impaired, especially those institutionally confined, were not adequately demonstrated. One bus had a platform for loading a wheel chair, but the relatively long load time and the lack of a radio restricted its usefulness.

Reception centers were located well outside of the 10 mile EPZ. At the John Jay High School reception center, the facilities were good; the procedures were good; the supplies and equipment were good; the staffing was good; and a capability for 24-hour operation was simulated by identifying backup personnel. The radiation monitoring and decontamination personnel had acceptable instrumentation, but questioning indicated that additional training is needed. Monitoring and decontamination actions would be expedited by additional training in the characteristics of radiation, in methods of measuring radiation, in procedures for surveying, and in action levels that require decontamination procedures.

One bus was routed to the Harrison High School, which was not designated as a reception center for this exercise. Questioning of the school staff revealed that they were not aware that their school had been designated as a reception center in the county plan.

The School Superintendent's Office at Peekskill and at Croton demonstrated an ability to protect the school children by implementing emergency procedures in a timely manner.

#### Recommendations:

- Procedures for staffing traffic control points in a timely manner need to be reviewed and strengthened. (Reference NUREG-0654, II.J.10.j)
- Procedures for dealing with impediments to evacuation need to be developed and exercised. These impediments include auto accidents, auto breakdowns, severe road conditions, and the unavailability of gasoline when needed. (Reference NUREG-0654, II.J.10.k)

- All buses used for evacuation should be equipped with radios for dispatching. (Reference NUREG-0654, II.J.10.g)
- Buses used for evacuation should be supplied better maps and instructions concerning the routes and the location of the reception centers. (Reference NUREG-0654, II.J.10.a, J.10.g)
- Procedures and equipment for the evacuation of the mobility-impaired need to be improved. (Reference NUREG-0654, II.J.10.d)
- Additional training is needed for the reception center personnel who do radiation surveying and decontamination. (Reference NUREG-0654, II.J.12)

#### Health, Medical, and Exposure Control

Most of the measures for health, medical, and exposure control were weak, and significant deficiencies were noted. The 24-hour capability for determining exposures of emergency workers was weak because of instrumentation problems. The decontamination procedures were also weak, primarily because of a lack of adequate waste disposal, especially for liquid wastes.

The policy of the Department of Health of the State of New York is that no potassium iodide will be distributed.

The control of access to evacuated areas was good. Simulated road-blocks were manned in a timely manner by personnel who understood their function.

Exposure of emergency workers was monitored by self-reading dosimeters. Most of these instruments had a range of 0-200 Rem, and were not sufficiently sensitive for accurately measuring the allowable exposures. Exposure of 1 Rem is required to be reported to the EOC. No permanent-record devices (e.g., film badge, TLD) were provided.

Emergency workers were provided with a dose-record card on which they recorded dosimeter readings frequently. In addition, field survey workers were required to report their dosimeter readings periodically to the EOC by radio.

Action levels that require decontamination procedures were well established and were posted. The action level was 0.1 mRem/hr.

Transportation of a radiological accident victim from the plant to a hospital was well demonstrated. The transport was timely and the procedures were designed to limit the spread of contamination and to make the decontamination of equipment easier to accomplish. On arrival, the hospital staff demonstrated good procedures for caring for the patient.

Decontamination procedures at the State Police Troop K Headquarters were adequate. However, the liquid contaminated wastes generated by the decontamination were not properly disposed of. The solid contaminated wastes (e.g., clothing) were collected for ultimate disposal. Some of the monitoring equipment was in need of recalibration.

#### Recommendations:

- More sensitive self-reading dosimeters (e.g., 0-200 mRem, 0-20 Rem) should be provided to emergency workers. (Reference NUREG-0654, II.K.3.a)
- Permanent record dosimeters (e.g., film badge, TLDs) should be provided to emergency workers. (Reference NUREG-0654, II.K.3.a)
- Methods for permanently disposing of contaminated liquid and solid wastes need to be developed for the decontamination centers. (References NUREG-0654, II.K.5.b)
- Monitoring equipment should be recalibrated periodically according to the schedules set forth in the plan (Reference NUREG-0654, II.H.10)

#### Recovery and Reentry Operations

Reentry operations were demonstrated in simulation only, but it appeared that the capability to recover and reenter exists.

The county radiation monitoring teams were kept in the field until the simulated radiation levels diminished to near background. The accident assessment team reviewed the exposure data before recommending the beginning of reentry.

Reentry processes were facilitated by the simulated reversal of numerous protective and mobilization actions.

The congregate-care center had a good understanding of plans to assist in the reentry.

Recommendation:

- Future exercise scenarios should provide more time for a detailed reentry activity. (Reference NUREG-0654, II.M.1) ..

Relevance of the Exercise Experience

Participants felt the exercise encouraged them to become more familiar with the plan, helped point out deficiencies (which will lead to resolution of identified problems), was a good learning experience, and provided training for their primary and backup teams. The scenario was considered very timely and of benefit to most participants.

#### 4. Rockland County

##### Emergency Operations Facilities and Resource

The facilities of the Rockland County EOC were evaluated as weak; significant deficiencies were noted, as described in the following paragraphs.

The Rockland County Emergency Operating Center (EOC) is located in the Fire Training Center in Pomona, New York. Space provided for the center was adequate for accomodating all participating organizations. However, the space allotted for the accident assessment room was cramped, which severely limited the number of people who could participate in these activities.

The arrangements for maps and for display of information were also adequate, although updating of some displays of information on the status of the situation was not frequent enough.

External communications were the weakest aspect of the EOC. Activities in the accident assessment room were hampered by a lack of telephones, a poorly-functioning RECs line system, and insufficient support staff. A conference telephone in the command room provided an important communication link, but it did not include the utility or the EOF. Contact between the EOF and the Rockland EOC was established through an open telephone line, leaving only one other telephone in the accident assessment room for receipt of information. This telephone was needed to receive information that could not be received over the RECs line speaker phone. The State Police field communication was also not effective for transmittal of messages between the base and the units.

