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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

BEFORE ADMINISTRATIVE JUDGES:

Helen F. Hoyt, Chairperson
Dr. Richard F. Cole
Dr. Jerry Harbour

In the Matter of	)	Docket Nos. 50-352-OL
	)	50-353-OL
PHILADELPHIA ELECTRIC COMPANY	)	
	)	
(Limerick Generating Station, Units 1 and 2)	)	

FEDERAL EMERGENCY MANAGEMENT AGENCY'S PRE-FILED TESTIMONY ON ADMITTED OFFSITE EMERGENCY PLANNING CONTENTIONS

D503

INTRODUCTION TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S (FEMA) TESTIMONY

In order that all parties to these proceedings have a clear understanding, FEMA wishes to define the nature of its testimony. The FEMA comments are based on the set of 60 draft off-site Radiological Emergency Response Plans for the counties, municipalities and school districts that would be involved in the event of an incident at the Limerick Generating Station, submitted to us for informal review by the Pennsylvania Emergency Management Agency (PEMA) on December 6, 1983.

Although, as stated, these plans are only drafts, they are the only documents that have been "officially sanctioned" by PEMA. FEMA is aware that updated plans have been prepared by Energy Consultants. However, PEMA is recognized by the Federal Emergency Management Agency as the lead agency for radiologcial emergency planning and preparedness for the Commonwealth of Pennsylvania. In order to maintain a coordinated planning network to ensure that all parties which would be involved in a response effort in the event of an accident at Limerick are guaranteed direct input, FEMA believes that offsite emergency response plans relating to nuclear facilities located within the Commonwealth of Pennsylvania must be reviewed by PEMA prior to submission to our agency. FEMA recognizes the need for consultant involvement in the RERP process, but it is FEMA's responsibility to deal with the governmental jurisdictions responsible for the health and safety of their citizens.

PROFESSIONAL QUALIFICATIONS

James R. Asher

Emergency Management Program Specialist
Branch Chief, Technological Hazards
Natural and Technological Hazards Division
Federal Emergency Management Agency
Region III, Philadelphia, Pennsylvania

I am an Emergency Management Program Specialist in the Natural and Technological Hazards Division, Region III, Philadelphia, Pennsylvania and the Branch Chief of the Technological Hazards Branch.

I am the Federal Emergency Management Agency's representative to the Regional Assistance Committee and as that representative I serve as the Committee Chairman.

I have participated in all but one of Region III's Radiological Emergency Evaluation Exercises since my employment in June of 1980. My first assignment in this field was as an observer and since April 1982, I have been the Regional Assistance Committee Chairman and responsible for all off site planning and preparedness around the nine commercial nuclear power plants that impact the five states and the District of Columbia that make up Region III. These duties involve the coordination of all Radiological Emergency Response Plan reviews and the fielding of a multi-agency observer team for all Radiological Emergency Preparedness Exercises. I am also responsible for managing a program of preparedness and response to hazardous materials incidents to include coordination with the states in Region III and other Federal agencies. I am a member of the Region III Regional Response Team and FEMA's Emergency Response Team.

I served in the United States Navy during World War II and again during the Korean War. My service was overseas in both instances and included being the Shore Patrol for the first party of American G.I.s ashore at Hiroshima.

I served for twenty-six years in the Camden, New Jersey Fire Department holding all ranks from Firefighter to Battalion Chief.

I served as the Chief Fire Marshal for the Garden State Racing Association and as the Senior Field Coordinator for the Labor Recruitment Program of the International Firefighters Association. I served as a Field Coordinator for the Firefighter and Emergency Medical Apprenticeship Program conducted by the International Fire Chiefs and Fire Fighters.

I joined the Federal Emergency Management Agency as the Fire Representative in 1980 and continued in that capacity until obtaining my current position as the Branch Chief of Technological Hazards and the additional duty of the Regional Assistance Committee (RAC) Chairman.

I have attended the Radiological Emergency Response Course conducted by FEMA at the Nuclear Test Site in Nevada and the Senior Officers Nuclear Accident Course conducted at Kirtland Air Force Base, New Mexico.

PROFESSIONAL QUALIFICATIONS

RICHARD Z. KINARD
Emergency Management Specialist
Natural and Technological Hazards Division
Federal Emergency Management Agency (FEMA)
Region III, Philadelphia, Pennsylvania

I am an Emergency Management Specialist in the Natural and Technological Hazards Division of the Federal Emergency Management Agency, Region III, Philadelphia, Pennsylvania, and, as part of the Technological Hazards Branch, the project officer for the Limerick Generating Station and the Three Mile Island Nuclear Power Station. I developed the "Interim Findings of the Offsite Radiological Response Plans for the Limerick Generating Station," dated April 1984, the "Informal Evaluation of the Offsite Radiological Emergency Response Plans Site-Specific to the Limerick Generating Station," dated April 27, 1984 and the "Exercise Evaluation Report" of September 19, 1984, and am therefore knowledgeable about the offsite emergency plans developed for accidents at Limerick.

Prior to my employment with FEMA, I received a Bachelor of Arts degree in Political Science from The American University in 1974 and a Master of City Planning degree from the University of Pennsylvnia in 1976.

Training courses that I have attended include: Radiological Emergency Planning Seminar conducted at FEMA's National Emergency Training Center between June 22-26, 1981, and involving such subjects as nuclear plant operations and functions, offsite planning and preparedness and public meetings held to fulfill the requirements of 44 CFR 350.10; Radiological Emergency Response Training conducted at the Nevada Test Site between May 13-22, 1981, and involving such subjects as radiation - its properties and effects, radiation monitoring instruments, protective equipment, public and press relations, meteorology and its effects on nuclear power plant accidents, and response to radiation incidents; and Senior Officers Nuclear Accident Course conducted at Kirtland Air Force Base between May 4-6, 1982, and involving such subjects as nuclear weapons accidents, hazards and response.

My service with FEMA, beginning in December 1976, has included work with the National Flood Insurance Program (NFIP) in the area of floodplain management. This involved planning, policy interpretation and implementation, along with extensive interaction with other Federal agencies, State and local governments and the general public. I developed a "model" floodplain ordinance and assisted in the formulation of a standard form used to evaluate communities' conformance with the regulations of the NFIP.

Since November 1980 I have worked in the Radiological Emergency Preparedness Program. In addition to Limerick and TMI, I have also been project officer for the Calvert Cliffs Nuclear Power Plant and the Peach Bottom Atomic Power Station. As project officer of various plants, my major responsibilities have included preparing reviews of the offsite emergency plans and exercises. This process has included the review and analysis of plans and related documents, providing interpretation of agency programs, policies and rules, the coordination of input provided by members of the Regional Assistance Committee, as well as coordinating a team of individuals in the observing of various political jurisdictions' capabilities to respond to nuclear power plant accidents.

I have participated, as a member of FEMA Region III's Emergency Response Team, in a full-scale test of local/state/federal interface as part of a simulated nuclear weapons accident response (NUWAX-83).

JOSEPH H. KELLER

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, quantative analysis, instrumental analysis, advanced inorganic chemistry and laboratory radiochemistry.

8/66 - 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 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., Idhao Falls, ID. Responsibilities included contract support on performance gaseous rad waste processing equipment in a BWR and analysis of sources of inplant 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 worlds 1st known natural fission reactor and the supervision of an analysis laboratory for environmental samples. Conducted contract research in support of NRC.

12/78 - present

Employed as scientist by Allied Chemical Corp., Exxon Nuclear Idaho Co., Inc., (After 7/3/79), and Westinghouse Idaho Nuclear Company, Inc. (after 3/1/84), 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 existance 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}C and ^{3}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 or scavenging of the environment airborne radioiodine by rain or snow.

Testified as FEMA witness at Indian Point ASLB hearing.

Adjunct facility member at FEMA Emergency Management Institute.

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Question A: Is there sufficient information in the draft Chester and Montgomery County and school district RERP's to reasonably assure that there will be enough buses to evacuate the schools, both public and private, in one lift?

Answer A: The applicable standards with respect to this admitted contention are described in NUREG-0654, Planning Standards C(4) and J(10)(g) and at 10 CFR 50.47(b)(3) and (10).

These planning standards require in pertinent part that arrangements be made to insure the availability of organizations which will be used in school evacuations and to specify the procedures and means to be utilized to carry out the evacuation.

The "one lift standard" in the context of this contention is one adopted by the RERP's of the school districts in the Limerick plume exposure EPZ.