Initial internal communication between the command room, the accident assessment room, and the general operating room was weak, but improvement was noted as the day progressed. The official message board was not updated with sufficient frequency.

Good security measures were used at the entrance to the EOC, but the slowness in getting the system set up caused the room to remain closed until after 9:00 a.m., more than half an hour after the site area emergency. Some security problems developed within the EOC during the day due to the large number of press and media representatives allowed in the room; however, FEMA believes that this would not be allowed in an actual incident.



Rockland County demonstrated a good capability to contact federal response organizations; however, it was noted that the Coast Guard and railroad were contacted independently by all four counties and the utility, resulting in confused messages.

Recommendations:

- Substantial improvement is needed in equipment and procedures for external communication. The RECs line system needs to be made more reliable. Staff support is needed to relieve principals from phoning tasks. (Reference NUREG-0654, II.F.1.b)
- Consideration should be given to allotting more space to the accident assessment room. (Reference NUREG-0654, II.H.3)
- A procedure is needed for keeping the operations-room staff better informed. It is suggested that the operation log be updated frequently and circulated to provide a chronological record of activities.
- The plan should be revised to coordinate contact between the counties, the Coast Guard, the railroad, and other agencies where multiple contacting may also occur. (Reference NUREG-0654, II F.1.c).

Alerting and Mobilization of Officials and Staff

The capability for alerting and mobilization of staff from the EOC was evaluated as weak. Significant deficiencies were noted, as described in the following paragraphs.

Activation of the EOC was rather slow, and there was confusion in setting up security. While the initial response was adequate, 24-hour capability was not demonstrated for most functions. For the radiological assessment officer, backup would need to be provided by the state district office.

Insufficient staff was available for alerting and mobilization of emergency response personnel. There were weaknesses in communications due to insufficient telephone lines and personnel to staff them. The police were only able to communicate within their own county, resulting in lack of coordination with other counties.

Dispatch of a representative to the EOF was achieved in a timely manner.



Recommendations:

- Additional consideration should be given to staffing of critical positions by backup personnel. (Reference NUREG-0654, II.A.1.e).
- More effective methods are needed for initial call-out to emergency personnel. (Reference NUREG-0654, II.E.2).

Emergency Operations Management

Organizational control, leadership, support by officials, and decision making were evaluated as acceptable, with deficiencies noted that limited effective performance, as noted below.

Command and control capabilities were lacking. Effective management of the emergency response by one individual was not demonstrated. In some situations, key participants were not notified of changes in the status of the situation. In the main operating room, verification of events came well after the command room received its information. Briefing sessions were infrequent. However, when held they were very good, and their use became more effective as the day progressed.

Participants in the exercise had adequate written procedures, but training in their use appeared limited. Prompting by state controllers occurred on a number of occasions, limiting the ability of observers to evaluate personnel capabilities.

The County Executive was involved in the decision process. There was, however, some dispute over decision making, e.g., between the sheriff and the State Police. Some local officials initially declined to participate in the exercise, citing a lack of previous training, but did participate to a limited degree.

In the field, police, the Sheriff, Fire Department personnel, and bus drivers were effectively managed. The State Police set up one road block only. The bus company personnel were well trained, but should have radios.

Recommendations:

- More effective management of the EOC is needed to ensure efficient operation. (Reference NUREG-0654, II.A.1.d)
- Emergency staff would benefit from more familiarity with the response procedures. (Reference NUREG-0654, II.A.1.b)

### Public Alerting and Notification

Means for public notification were evaluated as weak. Significant deficiencies were noted, as described below.

The EBS system was used effectively. EBS messages were concise and timely. However, other aspects of alerting and notification were weak. Problems noted were as follows:

- a. The siren system was not fully functional, and no backup notification system was evident other than telephone contact to facilities such as nursing homes.
- b. Members of the public calling some of the emergency center telephone numbers were told that no information was available.
- c. A check of six local schools indicated that none had been called by emergency personnel.
- d. Although a brochure had been distributed to those living within 10 miles of the plant, members of the public who were interviewed were unaware of any instructions. The brochure may also be ineffective for informing the numerous Hispanic residents living within the EPZ.
- e. A review of county EBS messages and news releases indicated that in a limited number of instances information in news releases more properly should have been contained in EBS messages. All official public information pertaining to public safety should be broadcast on EBS. The public had been advised that EBS is the sole source for official emergency public information.

### Recommendations:

- The effectiveness of the initial public notification system needs to be tested to determine whether the siren system will be sufficient or whether a backup notification system is needed. (Reference NUREG-0654, II.E.6.)
- Rumor control methods need to be strengthened. (Reference NUREG-0654, II.G.2.C.)
- The public education program should be reviewed to determine whether efforts are needed to improve its effectiveness. (Reference NUREG-0654, II.G.2.)
- Criteria should be developed in conjunction with the state and other counties to determine what types of information will be broadcast over EBS and what type will be issued in news releases.

### Public and Media Relations

Media capabilities were evaluated as acceptable. Deficiencies that would limit effective performance are noted below.

The public information activities were well coordinated between the county EOC and the Media Center. It should be noted that Westchester County was responsible for coordinating all EBS messages from the other counties.

Although an information brochure had been distributed to the public two weeks before the exercise, awareness of it was low. No provisions were made for non English-speaking residents in the area.

The Rockland County public information officer had access to all of the information available at the EOC and the EOF. The information released was timely and concise.

The Joint Media Facility (JMF) was the point of contact with the press. Its location, about one mile SSW of the plant, is of some concern, since under certain wind conditions it might be in a contaminated zone. The alternative JMF location in White Plains might not be conveniently reached under certain conditions, for similar reasons. There was not adequate space or equipment, including maps and charts.

There was no evidence of coordinated arrangements to identify and control rumors.

### Recommendations:

- Additional public education is needed so that the public will understand the boundaries of the areas that are to take protective actions, and know how to carry out the protective actions. (Reference NUREG-0654, II.J.10.a, G.1)
- A new location for the JMF, with adequate space and equipment, that is outside the 10-mile EPZ, should be established. (Reference NUREG-0654, II.G.3.a)
- Procedures should be developed for identifying rumors and for dealing with them. (Reference NUREG-0654, II.G.4.c)

### Accident Assessment

Accident assessment capabilities were evaluated as weak. Significant deficiencies were noted, as described below.

The poor communications system in the accident assessment room contributed to problems in this area. One field monitoring team was unable to communicate by radio. The field data were telephoned to the EOC, which relayed the data to the EOF. Due to inappropriate equipment, the EOF had to call the EOCs individually to repeat REC's line messages. A consistent dose assessment methodology had been previously established between state and county assessment teams; however, slowness in the communication system lessened the effectiveness of dose estimate comparisons.

Monitoring equipment for measuring radioiodine was inadequate due to the use of a charcoal filter medium in the sampling equipment, which limited its functional utility. This filter collects the noble gases as well as iodine, and therefore the readings do not meet the requirements of NUREG-0654. The use of silver zeolite filter instead of charcoal greatly reduces the collection of the noble gases.

The field personnel did not demonstrate adequate familiarity with the field instrumentation. Communication with the central data collection point was difficult. Reports of radiation measurements at zero or background were sometimes not passed on to the other assessment centers. One monitoring team remained at one sampling point all morning and at a second point all afternoon, so that their plume-tracking ability was not well demonstrated. Monitoring teams effectively measured and recorded their individual exposures; however, use of TLDs for dose recording would have been easier.

The role of the county representative at the EOF was not well defined. Information he received from the county was not passed on to the EOF. Also, the county representative was bypassed by information flowing from the utility hotline.

#### Recommendations:

- Silver zeolite filters should be used in the air sampling equipment that is used for measuring radioiodine. NOTE: Charcoal filters may be used during drills and exercises, but the silver zeolite filters must be in the instrument kits ready for use in an actual emergency. (Reference NUREG-0654, II.I.9)
- An improved communications system is needed to support assessment activities and timely use of field data. (Reference NUREG-0654, II.F.1.d)

- Additional training of field teams would be beneficial to increase their familiarity with equipment and procedures. Responsibilities for field radioiodine measurements should be clearly defined. (Reference NUREG-0654, II.I.8,9)
- The duties of the county representative at the EOF should be more clearly defined. (Reference NUREG-0654, II.C.2.a)

#### Actions to Protect the Public

Capabilities in the EOC for protection of the public were evaluated as good. Only minor deficiencies were noted.

Actions to protect the public were generally very good. Evacuation planning and execution were demonstrated without any major problems. Congregate-care centers performed in an excellent manner. The Rockland County Psychiatric Center was well staffed, large, and an excellent facility for mass care. However, the staff would benefit from on-the-job training.

The personnel monitoring centers were well staffed, and employees followed established guidelines. However, workers who were monitoring for radioactive contamination need better training to prevent the spread of contamination to clean areas.

Bus drivers in the evacuation routes were well briefed, but should be equipped with radios so that they could request additional help if necessary and obtain updates on plant status. Bus dispatchers had good communication links to the EOC. Backup personnel were available. Ambulance and helicopter evacuation were well demonstrated.

#### Recommendations:

- Although actions to protect the public were well demonstrated, participation in regular exercises or drills is recommended to further improve task performance. (Reference NUREG-0654, II.N)
- All buses used for evacuation should be equipped with radios for dispatching. (Reference NUREG-0654, II.J.10.g)

#### Health, Medical, and Exposure Control Measures

Health and medical measures were evaluated as good; only minor deficiencies were noted.

The Rockland County Psychiatric Center provided excellent facilities, supplies, and equipment. Additional training could improve operation of the center.

Exposure of emergency workers was monitored by self-reading dosimeters. Field workers were trained in their use and recorded dosimeter readings at 15-minute intervals. However, no permanent-record devices (e.g., film badge, TLD) were provided. Procedures for obtaining appropriate authority for emergency exposure of workers were well demonstrated. Decontamination level guidelines were well displayed. Good decontamination facilities were available. Food contamination monitoring was carried out at the EOC.

State police simulated control of evacuated areas by setting up one roadblock, a less extensive response than called for in the scenario.

#### Recommendations:

- On-the-job training would make procedures flow more smoothly at the congregate care centers.
- Use of TLDs or film badges should be implemented for recording of doses. (Reference NUREG-0654, II.3.a.)

#### Recovery and Reentry Operations

The capability of the EOC for recovery and reentry operations was evaluated as good; only minor deficiencies were noted.

Simulation of recovery and reentry was well carried out at the EOC. Each agency was given specific responsibilities. No field simulations were observed, due partly to the short duration of the exercise.

#### Relevance of the Exercise Experience

The exercise was felt to be of benefit to county participants. Limited involvement by the local police, fire departments, and ambulance teams reduced the effectiveness of the exercise. Representatives from these departments were present at the EOC and gained some experience with emergency operations. The local police reported that training and involvement of the police prior to the drill had been inadequate to allow effective participation.



The scenario's use of a wind shift contributed to the exercise by allowing more extensive decision making. However, the county's computer analysis system was not used during the exercise to analyze meteorological data.

The exercise demonstrated that better communication systems are needed in the EOC and that there is a need for better integration and training of local agencies.

During the exercise, prompting occurred by state observers and controllers to a degree that affected the ability of federal observers to make evaluations. In most cases it appeared that the prompting was probably superfluous to completion of the activity.

At the congregate care centers and in evacuation areas the exercise was felt to be of benefit in training.