This planning standard has not been met. Overall planning is incomplete regarding the provision of buses to evacuate all EPZ schools in Chester and Montgomery County, both public and private, in one lift. This is due to the fact that, in many instances, the identification of needed resources, especially for private schools, has not taken place.

Where unmet needs have been identified at the school district level, the resources necessary to fulfill those needs have not been clearly delineated. This is evident in Appendix 3 to Annex I of the Chester County plan, which is blank, indicating that Chester County's bus needs have not yet been identified. In addition, Appendix I-3 of the Montgomery County plan recognizes required needs but does not address how, or from where, these buses will be obtained. (FEMA refers throughout this pre-filed testimony to draft municipal and county RERPs. These plans were forwarded to the Board by PEMA in December of 1983, so FEMA has not attached additional copies of the draft plans to this testimony.)

In addition, Annexes T to the two county plans acknowledge the necessity for agreements between the respective counties and transportation providers. However, no agreements have been included in the plans provided to FEMA by the Pennsylvania Emergency Management Agency.

FEMA has expressed its concern over the status of evacuation resources, most recently in its September 19, 1984 "Exercise Evaluation Report" as Category "A" Deficiency 2, page 136, as well as in the "Interim Findings on the Offsite Radiological Emergency Response Plans for the Limerick Generating Station," page 10, dated April, 1984. Another, more detailed reference is contained in the FEMA/RAC "Informal Evaluation of the Offsite Radiological Emergency Response Plan Site-Specific to the Limerick Generating Station," page 15, dated April 27, 1984.

Question 1: Is there assurance that bus companies are committed to providing sufficient buses to assist in an evacuation in the event of a radiological emergency at Limerick?

Answer 1: The current plans have not proceeded to the point where resources have been tied to specific transportation companies, and the necessary letters of agreement have not been executed. Thus, there is no assurance that an adequate number of buses is available to evacuate school children in one lift.

Question 2: Do the school district and county RERP's contain reliable letters of agreement with bus companies?

Answer 2: Since FEMA has not seen any letters of agreement concerning transportation requirements, we cannot comment on their adequacy, other than to state that we are not aware of their existence.

Question 4: Are school districts and county RERP's deficient because they fail to indicate assignment of buses to particular schools?

Answer 4: The concern expressed by this question does not relate to school districts with their own bus resources (Methacton being an example). The school district and county plans do not call for the assignment of particular buses to specific schools. There is no planning standard which would require FEMA to reject such plans simply because buses were not pre-assigned to particular schools. The current planning approach allows the various jursidictions the flexibility to

respond according to the particular circumstances at the time of an emergency. Therefore, FEMA does not conclude that the school district and county RERP's are deficient because they fail to indicate assignment of buses to particular schools.

Question 5: Must school districts adjacent to and outside the EPZ take into consideration whether or not bus resources have been committed to provide assistance in the EPZ and must they develop emergency procedures that do not conflict with arrangements made by bus companies for transportation assistance to risk school districts?

Answer 5: FEMA does not mandate planning for areas outside the plume exposure EPZ (other than deling with ingestion pathway concerns) that would not have a direct impact on a potential evacuation. In this light, it would appear to be wise for any jurisdiction that would be indirectly involved with an evacuation at Limerick to make contingency plans in order to lessen any effects the evacuation would have on that jurisdiction. School districts within the EPZ should have priority for transportation resources during a radiological emergency.

Question 6: Is there reasonable assurance that unmet transportation needs identified in the most recent draft county RERPs have been or can be obtained?

Answer 6: FEMA does not believe the current plans provide reasonable assurance that unmet transportation needs have been or can be obtained. We base this conclusion on our responses to Answers A, 1, and 2 above.

Question 7: Is there reasonable assurance that buses sent from other areas can evacuate children in a timely manner, due to the fact that the RERPs fail to include assignment listings?

Answer 7: There is no planning standard which mandates pre-assignment of buses. As stated in our answer 4, we do not believe there is currently a reasonable assurance of adequate buses to evacuate the Chester and Montgomery County schools, but this determination is not based on the fact that the RERPs do not contain pre-assignment listings.

Question 9: Has Chester County obtained written agreements with bus companies to provide transportation for school districts in the event of a radiological emergency?

Answer 9: Not to FEMA's knowledge.

Question B: Are the draft Montgomery, Chester and Berks County RERPs capable of being implemented if there is no reasonable assurance that there will be sufficient numbers of teachers and staff required to stay at school during a radiological emergency if sheltering is recommended as a protective measure, or that there will be sufficient numbers of school staff available to evacuate with children in the event of a radiological emergency? Therefore, are children adequately protected by the draft RERPs?

Answer B: The planning standards relating to this contention are stated at NUREG-0654, Planning Standard A(1)(a), (b) and (d) and A(4), and at 10 CFR 50.47(b)(1), in pertinent parts:

> Each organization and suborganization having an operational role shall specify its concept of operations, and its relationship to the total effort.

and

> The individual in the principal organization who will be responsible for assuring continuity of resources (technical, adminsitrative, and material) shall be specified by title.

FEMA believes that the history of response to emergencies shows a willingness by individuals to perform their duties. In fact, in many instances more people than just those predesignated in the various governments' staffing charts volunteer their services. Individuals who have a clear understanding of their roles in an emergency plan do not abandon those roles in time of emergency.

According to the school district plans, the respective superintendents of schools are responsible for exercising "all authority granted in accordance with the policies set forth by the school board and the laws of the Commonwealth of Pennsylvania" and are "responsible to the school board(s) for all school emergency plans and procedures assuring the safety of students and staff in the event of an incident at the Limerick Generating Station." Finally, the various school district RERPs state that "all students, school buildings, school equipment, staff and contracts will remain under the supervision and control of the superintendent of schools." Other than the letter from the Pennsylvania State Education Association (PSEA) expressing concern over the availability of teachers in the event of a radiological emergency, FEMA is not aware of any specific instance, either in Pennsylvania or nationwide, where significant numbers of teachers have refused to assist in the protection of their students in the event of an emergency.

Under such circumstances FEMA does not conclude that there will not be adequate numbers of teachers and staff willing to remain at schools for sheltering purposes or willing to evacuate with students in the event of an evacuation.

Question 1: Has adequate consideration been given to parental/child behavior and family decision-making patterns? Specifically has adequate information been given to families residing within the 10-mile EPZ regarding emergency planning?

Answer 1: First of all, there is no planning standard addressing the need to consider family decision-making patterns in analyzing offsite emergency planning issues. In its September 24, 1984 Order, the Board stated that the issues which the intervenor raised in the context of "parental-child behavior" and "family decision-making patterns" must be ruled out, "... except as they would have a bearing on whether staff and drivers would suffer conflicts between their public and their private duties, and what sort of conflicts." See page 8 of the Board's September 24, 1984 Order. Because of their training, most individuals involved in an emergency response develop procedures to assure the safety of their families during emergency conditions. This pre-planning should allow individuals to fulfill their emergency duties with reasonable assurance that their families are adequately taken care of.

The second aspect of this question involves a concern over information for the public at-large, as well as for teachers. Regarding the latter point, in our discussions with PEMA it is apparent that training of both school staff and adminsitrators, conducted by Energy Consultants, a private consultant, has been ongoing. FEMA has not had an opportunity to observe the training in order to judge its effectiveness. Emergency information brochures are in draft form and have not been distributed to the general public. These brochures, as called for under Planning Standard G, Public Education and Information, will include such information as: how individuals will learn of a nuclear accident; what to do if you are instructed to take shelter or if you are told to evacuate, what

to take with you and what you should do if you need transportation; school information; where to go if you have to evacuate, including a map showing the major evacuation routes; rumor control numbers; and other general information such as how accidents are classified and what is radiation. The school district plans also contain sample letters to be sent to parents explaining the process the school district will follow in the event of a radiological emergency at Limerick. FEMA believes that this information is important to all members of the public, including teachers, in order that they may be clearly informed concerning the procedures to be utilized during a radiological emergency response. There are no admitted contentions relating to the adequacy of the distribution of information to the public generally, or of brochures in particular.

Question 2: Is there a need for pre-identification of teacher volunteers and is there any basis to assume that emergency responsibilities should be considered part of a teacher's contractual obligations?

Answer 2: As stated in our answer to the overall contention, we expect teachers to fulfill their responsibilities in protecting their school children, irrespective of the concerns raised by the PSEA. As the infrastructure currently exists for the teachers to be on hand at a school in the event that an accident at Limerick should occur, and there is no definitive indication that the teachers would not remain with their students, there does not appear to be a need to predesignate teacher volunteers.