#### Recommendations:

- Future exercises should include more extensive participation by police, sheriff, fire, and ambulance services. Training needs in these areas should be identified. (Reference NUREG-0654, II. B.9)
- Use of actual meteorological data should be considered for at least a portion of the exercise to allow more realistic response from the accident assessment teams and to provide additional training benefit.
- Local agencies need more training and greater involvement in the emergency plan to ensure effective response (Reference NUREG-0654, II.C.4).
- Nonparticipants must be instructed to refrain from participating in exercise activities.



## 5. Orange County

### Emergency Operations Facilities and Resources

The facilities of the Orange County emergency operating center (EOC) were evaluated as acceptable overall, although some deficiencies were noted. The most significant deficiency occurred in the area of communications. This and other deficiencies are further described below.

The Orange County EOC is located in the County Government Center, Goshen, New York. This facility was somewhat cramped, but provided adequate working space for accommodating all participating organizations. The facility was partitioned to reduce internal traffic flow. Separate rooms were used for accident assessment and for decision making by the county executive.

Incoming communications were dispersed between the communications room, County Executive's room, and the accident assessment room. On occasion the limited number of telephone lines and radio facilities hampered operations. A breakdown occurred in the executive hot-line which links the counties, temporarily isolating Orange County from the other counties. Field measurement data were received in the communications room because of radiation shielding of the accident assessment room. Participating field workers, including bus drivers, policemen, and ambulance drivers, had separate radios. The RACES personnel participated in the exercise, but were not observed.

Internal communications were accomplished informally, as needed by the various representatives. Communication relay depended upon hand-carrying of messages between rooms. Periodic situation reports were not prepared. The principal situation board was not always current and occasionally showed conflicting information, and message logs were not widely available.

Maps and displays were available and well laid out, however, some personnel were not familiar with the annotation used on the maps. Radiation dose maps were centrally located on the table in the dose assessment room. Sampling points and relocation centers were well marked on maps.

Security was adequate, provided by Sheriff's Deputies in and outside of the EOC. A personnel checklist was utilized and identification was checked.

#### Recommendations:

- The Orange County EOC should make the executive hot line operational to facilitate the information flow between counties.
- Additional telephone lines or equivalent systems should be provided in the EOC to serve as an additional backup for dedicated phones. (Reference NUREG-0654, II.F.1.b)
- The plan for internal communications and dissemination of information within the EOC should be improved to increase efficiency and coordination. Radiological field monitoring data should be transmitted directly into the accident assessment room.
- EOC workers should be familiarized with displays.

#### Alerting and Mobilization of Officials and Staff

The overall capability for continuous 24-hour emergency response operations was evaluated as weak because of inadequate training of relief personnel.

All personnel were contacted and mobilized promptly. Each responding organization possessed adequate staff and quickly established operational readiness. Backup capabilities were simulated or demonstrated. However, a serious concern is the proficiency of the relief personnel. An example of this was noted with the backup county RADEF officer, who was not fully trained in the calculation of dose rates nor experienced in the use of all equipment resources. In general, the backup staff was not as proficient as the primary participants. Radiological monitoring teams arrived promptly and were very efficient. These teams checked through the EOC and were dispatched within an hour of arrival. Emergency response organizations, exclusive of traffic control, demonstrated the ability for prompt notification. This was evidenced at the reception/congregate-care center and the decontamination center. Each of these organizations had adequate communications equipment for alerting response personnel.

Difficulties were encountered in establishing access control points, due to poor interagency communication in the EOC. After notification, the Sheriff and State Police responded promptly. A delay occurred in the ambulance transport of a "victim" to the hospital. The accident occurred at 12:15 p.m. and the patient arrived at the hospital at 1:08 p.m., without communication by two-way radio between the ambulance and hospital.

#### Recommendations:

- Provide more comprehensive training for key backup personnel. (Reference NUREG-0654, II.A.4)
- Establish a schedule for additional drills in order to develop more familiarity and efficiency with procedures and resources.
- Provide additional training and resources for communication with field support personnel.

#### Emergency Operations Management

Emergency operations management including organizational control, leadership, decision making, and support by officials was evaluated as acceptable, with some deficiencies noted that limited effective performance. These are noted below.

Participants within the main EOC operations room were adequately organized. The EOC floor plan divided activities among several rooms: communications, accident assessment, and county executive office. This required the County Director to divide his time among the various rooms. Operations were on occasion hindered by weak information flow. Internal communication required hand-carried messages between the rooms. There is a need for greater communication between EOC leaders and agency participants. Briefing of these representatives were sporadic. Written situation updates were not always available.

Command and control capabilities were evident. All participants knew who was in charge. The County CD Director assumed operational control of the EOC. The County Executive responded promptly and clearly exercised his decision-making authority. In his absence his deputy was present and in control. The RADEF officer was fully responsible and involved with the direction and execution of all radiological and associated activities. His instructions to field monitoring teams were clear, and the teams were effectively deployed.

Emergency response organizations, including the reception center, congregate care, social services, Red Cross, decontamination center, fire department and state personnel monitoring center were well organized, properly staffed and directed. Excellent leadership was noted at the congregate-care

center and the decontamination center. At the reception center, four staff members were present, although it was unclear who was in charge. All organizations understand their assignments. Written procedures were followed.

Recommendation:

- The divided floor plan within the EOC requires that effective communication flow and procedures be established to ensure efficient management.

Public Alerting and Notification

Means for alerting and notification of the public were evaluated as acceptable, with deficiencies noted that limit effective performance.

The plan for initial public notification included sounding of sirens and use of the emergency broadcast system (EBS). The first EBS message was broadcast by WABC and local radio stations. The siren system, however, was apparently not fully functional at all locations, and sirens were not heard at some indoor locations. Alternative notification by helicopter was simulated.

Transient accommodations such as motels were adequately informed of the alerting procedures.

A review of county EBS messages and news releases indicated that in a limited number of instances information in news releases more properly should have been contained in EBS messages. All official emergency public information pertaining to public safety should be broadcast on EBS. The public has been advised that EBS is the sole source for official emergency public information.

Recommendations:

- More extensive backup systems should be considered for locations where sirens fail to function or where they may be inaudible to those indoors. Use of bullhorns or route alerting should be considered. (Reference NUREG-0654, II.E.6)
- Criteria should be developed in conjunction with the state and other counties to determine what type of information will be aired over EBS and what type will be issued in news releases.

### Public and Media Relations

The publication and coordination of releases of information were evaluated as acceptable with deficiencies noted that limit effective performance.

Public information activities were well coordinated between the EOC and the county PIO at the Joint Media Center. Copies of EBS messages and press releases were not distributed in the EOC, and rumor control procedures were not observed. Westchester County was responsible for coordination of all EBS messages from other counties.

The Joint Media Facility (JMF) was the point of contact with the press. Its location about one mile SSW of the plant is of some concern since under certain wind conditions it might be in a contaminated zone. The alternate JMF location is in White Plains and might not be conveniently reached under certain conditions for similar reasons. There was not adequate space or equipment, including maps and charts at the center.

Briefings in the media center were not always announced, and not all important briefings were attended by the PIOs; for example, when PASNY announced the site area emergency at 0920 hours, only the utility was present, and at the 1126 hours briefing only PASNY and Westchester County were present.

#### Recommendations:

- Emergency workers in the EOC should be kept better informed of the information being released to the public.
- Press briefings should be announced in advance so that PIOs can attend.
- Additional public education is needed so that the public will understand the locations of the areas that are to take protective actions and will know how to carry out the protective actions. (Reference NUREG-0654, II.J.10.a, G.1)
- A new location for the JMF with adequate space and equipment that is outside the 10 mile EPZ should be found. (Reference NUREG-0654, II.G.3.a)
- Procedures should be reviewed for identifying rumors and for dealing with them. (Reference NUREG-0654, II.G.4.c)

### Accident Assessment

Capabilities for performing accident assessment were rated as acceptable, with deficiencies noted that limit effective performance, as noted below.

A separate room in the EOC was provided for accident assessment. Staff operations were adequately organized and directed. Monitoring teams were well trained and mobile, but did not carry instrumentation such as high-range instruments, although additional equipment was available at the EOC. Monitoring equipment for measuring radioiodine was inadequate due to the use of a charcoal filter medium in the air sampling equipment, which limited its functional utility. This filter collects the noble gases as well as iodine, and therefore the readings do not meet the requirements of NUREG-0654. The use of a silver zeolite filter instead of charcoal greatly reduces the collection of the noble gases. Prompt reporting of whole-body gamma field measurements to the EOC was observed. Good capability for airborne monitoring was demonstrated by deployment of a Civil Air Patrol airplane.

### Recommendations:

- Field teams should demonstrate familiarity with instruments having response ranges that might be needed during an actual event. (Reference NUREG-0654, II.I.8)
- Silver zeolite filters should be used in the air sampling equipment that is used for measuring radioiodine. NOTE: Charcoal filters may be used during drills and exercises but the silver zeolite filters must be in the instrument kits ready for use in an actual emergency. (Reference NUREG-0654, II.I.9)

### Actions to Protect the Public

Means for sheltering, evacuation of the public, reception and care, and transportation were evaluated as good, with only minor deficiencies noted. All observed facilities were well organized, well staffed, and efficiently operated. While traffic control at reception centers was sufficient for the exercise, no special provisions for the mobility-impaired was observed.

The evacuation bus route was well directed, and a medical drill was very well executed.



It was felt that the lack of accurate means for radioiodine measurement might affect the decisions to evacuate or shelter.

Recommendations:

- Means for obtaining prompt and accurate field measurements of radioiodine should be specified to provide guidance on protective action decisions. (Reference NUREG-0654, II.I.9)
- Provisions for care of the handicapped should be considered at the reception centers.

Health, Medical, and Exposure Control Measures

Health, medical, and exposure control measures were evaluated as acceptable, with deficiencies noted that limit effective performance.

County procedures for contaminant monitoring of all employees active in the EPZ were closely followed. Screening of evacuees and vehicles was also well demonstrated; however, means for final disposal of contaminated solids and liquids were not established. While pocket dosimeters were effectively used for personal monitoring, permanent-recording instruments were not available. Sufficient staff was available to avoid exposures in excess of protective action guides.

Recommendations:

- Disposal methods for contaminated materials should be developed.
- Permanent-recording devices (e.g., TLDs or film badges) should be considered for emergency workers. (Reference NUREG-0654, II.K.3.a)
- Additional training is needed at local hospitals on radiation monitoring.

Recovery and Reentry Operations

Recovery and reentry operations were evaluated as weak, with significant deficiencies noted. This evaluation was based primarily on the lack of full simulation. The operations officer conducted a concise general briefing for exercise participants; this was followed closely by termination of the



exercise. Although participants appeared to understand their roles, no actions were simulated before the EOC was closed.

Recommendation:

- Important recovery and reentry procedures should be effectively demonstrated to ensure capabilities and to provide training. (Reference NUREG-0654, II.M.1)

Relevance of the Exercise Experience

Observers felt that the exercise provided an acceptable level of experience. While participants at the fixed facilities felt the experience was beneficial, the field teams varied in their evaluations. The monitoring teams were enthusiastic and gained valued experience. Access control personnel, however, felt that their activities were routine. The scenario was good in that it called for participation of all counties in the EPZ; however, more extensive use could have been made of monitoring teams by having them take more readings and samples.

Recommendation:

- Improvement in the exercise experience could be gained by having activities designed to thoroughly test teams with complex duties (such as field monitoring teams) while minimizing activities that are routine for other participants.

## 6. Putnam County

### Emergency Operations

Overall, the emergency operating center (EOC) had good facilities, resources, internal communications, displays and security. However, some minor deficiencies were noted and are described below. This EOC is located in the County Office Building, on Main Street, Carmel, New York.