Question 3: Has there been a determination as to which school district buildings are adequate for sheltering purposes?

Answer 3: FEMA has not been informed of any determinations as to which school district buildings are adequate for sheltering purposes. On the other hand, there are no planning standards which require such determinations to be made. The Commonwealth of Pennsylvania has adopted the policy that if a protective action is necessary it will be implemented for the entire 10-mile EPZ. Thus, if sheltering was decided as the proper course, it would impact all areas within approximately 10 miles of the plant. The Bureau of Radiation Protection, along with PEMA would reach a decision whether to shelter or evacuate based on a number of different factors. The "Bases of Protective Action Recommendations" is contained as Section 10.2 of Appendix 12 to Annex E to the Commonwealth of Pennsylvania Disaster Operations Plan.

Question 4: Is post-training surveying necessary to determine if there is reasonable assurance that teachers/school staff are willingly making an informed decision to volunteer to participate in the event of a radiological emergency, and to evaluate the effectiveness of the training program?

Answer 4: There is no planning standard mandating such post-training surveying. As the Board has stated on page 10 of its September 24, 1984 ruling, "neither regulations nor guidance explicitly call for these, and similar remedies proposed under other contentions." Just as there has been no contention filed concerning the training of volunteer municipal workers or their reliability in the event of an accident at Limerick, FEMA sees no reason to specifically focus on teachers. As was stated earlier, there is no indication at present that teachers will not respond to an emergency at Limerick. Thus, FEMA does not see a requirement for post-training surveying of teachers.

Question 5: Are unannounced evacuation and sheltering drills necessary to determine the effectiveness of training programs?

Answer 5: Planning standard N of NUREG-0654 and 10 CFR 50.47(b)(14) call for periodic exercises to evaluate emergency response capabilities and for drills to develop and maintain emergency response skills. Paragraph 1(b) of Planning Standard N specifies that "some exercises shall be unannounced." However, it is not essential that all exercises be unannounced. FEMA believes that drills and exercises are always a good mechanism for testing the viability of plans. Because of our concern over the lack of complete planning for school children and the fact that the exercise took place during the summer, FEMA highlighted the need for some type of demonstration of school district evacuation plans. FEMA has made arrangements with PEMA to hold such a drill on November 20, 1984.

Question 6: Should the school distict RERPs require trained school staff on buses in the event an evacuation is ordered?

Answer 6: There is no planning standard which mandates that there be school staff on evacuation buses, nor does FEMA believe that the lack of school staff on buses would necessarily preclude efficient evacuation of school children. The school district RERPs call for training of school staff (see Section III of Pottstown School District RERP, for example), so we assume that any school staff on evacuation buses will have received training. Most school district plans reflect the fact that "designated risk school faculty/staff will accompany evacuated students to the designated host schools in the buses or in their private vehicles..." (see Section II(G)(3)(d) of Pottstown School District RERP, for example).

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Question C: Must there be specific and adequate plans for children in day care, nursery, and pre-school programs in order to provide reasonable assurance that this particularly sensitive segment of the population is adequately protected?

Answer C: There is no planning standard in NUREG-0654 or in 10 CFR 50.47 which describes any special planning mandates for these types of institutions. The Board has determined that there is no requirement for separate plans for each of these institutions in the plume exposure EPZ. Based on a review of the county and municipal RERPs supplied by the Commonwealth of Pennsylvania, assurance cannot be provided that adequate and specific arrangements have been made to provide for the protection of children in day care, nursery and pre-school facilities, as there is no specific reference to these facilities in the appropriate municipal or county plans.

FEMA relies on the Commonwealth of Pennsylvania and county and municipal governmental RERPs for documentation of procedures to address these various institutions. Although there are no specific FEMA or NRC mandates that require detailed site-specific plans for each and every school or institution in the EPZ, adequate arrangements should be made for these children.

Based upon information supplied to FEMA on October 11, 1984 it appears that planning is proceeding for day care, nursery, and pre-school programs. On that date, a "model" Radiological Emergency Response Plan for Day Care Centers/Homes or Nursery Schools for Incidents at the Limerick Generating Station was provided by PEMA to FEMA.

Question 2: Is the general transportation survey sent out to the public sufficient to determine the needs of pre-school, day care/nursery school and summer camps?

Answer 2: The general transportation survey sent out to the public has not been submitted to FEMA for review. Therefore, FEMA can make no determination on its adequacy.

Question 3: Do present municipal and county RERPs adequately identify day care, nursery, and pre-school centers?

Answer 3: The municipal and county RERP's which have been submitted to FEMA do not identify these institutions in the respective municipalities and counties. As stated in the overall response to this contention, FEMA relies on the Commonwealth of Pennsylvania, the three counties, and the municipal governmental RERPs for identification of day care, nursery and pre-school centers. Only these governmental jurisdictions have detailed knowledge of local day care, nursery and pre-school centers. LEA-27 suggests that all of these institutions have not been adequately identified.

Question 4: Should pre-assignment of transportation resources to these potentially difficult and sensitive members of the population be arranged and coordinated by the municipality within which the facility is located?

Answer 4: There is no planning standard which mandates pre-assignment of transportation resources to these types of institutions. Therefore, it is not essential that pre-assignment of transportation resources to these institutions be performed.

Question 5: Would any decision to shelter be a last resort because of the extremely volatile nature of this special population, as well as their parents?

Answer 5: The basis for decision-makers to opt for sheltering rather than evacuation are contained in Section 10.2 of Appendix 12 to Annex E to the Commonwealth of Pennsylvania Disaster Operations Plan. There is no mandate that sheltering considerations for this special population be different than those for the general public.

Question 6: Is the participation and commitment of the staff to implement planning essential to its workability, since very young children need to feel a sense of continuity and trust in their caretakers?

Answer 6: Although there is no planning standard relating explicitly to this issue, FEMA believes that the participation and commitment of the staff of these institutions to implement planning is essential to its workability since very young children need to feel a sense of continuity and trust in their caretakers. The history of disaster response has consistently shown that individuals charged with emergency responsibilities, including teachers, meet their responsibilities when faced with emergency situations. Continued improvement in training and public education will provide a higher confidence level to emergency responders regarding the safety of their families.

LEA-14

Question D(a): Are the school district RERP's and the Chester, Berks and Montgomery County RERPs deficient because there are inadequate provisions for units of dosimetry/KI for school bus drivers, teachers or school staff who may be required to remain in the EPZ for prolonged periods of time or who may be required to make multiple trips into the EPZ in the event of a radiological emergency due to shortages of equipment and personnel?

Answer D(a): NUREG-0654, Planning Standard K(3)(a), requires that each organization with offsite emergency planning responsibilities "shall make provision for 24 hour per day capability to determine the doses received by emergency personnel involved in any nuclear accident, including volunteers." In addition, Planning Standard J(10)(e) of NUREG-0654 states that State and local organizations responsible for offsite emergency planning must develop plans which contain, among other things, "provisions for the use of radioprotective drugs, particularly for emergency workers ... whose immediate evacuation may be infeasible or very difficult ...." At this time FEMA is unable to conclude that the school district RERP's and the Chester, Berks and Montgomery County RERP's are adequate with respect to the provision of units of dosimetry/KI for school bus drivers, teachers or staff. However, FEMA wishes to defer delivering a final opinion on this matter until LEA-11 has been resolved. We expressed our viewpoint in response to LEA-11

that currently there is not adequate assurance that all school students can be evacuated in one lift. If it is determined at a later point that enough bus resources are available to evacuate students in one lift, then teachers, staff and students will be in the same situation as the general public in that there will not be a need for KI and dosimeters for them. If LEA-11 cannot be resolved in a positive manner, i.e., if the evacuation of all school children within the 10-mile EPZ cannot be accomplished in one lift, then FEMA would feel there is a need for dosimetry/KI for school bus drivers, teachers or staff.

Question 1: Are the school district and county RERP's deficient because plans for distribution of dosimetry/KI kits for bus drivers are inadequate?

Answer 1: As stated above, until the issues raised by LEA-11 have been resolved, FEMA wishes to defer final comment regarding this question. If dosimetry for bus drivers becomes a necessity, then an adequate distribution scheme will be needed.

Question 2: Are the number of units of dosimetry/KI available at county transportation staging areas adequate?

Answer 2: According to telephone conversations with PEMA and county RERP's provided to FEMA by PEMA, there is a general lack of certain items of dosimetry and KI, and this would impact on any equipment to be provided at transportation staging areas. It should be noted

that Annex I - Transportation, page I-1 of the county plans does not make reference to transportation resources at transportation staging areas being positioned and assigned for the purpose of evacuating school children. The need for dosimetry should be deferred until LEA-11 has been resolved.

Question 3: Should sufficient units of dosimetry/KI be distributed to each school district for use by school staff?

Answer 3: FEMA wishes to defer making a final statement as to the need for dosimetry for school teachers and staff until the policy of evacuating school students in one lift has been resolved.

Question 4: Must school staff be trained in the use of dosimetry in the event that sheltering is recommended as a protective action?

Answer 4: There is no planning standard which requires training in the use of dosimetry for the general public. As we noted in our response to LEA-12, the implementation of sheltering as a protective measure would be on an EPZ-wide basis and would only be instituted under specific conditions. Thus, such sheltering would affect the public at-large in all sheltering situations. FEMA therefore does not believe it is essential to train school staff in the use of dosimeters, at least to the extent that there is a reasonable assurance the one lift standard for schools can be met.

Question D(b): Do the Chester, Berks and Montgomery County school district RERP's fail to provide reasonable assurance that school bus drivers, teachers or other school staff are properly trained for radiological emergencies?

Answer D(b): NUREG-0654, Planning Standard O, and 10 CFR 50.47(b)(15) mandate that there be training for those who may be called upon to assist in the event of an emergency at Limerick. Immediately prior to the filing of this pre-filed testimony, FEMA received from PEMA plans for training, among other individuals, school teachers and staff and bus drivers who might be called upon to respond in the event of a Limerick emergency. FEMA has not had an opportunity to analyze the content of these training plans, so we are not able to assess their adequacy at this time. We do note that the majority of the school district RERP's explicitly call for training of school teachers and staff. However, at this time FEMA is unable to make a definitive determination regarding the adequacy of training of bus drivers, school teachers and staff.

Question 1: Should school staff and bus driver training include procedures for dealing with contaminated individuals and equipment?

Answer 1: NUREG-0654, Planning Standard L, and 10 CFR 50.47(b)(12) require that arrangements be made for provision of medical services for contaminated people. NUREG-0654, Planning Standard K(5)(b) also calls for establishing "the means for radiological decontamination of emergency personnel wounds, supplies, instruments and

equipment..." The various county plans have established the procedures for dealing with these issues under Annex G, Medical Support, and Annex M, Radiological Exposure Control. This standard does not specifically mandate such training for school staff and bus drivers. Therefore, FEMA does not believe there is any requirement that school bus drivers and school staff be trained for dealing with contaminated individuals and equipment.

Question 2: Should school bus drivers, teachers and staff be trained concerning the risks of exposure to radiation and the proper use of necessary equipment?

Answer 2: FEMA at this time does not have sufficient information concerning the model training plans for school bus drivers, techers and staff which have been developed for use in the Limerick plume exposure EPZ, nor of the actual training which has been provided, to state definitively what the training relates to and whether the training is adequate. Therefore, we are currently unable to determine whether the school district RERP's and implementation of those plans fail to provide reasonable assurance that school bus drivers, teachers and staff are properly trained for radiological emergencies.

Question 3: Should school district RERP's provide assurances that bus drivers are familiar with the routes to which they are assigned?

Answer 3: FEMA does not question the proposition that bus drivers who may be called upon to assist in the evacuation of school children should be familiar with the routes to which they may be assigned. Nevertheless, at this time FEMA is unable to state definitively whether or not the current school district RERP's, in conjunction with the proposed training activities for bus drivers, provide reasonable assurances that the bus drivers will be familiar with the routes to which they may be assigned during radiological emergencies.

LEA-15

Question E: Are the Chester and Montgomery County RERP's and the school district RERP's capable of being implemented if the provisions to provide bus drivers who are committed to being available during a radiological emergency, or even during preliminary stages of alert, are inadequate?

Answer E: NUREG-0654, Planning Standard C, and 10 CFR 50.47(b)(3) require that procedures are developed to provide a reasonable assurance that adequate numbers of bus drivers will be available during a radiological emergency. As we explained in our response to LEA-11, at this time the necessary procedures to assure the availability of adequate numbers of bus drivers to evacuate all school children within the 10-mile EPZ within one lift have not been developed.

Question 2: Are there letters of agreement that indicate that bus companies are able to provide adequate numbers of bus drivers in the event of a radiological emergency?

Answer 2: NUREG-0654, Planning Standard C(4), indicates that there is a need for letters of agreement with bus companies in this regard. FEMA stated in the response to LEA-11, Question 2, that we cannot comment on the adequacy of letters of agreements with bus companies, as we have not had the opportunity to review them. Letters of Agreement were not included in the copies of the Montgomery and Chester County RERP's supplied to us by PEMA.

Question 3: Is there any indication of the terms of employment contracts between bus companies and drivers and is there assurance of pre-identification of bus driver volunteers assigned to carry out an evacuation in the event of a radiological emergency?

Answer 3: The planning process which has been reviewed by FEMA has not progressed to a point where the details of bus evacuation of school children have been clearly described. FEMA has not reviewed, or been asked to review, the terms of employment contracts between bus companies and drivers. Nor is FEMA aware of pre-identification of bus drivers who would be assigned to carry out an evacuation in the event of a radiological emergency. It is noteworthy that there is no planning standard which mandates the pre-identification of bus drivers who would be assigned to assist in an evacuation. FEMA believes that once a bus company has agreed to provide its bus resources for the evacuation of school children from the 10-mile EPZ, such company has committed itself to ensuring that bus drivers are available to drive the buses in the absence of indications to the contrary.

Question 4: Is there assurance that bus drivers will be familiar with the routes they are assigned during a radiological emergency?

Answer 4: FEMA stated in its response to LEA-14 that provisions should be made to familiarize bus drivers with the routes they are assigned in the event that it is necessary to evacuate the schools as a result of a radiological emergency. From our review of the plans there is no indication that the mechanism for such familiarization currently exists.

Question 5: Is there any assurance that bus drivers are aware of their role in providing transportation from host schools to mass care centers?

Answer 5: We assume that as part of their training, bus drivers will receive all the information they would need to perform their duties during a radiological emergency, including the need for certain bus drivers to provide transportation of some school students from host schools to mass care centers. FEMA is aware that training of bus drivers is being conducted by Energy Consultants, but at this time FEMA is not familiar with the specifics of such training and is therefore unable to comment on the adequacy of such training.

Question 6: Is there any basis to assume that bus drivers will carry out their responsibilities to assist with an evacuation of the EPZ and is bus driver training essential to developing confidence in the workability of both the school district RERP's that the bus driver participates in, and other planning measures that will involve members of families of bus drivers?

Answer 6: Regarding the first question, FEMA stated in its response to questions in LEA-12 that the history of response to emergenices shows a willingness by individuals to perform their duties. Individuals who have a clear understanding of their roles in an emergency plan do not abandon these roles in time of emergency. Concerning the second question, FEMA believes that both a comprehensive training program for responders, including bus

drivers, and a good public information program generally, are needed in order to give everyone involved in, or affected by, a radiological accident at Limerick, a clear understanding of the response mechanism. However, at this time FEMA is unable to make any determinations as to the adequacy of the on-going bus driver training.

Question 7: Must an evaluation of bus driver availability be done in the context of other bus driver needs?

Answer 7: FEMA expects that if the procedures for the evacuation of school children have been adequately completed, the one-lift standard called for in the school district RERP's would clearly establish that the evacuation of school children has priority over any other responsibility (if any) given to specific bus drivers by emergency management authorities.

LEA-22

Question F: Are the state, county, and municipal RERP's inadequate because farmers who may be designated as emergency workers in order to tend to livestock in the event of a radiological emergency have not been provided adequate training and dosimetry?

Answer F: NUREG-0654, Planning Standards K(3)(a) and O require that the Commonwealth, county and municipal RERP's must provide for training of emergency workers and availability of dosimeters for emergency workers. The RERP's do call for training and the provision of dosimeters generally, but not to farmers in particular. As was noted in FEMA's April 1984 "Interim Findings" and the "Informal Review" of April 27, 1984 there was a concern over the general lack of dosimetry for emergency workers. As farmers who would re-enter an evacuated EPZ or remain in the EPZ would be classified as emergency workers in the event of an evacuation, this concern would have an impact on them. At present there is no reasonable assurance that adequate dosimetry is available for farmers who would need to reenter or remain in an evacuated plume EPZ nor is there any indication in the plans of specific training for farmers. However, PEMA has informed FEMA that ECI, a consultant to the applicant, has been conducting training sessions oriented towards farmers. In addition, immediately prior to the filing of this pre-filed testimony FEMA received a document describing proposed training for farmers in the Limerick EPZ. We have not at this time had an opportunity to determine the adequacy of such training plans or, for that matter, of any training for farmers which has actually taken place.