The EOC was very small, and had a cramped working space that was especially noticed in the radiological assessment area and in the communications area. The overall functioning of the EOC was good in spite of the small size, because the management was excellent. Amenities such as lighting, ventilation, and display space were good. However, a conveniently located drinking fountain would be a welcome addition.

Several primary and backup communications systems provided a good performance. The primary system between the nuclear facility, the state, and the local governments was a dedicated hot-line telephone, the Radiological Emergency Communications System (RECS). Backup systems included a special radio network, the commercial telephone, and the RACES system. The executive hot line functioned very well until it failed near the end of the exercise. The backup radio was then adequately utilized.

The primary communication between the EOC and the agencies and organizations that provided the local response was via commercial telephone. This consisted of many telephone lines and instruments that provided good performance. The backup RACES system was excellently equipped, and was manned by very competent operators.

Communication with the buses used for evacuation was by radio. This channel was adequate, but in two instances messages were delayed until the channel was cleared.

Communications with federal agencies was adequate.

Communications within the EOC were excellent as a result of the following procedures: messages were quickly verified and logged before they were distributed within the EOC; the data describing the plant status and the radioisotope release rates were posted on a status board and promptly updated; and the staff was kept well informed by periodic briefings.

A small improvement in the functioning of the EOC could be made by synchronizing all of the clocks.

Information was well displayed at all key locations in the EOC, and was effectively utilized in making decisions and in carrying them out. The displays consisted of a status board and several maps. The information posted on the status board was easily read from a distance. The map that showed evacuation routes was good; however, it could be made more legible from a distance. An excellent map showed the location of the plume and the locations of the radiation monitoring stations, and gave the field sampling data.

Security was adequate except for the initial 15 minutes after activating the EOC. During this initial time, the access was uncontrolled. After a security officer was assigned to the entrance, and after he had been instructed, security was adequate. A sign-in procedure was required in addition to name tags. Not all workers were required to show identification, but this is because many of the workers were known to the security officer.

#### Recommendations:

- The Orange County EOC should be added to the hot-line network so that all of the county EOCs can readily communicate with each other, e.g., Putnam with Orange. (Reference NUREG-0654, II.F.1.d)
- The arrangement of tables and the locations for each emergency worker in the EOC should be reviewed to minimize the effects of the small space on the operations. (Reference NUREG-0654, II.H.3).
- Procedures for security should be reviewed. (Reference NUREG-0654, II.H.3)

#### Alerting and Mobilization

Putnam County demonstrated an acceptable capability to respond to an emergency that starts at any time during the day or night. However, some deficiencies were noted that limit effective performance.

The alert notice from the utility to the State Police was relayed to the County Sheriff's Office. This office, which is staffed 24 hours per day, demonstrated effective call-out procedures for alerting county officials or

their alternates. Home telephone numbers, home addresses, and some radio call systems were available to facilitate notification.

The county officials reported promptly and activated the EOC in a timely manner. Procedures for notification of emergency response organizations and personnel were excellent. Mobilization was timely, with some personnel reporting within 15 minutes. All were on duty in about 30 minutes. Alerting of the radiation monitoring field teams was accomplished by radio soon after the EOC was activated.

Most of the alerting was done with telephones, but radio backup was available. The RACES personnel provided excellent support.

The EOC verified messages (e.g., Alert, Site Area Emergency, etc.) from the EOF and the utility, both by repetition at the time of notification and by call-back shortly after receipt of the message. Putnam County was dependent on the Westchester representative at the EOF for much of the radiological data needed for accident assessment at the Putnam EOC.

A capability to continue operations 24 hours per day was demonstrated at the EOC by a shift change at 1300 hours, and by exhibiting a list of backup personnel. This revealed that two of the key people, the CD Director and the RADEF Officer, do not have adequate backups.

Power for the communications equipment used for alerting depended on a battery in case of power failure. This battery had only an 8-hour capacity.

#### Recommendations:

- Alternates for the CD Director and RADEF Officer should be trained as soon as possible. (Reference NUREG-0654, II.A.4).
- An emergency power generator should be considered for use during a power failure. (Reference NUREG-0654, II.A.4, F.1.d).
- Monitoring teams should be dispatched to the field at the earliest possible time, so that they are in position to provide data for an independent early assessment of the emergency. (Reference NUREG-0654, II.H.4, I.8).
- Procedures for transmitting meteorological data, plant emissions data, and data obtained by the utility field monitoring teams from the utility and EOF to the EOC should be reviewed and strengthened. (Reference NUREG-0654, II.F.1.d, I.8).

### Emergency Operations Management

The emergency operations management was good, with only minor deficiencies noted. The organization, control, and leadership, as well as the support by elected officials, were good.

Many specific organizations had roles in the response of Putnam County to the exercise scenario. It was clear that these organizations understood their responsibilities and knew how to implement specific provisions in the emergency plan. The operations officer consulted procedures and checklists frequently.

Leadership was excellent. The Civil Defense Director was clearly in charge of the EOC, and was supported by the County Executive. The CD Director, the County Executive, and the RADEF Officer conferred frequently, contacted other EOCs and the state, and reached important decisions quickly.

The RADEF Officer was clearly responsible for the accident assessment function. He directed the field teams, analyzed the data, and briefed the health officer and other EOC officials. He used the utility's emergency classifications.

The RACES organization was assigned to field monitoring, and provided excellent support.

The Civil Defense Director, the County Executive and the leaders of the supporting organizations gave periodic reports to keep the workers in the EOC up to date. The more important items were posted periodically.

### Public Alert and Notification

Some of the actions taken for public alerting and notification were acceptable. Those that were weak and in need of substantial improvement include performance of the siren system and the ability to notify the transient population.

At the notice of a Site Area Emergency, the Putnam County EOC coordinated the activation of the siren system with the release of the first EBS message. Some of the sirens failed to sound. Others sounded but were not loud enough in all areas. In addition, interviews with the public revealed that many had not heard the siren or did not know what they meant or that they

should listen to the EBS for instructions. Those interviewed also did not know the meaning of the Emergency Response Planning Areas (ERPA) or the boundaries for the ERPAs.