Question 1: Do the county RERPs fail to provide the actual number of farmers in the EPZ who may require dosimetry, including making provisions for multiple reentries and for insuring enough units are available to cover farmers over a period of several days?

Answer 1: The current county plans do not indicate the number of farmers in the EPZ who may require dosimetry. FEMA believes that some type of survey should be conducted (if it has not been already) to determine at least the approximate number of farmers who might need dosimetry in the event of a radiological emergency at Limerick. In our response to the overall contention, FEMA noted that there is not currently adequate assurance that sufficient dosimetry exists for emergency workers. This conclusion relates to farmers, to the extent they are emergency workers. If adequate dosimetry is obtained, the RERP's should address the issue of multiple reentries, as any self-reading dosimeter is reusable only after having been recharged.

Question 2: Must the county RERP's clearly define "livestock" to include fowl, horses, cows and sheep, and should the term "farmer" include people owning or operating farms, not limited to USDA lists?

Answer 2: In discussions with the U.S. Department of Agriculture, FEMA was informed that livestock is defined as a red meat animal and that poultry would be considered a separate catagory. In both instances

FEMA sees a justification for farmers to reenter an evacuated plume emergency planning zone. USDA utilizes the definition of "farm operator" developed by the Agriculture Division of the U.S. Bureau of the Census and contained in the Census of Agriculture, Vol. 1, Appendix A, 1982." It would appear that nothing in the above-referenced document would be at variance with the terminology for "farmer" that has been suggested by LEA.

Question 3: Should an informational brochure be regularly mailed to each farmer with livestock explaining their status, their rights, reentry information and conditions, location and distribution of dosimetry, and information relating to the effects of radiation exposure to humans and animals?

Answer 3: There is no planning standard which requires the distribution of informational brochures to emergency workers generally, or in particular to farmers who are defined as emergency workers. However, there is certainly no prohibition on the distribution of informational brochures to farmers. The Pennsylvania Department of Agriculture has printed a pamphlet entitled "Farmers Emergency Information, What You Should Know About Nuclear Power Plant Incidents" (copy attached). This information has been distributed to farmers in the vicinity of TMI. The document appears to address in adequate detail the overall concerns raised by LEA and it would be helpful to distribute copies to farmers in the Limerick area.

Question 4: Should regular training be offered and should it cover the points listed in Question 3?

Answer 4: NUREG-0654, Planning Standard O, and 10 CFR 50.47(b)(15) require training for emergency response personnel. Therefore, to the extent farmers are considered emergency workers they should be offered regular training covering the issues described in question number 3. As we have stated elsewhere in this pre-filed testimony, immediately prior to the filing of this testimony FEMA received a document describing proposed training for farmers in the Limerick EPZ. However, at this time FEMA has not been able to determine the adequacy of these training plans.

LEA-24/FOE-1

Question G: Is there any assurance that plans for evacuation of the 10-mile radius will not be impeded by traffic congestion in the vicinity of Marsh Creek State Park, Exton area and Valley Forge Park, King of Prussia area? Should these areas either be included in the Emergency Planning Zone or should adequate plans for traffic control and direction be made to avoid adverse effects on EPZ evacuation?

Answer G: NUREG-0654, in Planning Standard J, Elements J(10)(i) and J(10)(l), calls for "projected traffic capacities of evacuation routes under emergency conditions" and "time estimates for evacuation of various sectors and distances based on a dynamic analysis ... for the plume exposure pathway emergency planning zone." This information is contained in the "Evacuation Time Estimates for the Limerick Generating Station Plume Exposure Emergency Planning Zone," Final Draft, prepared by HMM Associates, Inc. for the Philadelphia Electric Company, and dated May 1984. FEMA is unable to determine whether the areas of concern which are adjacent to the plume exposure EPZ were included in the HMM evacuation analysis. To the extent the HMM study did not analyze the impact of traffic congestion in the areas of concern outside the Limerick EPZ, there is not an assurance that evacuation of the EPZ will not be impeded by such traffic. Where areas outside the EPZ might have a direct

impact on the amount of time it would take individuals to evacuate the 10-mile EPZ, that information should be included in the evacuation time estimate study, as it is essential information that would effect the length of the evacuation time. It should be emphasized that there is no "acceptable" limit for evacuating a plume exposure EPZ. The information is important, however, for the decision-makers at the state, county and local level as part of the data needed for them to be able to opt for either sheltering or evacuation. In order to make an informed decision, the various governmental officials must feel confident that the information available to them is as comprehensive as possible. This should include an evacuation study with all pertinent data. If the HMM study concludes evacuation of the plume exposure EPZ would be adversely affected by traffic congestion in those areas of concern outside the EPZ, then it would be incumbent upon the appropriate authorities to make the necessary plans to provide for the equipment and manpower to assist in traffic control during an evacuation.

LEA-26

Question H: Are the draft county and municipal RERP's deficient in that they do not comply with 10 CFR 50.47(b)(5) because there is no assurance of prompt notification of emergency workers who must be in place before an evacuation alert can be implemented, and because there is no assurance of adequate capability to conduct route alerting?

Answer H: NRC Rule 10 CFR 50.47(b)(5) requires "that procedures have been established for notification by the licensee, of state and local response organizations and for notification of emergency personnel by all organizations..." There is no mandate that all emergency workers must be in place before protective actions can be implemented. FEMA believes that the procedures drafted in the county and municipal RERPs comply with the requirements of 10 CFR 50.47(b)(5) and NUREG-0654, Planning Standard E(2). The county RERP's, in the Concept of Operations section, state that in the event of an incident at the Limerick Generating Station, Montgomery, Chester and Berks Counties will base their respective response actions on the specific incident classification adopted by the licensee.

Procedures are outlined in the Concepts of Operations of the three county RERP's for sequential emergency response actions approriate for each incident classification. For example, at the Unusual Event stage, county Emergency Operations Centers are notified. At the

Alert stage, selected county personnel are mobilized and the county EOC's are activated. In addition, municipal EMA (Emergency Management Agency) officials are mobilized and emergency services are placed on standby (references Annexes C, E, F and G). These procedures were demonstrated during the July 25, 1984 RERP exercise. Timely activation of the various EOC's took place at the Alert and Site Emergency phases, well before the simulated evacuation was declared. However, as noted in the Interim Findings, the specifics of the notification from the utility to the counties is incomplete from a planning standpoint. The review of Planning Standard E on page 6 of the report cited the need for specific details "as to the method to be utilized and the organization(s) who will be performing the notification to the counties, at each classification level."

There is no planning standard which requires the installation of redundant or supplemental alert and notification systems, such as route alerting. Therefore, the capability of supplemental systems is not essential to FEMA's review of the primary, i.e. siren, system.

Question 2: Is the phone notification system of emergency response organizations by the County EOC, prior to public notification, a complex process? If phone calls or notification and verification are to be used, will the notification of essential organizations and staff delay siren activation?

Answer 2: FEMA feels that any notification of emergency response personnel must be as rapid as possible. However, as was stated in the response to the overall contention, the activation of the public alert and notification system is not contingent upon the complete notification of "essential" orgnaizations. As Annex C to the various County RERP's clearly states, the director of the respective county emergency management agencies has the overall responsibility for the activation of the public alert and emergency broadcast systems. If it was critical, in a fast-breaking incident, to activate the public alert and notification system in virtually an instantaneous manner, the contacts necessary to do so would be minimal. If an accident is a slow-moving event, the system established to partially activate the EOCs at Alert and fully mobilize at Site Emergency should allow enough time for the various emergency response organizations to be notified.

Question 3: Do the municipal RERP's fail to indicate the number of volunteer fire company personnel that would or could be available at the time of a radiological emergency?

Answer 3: The municipal RERP's do not indicate the number of volunteer fire company personnel which would be available at the time of a radiological emergency at Limerick. However, if the testing of the primary alert and notification system proves successful, then FEMA does not view route alerting as a necessity, but rather as a supplement to the designated system, i.e., sirens.

LEA-27

Question I: Are there specific and adequate plans to protect Camp Hill Village Special School, Inc. in East Nantmeal Township, Chester County and for Camp Hill Village School in West Vincent Township, Chester County?

Answer I: The ASLB has specifically stated that there is no need for specific plans for each school. FEMA does not require that individualized plans be developed for each school, only that the composite planning effort by the responsible jursidictions adequately address the needs of all of the schools under its control. As FEMA concluded in response to LEA-13 we do not believe that adequate arrangements have at this time been made to insure the protection of people in these institutions in light of the fact that the Chester County plan makes no reference to these facilities.

Question 1: Have written plans been developed for either facility?

Answer 1: No written plans have been developed relating to these specific facilities to FEMA's knowledge. However, as we stated above, there are no planning standards which mandate such specific plans.

Question 3: Have equipment needs, including transportation needs, been assigned?

Answer 3: There is no assurance from a review of the applicable township plans that adequate arrangements have been completed for providing the necessary equipment, including transportation, to the referenced institutions.

Question 4: Has the evaluation of adequacy of school buildings for sheltering purposes been assigned?

Answer 4: As stated in our response to LEA-12, Question 3, there are no planning standards which require an evaluation of school buildings for sheltering purposes. If sheltering is chosen as the most appropriate protective action, it will impact all areas (and structures) within approximately 10 miles of the plant.

Question 6: In the event that responsibility for emergency response planning is passed on to the municipality, has it been determined that either of the municipalities involved are able to meet the needs of these schools, due to the fact that there are large numbers of mobility- and intellectually-impaired individuals involved?

Answer 6: Final comment will be deferred until the planning process has been finalized and reviewed. At this time FEMA is unable to make such a determination.

LEA-28

Question J(a): Is there assurance in the county or municipal RERP's that the National Guard will have time to mobilize to carry out its responsibilities with regard to towing and providing emergency fuel supplies along state roads?

Answer J(a): NUREG-0654, Planning Standard E(2), calls for each organization to "establish procedures for alerting, notifying, and mobilizing emergency response personnel," while Planning Standard A(1)(b) calls for each organization and suborganization having an operational role to "specify its concept of operations, and its relationship to the total effort." The county RERP's state that assistance from the National Guard "will be furnished on a minimum essential basis required to minimize the effects upon the civilian population caused by an incident at the Limerick Generating station and will be terminated at the earliest practical time."

Such emergency assistance, which could include towing and providing emergency fuel assistance, "will be furnished in coordination with and supplementary to the capabilities of municipal and county governments and other state agencies and departments." (Annex H - Montgomery County RERP, Draft 5; Berks County RERP, Draft 5).

Primary and initial emergency response services are the responsibilities of the state, county and municipal authorities. Therefore, mobilization time of the National Guard should not detract from an effective response.

Question J(b): Is there assurance provided in the municipal or county RERP's that there are sufficient resources available to provide towing, gasoline, and snow removal along non-state roads? According to PEMA, the National Guard has neither the resources for snow removal nor the responsibilities for it, according to the Commonwealth's Disaster Operations Plan.

Answer J(b): NUREG-0654, Planning Standard J(10)(k), calls for the "identification of and means for dealing with potential impediments ... to use of evacuation routes, and contingency measures." Currently, there is not assurance that the county and municipal RERP's contain adequate procedures for providing resources for towing, gasoline supplies, and snow removal. The municipal plans state that snow removal and debris removal are the responsibility of the Pennsylvania Department of Transportation (PennDOT) and municipal road maintenance departments. Additional information, including more specific implementing procedures, letters of agreement with towing services, gas stations, etc. and resource requirements is needed.

As first noted in the April 1984 "Interim Findings" and the "Informal Evaluation" dated April 27, 1984, removal of traffic impediments, roadway clearance, and provision of fuel resources have been identified as the responsibility of the Public Works Officer/Group of the three risk counties and/or the local municipalities. Documentation of resources to support municipal and county needs for addressing these issues remains incomplete in many cases. Once all of the necessary assistance has been identified, agreements, letters of intent, or statements of understanding, as required in the county and municipal plans, should be included in the appropriate RERP's. At this time the planning in this context is inadequate.

CITY-18

Question K: Is the state plan inadequate in the area of emergency planning becuase there is no implementable plan for providing an alternate source of water for the City of Philadelphia?

Answer K: Planning Standard J(11) of NUREG-0654 calls for each state "to specify the protective measures to be used for the ingestion pathway, including the methods for protecting the public from consumption of contaminated food stuffs." According to information supplied by the Bureau of Radiation Protection to FEMA, impoundment will protect the public from ingesting contaminated water. Therefore, that is the option the Commonwealth will recommend in the face of potential contamination to water supplies, as it provides the most effective dose avoidance.

NUREG-0654, Planning Standard J(9), provides for each state and local organization to "establish a capability for implementing protective measures based upon protective action guides and other criteria." As the water authority is under the jurisdiction of the City of Philadelphia, FEMA would expect the City to make whatever contingency plans they feel would be necessary to deal with a possible loss of water supply in the event of an accident at Limerick. We assume that the Commonwealth of Pennsylvania wold provide Philadelphia necessary assistance in resolving this problem; however we do not feel the state plans are inadequate because they do not contain detailed arrangements for providing an alternative source of water for the City of Philadelphia.

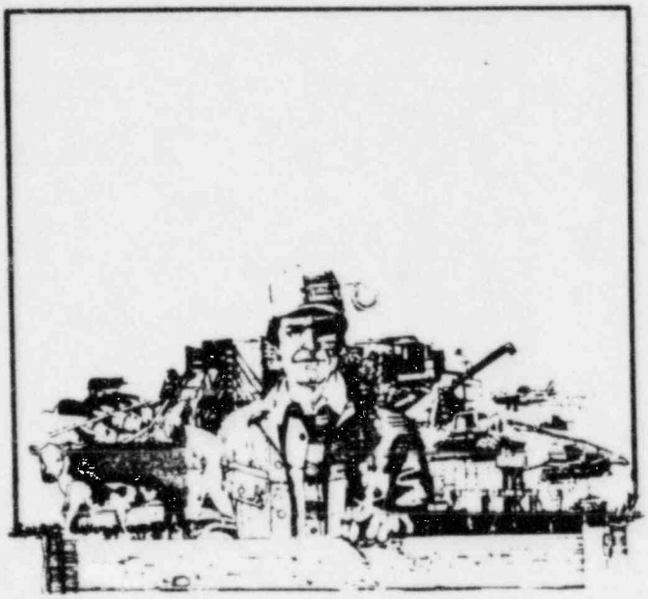
CITY-19

Question L: Are the state plans inadequate in the area of emergency planning because there is no adequate implementable plan or implementable alternatives and methods for decontamination of the City's water supply and water supply system?

Answer L: Published sources are in existence (as referenced by the testimony of John C. Lehr of the U.S. Nuclear Regulatory Commission on June 4, 1984 - copy attached) concerning the decontamination of water supplies. This information should be readily available for use by decision-makers in the event of a radioactive contamination of water supply systems. These documents would be considered part of the "general plans and procedures for ... recovery" as called for under Planning Standard M., and thus the State plans would not be inadequate by not having detailed water decontamination procedures contained in the plans themselves.

Farmers Emergency Information

WHAT YOU SHOULD KNOW ABOUT NUCLEAR POWER PLANT INCIDENTS



Commonwealth of Pennsylvania
Pennsylvania Department of Agriculture
2301 North Cameron Street
Harrisburg, Pennsylvania

Dear Farmer,

This booklet contains general information on the needs and care of animals and specific information on what you may be asked to do if an incident should occur at Three Mile Island Nuclear Power Station.

The protective actions outlined in this booklet are supported by state, county and municipal emergency plans.

The likelihood of a serious accident at a nuclear power plant is small, but it can happen. A popular misconception is that a nuclear reactor could explode like an atomic bomb in the event of a nuclear accident. The fact is that nuclear reactors are designed so that it is impossible for them to explode like an atomic bomb. If an explosion would occur because of a malfunction in the reactor, it would have the same effect as a boiler exploding. The most probable hazard from a nuclear reactor accident is exposure to ionizing radiation.