The EBS messages were written, cleared, and broadcast (in simulation) in a timely manner. No TV monitor was available in the EOC to check the EBS messages on the TV.

Route alerting by police and fire trucks equipped with PA systems is the backup for the siren system. The adequacy of the backup system was not demonstrated. A few route alerts were simulated, but no PA announcements were made.

Checks with motel operators revealed that the sirens had not been heard. No evidence of notification of the transient population was found.

A review of county EBS messages and news releases indicated that in a limited number of instances information in news releases more properly should have been contained in EBS messages. All official emergency public information pertaining to public safety should be broadcast on EBS. The public has been advised that EBS is the sole source for official emergency public information.

#### Recommendations:

- Test measurements of sound level should be made throughout the 10-mile EPZ. Modifications and/or additions should then be made until the system meets the notification requirements. (Reference NUREG-0654, II.E.6, J.10.c).
- Route-alerting messages and procedures should be developed to supplement the siren system, especially in those areas of low siren sound level. (Reference NUREG-0654, II.E.6, J.10.c).
- Criteria should be developed in conjunction with the state and other counties to determine what type of information will be aired over EBS and what type will be issued in news releases.
- Intense efforts should be made to make the public aware of the meaning of the siren signals. (Reference NUREG-0654, II.G.1).
- A simpler alternative to the ERPA zone designations should be developed, or a very complete educational campaign that includes distribution of maps showing these areas should be conducted. (Reference NUREG-0654, II.J.10.a, G.1).



Public and Media Relations

Overall, the public and media relations actions were acceptable, but some deficiencies were noted. Public education programs and rumor control procedures need improvements.

Public education brochures were mailed to the public a short time before the exercise. These brochures listed a toll-free telephone number that the public could call to get more information. In addition, training courses for the public were given regularly by the Fire Department and RACES personnel. They were assisted by Putnam County department heads. Nevertheless, it appears that additional education is needed to help the public understand actions that are to be taken in the event of an emergency. No posted notices and no information in the telephone book were found.

The Putnam County Public Information Officer (PIO) at the EOC was in charge of releases to the media. These were transmitted to the Joint Media Center after they had been approved by the County Executive. The PIO had access to all participants in the EOC, including the County Executive, and to all information there. It should be noted that Westchester County was in charge of coordinating all EBS messages from the several counties. The Putnam County PIO staff at the Joint Media Center effectively coordinated EBS and news release issuance.

The Joint Media Facility (JMF) was the point of contact with the press. Its location about one mile SSW of the plant is of some concern since under certain wind conditions it might be in a contaminated zone. The alternative JMF location is in White Plains and might not be conveniently reached under certain conditions for similar reasons. There was not adequate space or equipment, including maps and charts at the center.

Briefings in the Media Center were not always announced, and not all important briefings were attended by the PIOs; for example, when PASNY announced the site area emergency at 9:20 a.m., only the utility was present, and at the 11:26 briefing only PASNY and Westchester County were present.



#### Recommendations:

- Additional public education is needed so that the public will understand the locations of the areas that are to take the protective actions and will know how to carry out the protective actions. (Reference NUREG-0654, II.J.10.a, G.1).
- Procedures should be developed for identifying rumors and for dealing with them. (Reference NUREG-0654, II.G.4.c).
- A new location for the JMF, with adequate space and equipment that is outside the 10-mile EPZ should be found. (Reference NUREG-0654, II.G.3.a)
- All major press briefings should be announced in advance so that PIOs can attend.

#### Accident Assessment

Accident assessment capabilities were evaluated as acceptable, but some deficiencies were noted. A problem in the method for determining radioiodine should be corrected, and procedures for quickly determining contamination levels in liquid samples need to be addressed.

Initial projections of the radiological exposures were made from release rate and meteorological data measured at the power plant. The Putnam County EOC had excellent maps and transparent overlays to use for this purpose. These initial projections were used before field sample data were available.

Field monitoring teams were deployed promptly by the RADEF Officer in the EOC. This was possible because of the excellent support provided by the RACES personnel, who also provided communications for transmission of the field data to the EOC.

The monitoring equipment for measuring whole-body gamma-ray exposure rates was excellent. Monitoring equipment for measuring radioiodine was inadequate, due to the use of a charcoal filter in the air sampling equipment. This filter also collects the noble gases, so that the readings do not meet the requirement of NUREG-0654. The use of a silver zeolite filter in place of the charcoal greatly reduces the collection of the noble gases.

The number of readings that the field teams could make was limited primarily by travel time from one sample point to another. Nevertheless, if the sampling teams were very efficiently deployed, data could be obtained in a short enough time for the EOC to make an early independent assessment.

No liquid samples were analyzed in the field; however, liquid and solid samples from the field were delivered to the central collection point at the EOC.

No field measurements of radiation levels were obtained from the utility through the EOF; however, some boundary dose projections were obtained.

#### Recommendations:

- Silver zeolite filters should be used in the air sampling equipment that is used for measuring radioiodine. Charcoal filters may be used during drills and exercises but the silver zeolite filter should be in the instrument kits ready for use in an actual emergency. (Reference NUREG-0654, II.I.9).
- The sequence of sample points used (routes driven by monitoring teams) should be carefully chosen to give the maximum amount of data for use in making the early independent assessment. (Reference NUREG-0654, II.I.8).
- Procedures should be developed for obtaining the field data measured by the utility's field monitoring teams. (Reference NUREG-0654, II.I.8).
- The number of samples needed for an independent early assessment, and the possible hinderances to fast deployment of the field monitoring teams should be reviewed in order to assess the possible need for additional field monitoring teams. (Reference NUREG-0654, II.I.8).

#### Actions to Protect the Public

Putnam County officials demonstrated a good capability to take the actions necessary to protect the public, and only minor deficiencies were noted.