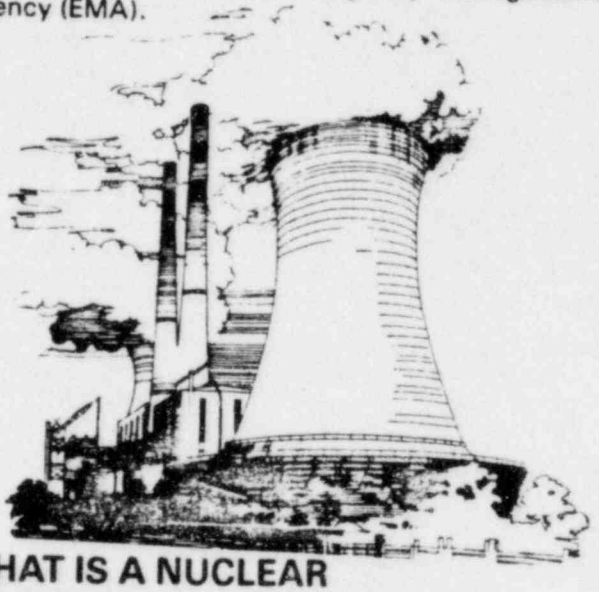
Please read this booklet carefully and discuss the information with your family. Keep it in a convenient place for future use.

Remember, it is important that you know the alert system. If an emergency occurs, turn your radio or TV on and respond quickly but calmly.

Penrose Hallowell
Secretary of Agriculture

PURPOSE OF THIS BOOKLET

This booklet provides information to farmers and livestock owners on how to protect livestock and poultry should a nuclear power plant incident occur. It supplements the emergency information given in "What You Should Know About Nuclear Power Plant Incidents," developed by the Commonwealth of Pennsylvania for people living near nuclear power plants. This booklet also supplements information supplied by the county Emergency Management Agency (EMA).



WHAT IS A NUCLEAR POWER PLANT INCIDENT?

The most frequently thought of nuclear power plant incident is the abnormal release of radioactive material by a nuclear power plant. But a nuclear power plant incident may not involve an active release of radiation.

Nuclear radiation is energy in the form of invisible particles or rays that are given off by radioactive materials. There are three general types of radiation; Alpha particles, Beta particles and Gamma Rays. Alpha particles offer little hazard unless the radioactive material is ingested or inhaled. Beta particles have a low penetration ability and are stopped by things such as a layer of skin, a sheet of plastic or a piece of wood. Gamma Rays are identical to X-rays and can easily penetrate low density materials. The radioactive materials having the greatest impact on agriculture are the radioiodines. Radioactive iodine is important because of its abundance in a reactor and its affinity for the pasture-cow-milk-food chain.

Accidents not requiring protective action by the general public may still require removal of dairy cattle and/or feed from the contaminated area.

HOW IS RADIATION DETECTED?

Radiation cannot be detected through any human senses, but it can be detected by special instruments. Experts use these instruments to continually monitor radiation levels around nuclear power plants. If a nuclear incident does occur, monitoring will be increased and accurate information will be gathered for potentially affected areas.

The amount of radiation in an area is measured by radiation dose, called a Rem. The Rem, based on effects of radiation on the human body, is essentially the same as the unit measurement for X-rays. Millirem, commonly heard, is one-thousandth (1/1000) of a Rem.

HOW WILL YOU LEARN OF A NUCLEAR INCIDENT?

If protective measures are required, the standard "Alert Signal" will be sounded over a siren system installed within a ten-mile radius of all nuclear power plants. The "Alert Signal" is a steady three to five minute tone — not a wailing or warbling sound. The "Alert Signal" means people within hearing distance should tune to their local TV or Radio Emergency Broadcast Station. A message will be broadcast advising the action to be taken. To make sure everyone "gets the word," the emergency broadcast message will be repeated frequently. State and or local municipal police, fire departments and other agencies will carry the message. Sound trucks, bull horns and door to door contacts will be made.

REMEMBER: If the "Alert Signal" is heard, TURN ON YOUR RADIO OR TV.

HOW WILL I KNOW WHAT TO DO?

Each county EMA has established a "Contact and Dosimetry KI Distribution Point for Farmers," at a location easily accessible and known. At the time of the emergency, Emergency Broadcast System (EBS) Announcements will direct farmers to report to the designated location. At the location, farmers will receive dosimeters, potassium iodide (KI) and a "Pass," enabling them to exit and re-enter the contaminated area. A dosimeter is a pen or card shaped device used to measure accumulated radiation exposure. Potassium iodide (KI) is a drug that offers some protection to the thyroid gland from injury due to an accumulation of radioactive iodide. The "pass" will consist of a "Farmer Emergency Worker Certification" form filled out by each farmer. The original serves as his "pass."

Farmers will also be given information at the distribution point on the use of dosimeters, what the readings mean, what the KI is for and, how and when to use it. Any questions will be answered at the distribution point.

Farmers should be aware of the Food and Drug Administration's (FDA) protective action guidelines. These are not regulations, but are recommended guidelines for farmers and emergency workers. According to the guidelines, projected radiation dosage should not exceed 5 Rem for the whole body. Dosimeters and calculations are used to determine the radiation dose. Farmers will receive help at the distribution point on their calculations.

Emergency workers from the Pennsylvania Department of Agriculture will be available to collect field samples of milk, livestock forage, feed, and water for laboratory analysis. Contamination levels and appropriate health related advisories will be issued.

WHAT PROTECTIVE ACTIONS CAN BE TAKEN?

There are two simple and effective steps that can be taken in a nuclear power plant incident.

One step is taking cover or shelter; go indoors. Take shelter is the action usually taken if a small puff of radiation rises from a nuclear plant and moves swiftly away. Farmers hearing a "Take Shelter" advisory should take shelter themselves and if time permits, shelter animals and provide uncontaminated feed and water.

Another step is evacuation. Evacuation is recommended if there is a possibility of, or if large amounts of radiation have escaped from the plant. Farmers

hearing an "Evacuation" advisory should shelter their animals if enough advance warning is given. Sheltering gives some protection from airborne radioactive particles and makes it easier to supply feed and water without contamination.

Farmers affected by a "Take Shelter" or "Evacuation" advisory should contact their county Emergency Management Agency (EMA) as directed by the Emergency Broadcast System (EBS).

The basic objective of protective actions is to reduce the amount of radiation received by the farmer and his livestock. Farm operators near a nuclear power plant should take advantage of all their resources, plan ahead for adequate livestock shelter, ventilation and protection of feed and water. Poor ventilation or lack of water can harm animals just as readily, if not more so, than radiation.

WHAT TYPE OF SHELTER SHOULD BE USED?

Sheltered animals are protected from potentially contaminated air and radioactive materials which are deposited as the radioactive cloud passes. Livestock housed in farm buildings can receive some protection from direct radiation exposure.

Plan ahead for shelter by deciding which buildings offer the greatest protection. Barns, milking parlors, machine sheds, garages, corn cribs and swine or poultry buildings are all possible livestock shelters. Some buildings offer greater protection than others depending on their construction:

PROTECTION OFFERED BY COMMON FARM BUILDINGS

Percent of outside radiation received by animals inside the building	Type of Building
5-10	Large barns, concrete or masonry
20	Multi-story poultry houses, masonry
20-40	Large frame buildings
20-40	Full masonry or concrete block hoghouse
30-50	Conventional frame barns
30-90	Other poultry houses
50	Conventional hoghouse (part concrete)
60-80	Pole barns, loafing sheds, stock confined under roof

HOW MUCH SPACE IS REQUIRED IN THE SHELTER?

Decide how many animals need shelter and determine priorities for sheltering stock. Providing shelter and care for all livestock is usually impractical and impossible. Plan to give dairy cows and best breeding stock the most protected areas. If an evacuation is called and there is time, place the calves, especially newborns, with valuable lactating cows. Try to milk all cows BEFORE evacuating. The following chart can help determine space requirements.

SPACE REQUIREMENTS FOR LIVESTOCK IN CLOSED BUILDINGS

Dairy Cows	Cow in Production	Dry Cow	Weaning Calves
20 cows or less	30 square feet		
21 cows or more	50 square feet		
5 cows or less		20 square feet	
calves up to 6 months			15-20 square feet
calves 6 months to 1 year			20-30 square feet

Beef Cows	
Beef cow with calf	150 square feet
Beef cow dry	50 square feet
Weaning calves	
calves up to 6 months	15-25 square feet
calves 6 months to 1 year	20-30 square feet

Sheep	
Ewe with lamb	32 square feet
Ewe, dry	16 square feet
Weaning lamb	16 square feet

Swine	
Brood sow with litter	40 square feet
Brood sow, dry	15 square feet
Weaning pigs	10 square feet
Fattening Hogs	
100 pounds	4 square feet
200 pounds	6 square feet

Poultry	
Laying hens	2 square feet per bird
Boilers	6 square feet per bird
Turkeys	4 square feet per bird

WHAT ABOUT VENTILATION?