Simulated roadblocks were set up promptly, and most personnel understood their functions at each site. Orders were given in a timely manner for the various actions that were required to simulate sheltering and then evacuation. A bus-load of students was evacuated to the congregate-care center in Dutchess County. This demonstrated evacuation was very good.

The locations of the congregate-care centers in Brewster and Dutchess counties are well outside the 10-mile EPZ. They are located in schools where large gymnasiums, cafeterias, and monitoring and decontamination facilities were provided. In one case, the Vassar Hospital cooperated to provide medical care if required.

The procedures for processing evacuees at the congregate-care centers were good. Health care, decontamination, and monitoring were adequate; however, the monitoring personnel could benefit from additional training.

The facilities at the congregate-care centers were good. An early shortage of equipment needed for long-term operation was relieved by the arrival of a Red Cross truck filled with equipment (e.g., cots, blankets, etc.).

The staffing at the congregate-care centers was excellent and included personnel from County Health, from the Police, from Civil Defense, from RADEF and from the Red Cross. The number of personnel was ample.

#### Recommendations:

- Additional training for those workers performing radiation monitoring and decontamination procedures is recommended. (Reference NUREG-0654, II.J.12).
- Procedures for dealing with impediments to evacuation need to be developed and exercised. These impediments include auto accidents, auto breakdowns, severe road conditions and the unavailability of gasoline when needed. (Reference NUREG-0654, II.J.10.k).

#### Health, Medical, and Exposure Control

Overall, the health, medical, and exposure control actions were acceptable, with some exceptions. The procedures for ultimate disposal of liquid and solid wastes needs to be addressed.

The policy of the Department of Health of the State of New York is that no potassium iodide will be distributed to the general population.

The control of access to evacuated areas was good. Roadblocks were manned, and the personnel at the roadblocks understood their function.

Emergency workers were provided with dosimeters to measure exposure. Two instruments of the direct reading type were provided (0-20 Rem and 0-200 Rem). These were read frequently (e.g., 15-minute intervals) and the readings recorded on a card. The EOC called the field teams to obtain dosimeter readings for logging. No permanent-record dosimeters (e.g., TLDs, film badges) were provided.

Emergency worker exposure in excess of the 20 Rem limit was not experienced; however, questions revealed that the approval of the County Executive was needed before this limit could be exceeded. The CD Director thought that his approval was necessary.

Evidence for the existence of action levels for determining the need for decontamination was not observed at the personnel monitoring center; however, the workers stated that they existed and knew the counting rates that corresponded.

Personnel decontamination procedures at the personnel monitoring center were demonstrated and were adequate. Decontamination procedures for equipment and supplies were not demonstrated. More training in these procedures is needed. Proper procedures for ultimate disposal of contaminated articles (e.g., clothing) needs to be addressed.

#### Recommendations:

- Procedures should be clarified so that all personnel know which individual (e.g., the County Executive) can approve emergency workers receiving a radiation exposure in excess of the PAGs. (Reference NUREG-0654, II.K.4).
- Additional training is needed so that personnel monitoring workers will be more familiar with the action levels for decontamination actions. (Reference NUREG-0654, II.J.12).
- Training in methods for decontamination of equipment and supplies should be given to P.M.C. workers. (Reference NUREG-0654, II.K.5.b).
- Methods for permanent disposal of contaminated articles (e.g., liquids, clothing) should be addressed. (Reference NUREG-0654, II.K.5.b).
- Permanent-record dosimeters (e.g., TLDs, film badges) should be provided. (Reference NUREG-0654, II.K.3.a).

### Recovery and Reentry

Reentry operations were performed in simulation only. An acceptable capability for reentry and recovery appears to exist.

The county radiation monitoring teams continued to function during the recovery phase. They worked closer and closer to the plume, until the simulated readings decreased to background after a few days (simulated). This was hard to evaluate because the controller left before the conclusion of the exercise. The accident assessment team reviewed the exposure data before making a recommendation.

Prior to termination of the exercise, the County Executive appointed a commission to plan and implement recovery over a 30-day period.

#### Recommendations:

- Future exercise scenarios should provide more time for a detailed reentry activity. (Reference NUREG-0654, II.M.1).

### Relevance of the Exercise Experience

There was unanimous agreement among the federal evaluators that the exercise was very beneficial to the participants, all of whom took the exercise very seriously and performed as if the power plant accident actually occurred. Volunteers (nongovernment personnel) are especially commended. While the scenario was a good test of emergency response capabilities of county personnel, it did not (and perhaps was not intended to) address issues of public awareness and public reaction to an emergency.

## 7. Dutchess County

Because Dutchess County is not located within the 10-mile EPZ, it was not required to demonstrate its emergency preparedness capability. However, since Dutchess County could receive a large number of evacuees during an actual accident, the county, on its own initiative, decided to participate fully in the exercise. The evaluations by federal observers of the Dutchess County activities are noted below.

The emergency operations center (EOC) had adequate space and equipment. The facility was fully staffed, including participation by the County Executive. Security was excellent.

The Putnam County Department of Social Service demonstrated compliance with the plan by notifying its counterpart agency in Dutchess to expect evacuees from specific sectors.

The county had some initial difficulty contacting the media center to coordinate public information. Some telephone numbers were also inaccurate.

Overall, the exercise was considered to be good as a training experience for the county.

## V. CORRECTIVE ACTION FOR DEFICIENCIES

### 1. SCHEDULE FOR CORRECTING SIGNIFICANT DEFICIENCIES

State and local jurisdictions should submit to the RAC the corrective measures they have taken or intend to take. If remedial actions cannot be instituted immediately, then a detailed plan for scheduling and implementing remedial actions must be provided which include a time frame (dates) for completion.

The Regional Director of FEMA is responsible for certifying to the FEMA Associate Director, State and Local Programs and Support, Washington, D.C., that any deficiencies noted in the exercise have been reported and that such corrections have been incorporated into the plan.