A primary limiting factor in sheltering livestock is ventilation. Listen to your Emergency Broadcasting System (EBS) announcements to obtain information on radiation exposure conditions.

Livestock confined in a roored building and being fed uncontaminated feed and water will still be exposed to radiation from contaminated air entering the building. Therefore, outside air entering the building should be kept to a minimum.

DO NOT USE FANS FOR VENTILATION. If you must, plan to set them on low speed to reduce the air intake.

RECOMMENDED VENTILATION IN ANIMAL SHELTERS

Animal	Cubic Feet Minute/ Animal Winter	Cubic Feet Minute/ Animal Summer
Cattle		
400 pound calf	30	80
800 pound dairy	70	200
1000 pound	100	225
1600 pound	130	300
Hen	½	6
Sheep		
Nursing ewe	10	30
60 pound lamb	7	20
Swine		
Sow and litter	50	100
100 pound hog	15	40
200 pound hog	25	75

Ventilation needs are the judgement of the herdsmen. Remember, it is better to have some radioactive contamination than losses from overcrowding, heat and poor ventilation.

WHAT ABOUT FEED AND WATER FOR ANIMALS?

Plan to protect feed and water from radioactive contaminants. If animals ingest contaminated feed and water, they will be exposed to internal radiation. Give animals uncontaminated feed and water until questionable samples have been analyzed and determined safe.

Feed stored in buildings is protected from contamination. Feed stored outside can be protected by placing plastic or canvas covering over it as soon as warning of an incident is heard.

The animals' most crucial need is safe water, even more so than feed. Water from a covered or deep well or running spring is safe for livestock.

Livestock care and maintenance may not be possible for the first 48 hours after an evacuation advisory.

For this reason, the farmer should plan to provide a minimum emergency supply of water and withhold feed until care is possible. The lack of feed will help reduce the need for water. Decreased water intake will help reduce milk flow.

After the first 48 hours or more, feed livestock one-half their normal feed for a day; gradually increase the amount by one pound a day per animal until they are back to their normal rations.

Animals can survive on the following minimum rations and water for several months. Additional protein will be needed to build tissues.

DAIRY COWS	WATER/DAY	FEED/DAY
In Production	9 gallons summer 7½ gallons winter	20 pounds hay
Dry cows	9 gallons summer 7½ gallons winter	20 pounds hay
Weaning calves	6 gallons summer 3 gallons winter	8-12 pounds hay
Cow (pregnant)	7 gallons summer 6 gallons winter	10-15 pounds of legume hay
Cow with calf	9 gallons summer 8 gallons winter	12-18 pounds of legume hay
Calf (400 pounds)	6 gallons summer 4 gallons winter	8-12 pounds of legume hay
Swine		
Brood sow with litter	4 gallons summer 3 gallons winter	8 pounds grain
Brood sow (pregnant)	1-2 gallons summer 1 gallon winter	2 pounds grain
150 pound gilt or board	1 gallon	3 pounds grain
Sheep		
Ewe with lamb	4 quarts	5 pounds hay
Ewe, dry	3 quarts	3 pounds hay
Weaning lamb	2 quarts	3 pounds hay
Poultry		
Layers	5 gallons/100 birds	17 lbs/100 birds
Broilers	5 gallons/100 birds	10 lbs/100 birds
Turkeys	12 gallons/100 birds	40 lbs/100 birds

Farmers should make plans to protect their animals BEFORE an actual nuclear power plant emergency occurs. Farmers are advised to gather as much information as possible to determine the best method for protecting livestock should an incident occur.

WHAT ABOUT CROPS & FOOD?

Protective actions for crops, fresh fruits and vegetables and other food products depends on when the contamination occurs as well as the type of crop.

Contamination just before or during harvest time requires washing or peeling of fresh fruits and most vegetables before consumption. Root vegetables are protected by the soil. Wait to harvest them until determined safe by authorities.

Contamination of field crops at harvest time can be minimized through storage. Radioactive decay will reduce contamination of field crops with time.

Other foods may also be canned or frozen to allow time for radioactive decay.

At other periods in the growing cycle, effects of contamination should be limited depending on the length of time before harvest.

Further information on protective actions for crops and food products will be available through the Emergency Broadcast System (EBS).

SUMMARY

The basic principles of protecting livestock (and people) against radiation are easy to apply The objective is to reduce the total exposure to radiation.

IF AN ACCIDENT OCCURS:

Siren alert systems will signal the public in the vicinity of a nuclear reactor that a problem has occurred. Turn on your radio or television for more information.

Emergency Broadcast System announcements (radio and or television) will provide instructions or directions to the public. Public information statements will be issued over the same system.

Two primary protection action options for the general public are sheltering and evacuation. It is important that you respond quickly but calmly when notified that any protective action should be taken.

Lactating dairy cows should be removed from pasture to protect milk supply. Animals should be given uncontaminated feed and water. Feed stored in buildings is protected from contamination. Water from a covered well or running spring is safe for animals.

Sheltered animals receive some protection from radiation exposure.

A limiting factor in protecting livestock is ventilation. It is better to have some radioactive contamination than losses from over crowding, heat and poor ventilation.

Milk and other food products produced in the area of contamination will be tested by an appropriate agency. Their advice should be followed.

Farmers affected by an "Evacuation" advisory should contact their county Emergency Management Agency to receive dosimeters, potassium iodide and a pass to enable them to care for their livestock.

Good judgement and a cool head will be helpful in protecting the Agricultural Community in the event of a nuclear reactor accident.

FEDERAL EMERGENCY MANAGEMENT AGENCY

AND REGIONAL ASSISTANCE COMMITTEE, REGION III

INFORMAL EVALUATION OF THE OFFSITE RADIOLOGICAL EMERGENCY RESPONSE PLANS SITE-SPECIFIC TO THE LIMERICK GENERATING STATION

Federal Emergency Management Agency
Nuclear Regulatory Commission
Environmental Protection Agency
Department of Energy
Department of Transportation
Food and Drug Administration
Public Health Service
U.S. Department of Agriculture

April 27, 1984

Rating Key: A = Adequate
I = Inadequate

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
A.		Assignment of Responsibility (Organizational Control)
A.1.a.	A	The various County Radiological Emergency Response Plans (RERP) identify the major State, local, Federal and private sector organizations intended to be part of the overall response organizations under the "Responsibilities" section of the Basic Plan. This includes a detailed breakdown of the risk Counties' duties in general, as well as a listing of the specific County staff assignments. Other entities listed include the Commonwealth of Pennsylvania (specific State agencies), the Federal Government, municipalities and the American Red Cross. The County plans also contain two Appendices that detail the respective EOC's staff organization and the interrelationships of organizations. As of September 1983, the U.S. Department of Agriculture established Food and Agriculture Councils (FACs) at the State and local level. Future revisions of the plan should change all references from the USDA State and County Emergency Boards to the USDA State and local FACs.
A.1.b.	A	The operational roles of the Counties, municipalities and school districts are handled in two ways. There is a listing of responsibilities in general terms and by functional areas, i.e. public information, transportation, medical support, evacuation, etc. The various jurisdictions also have delineated their concept of operations. In the case of the Counties these have been presented in a general operational format and also by functional area. School districts have shown their concept of operations based on the alternatives of school in session/school not in session. In all cases, the concept of operations are broken down by classification levels, thus providing for a coordinated response effort.
A.1.c.	A	Each County delineates the basic concept of operations and interrelationship of organizations on a County "EOC Staff Organization" chart, a "Primary and Support Responsibilities" chart and an "Interrelationships of Organizations" block diagram. The block diagrams should be reexamined for accuracy. For example, in the Montgomery County RERP there appears to be a mixup in that the Industrial Liaison Officer has the primary role for school services and is not given any role in industrial liaison.

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
A.1.d.	A	Each organization has identified a specific individual, by title, who would be in charge of their emergency response. At the County level, the responsibility for decisionmaking lies with the Commissioners, while a Director has been appointed for the implementation of the RERP. Municipal governmental bodies have the responsibility for the safety and protection of the public within their jurisdiction, as well as providing direction and control of the emergency organization. An Emergency Management Coordinator (EMC) is designated to coordinate response actions at the local EOC. School Superintendents are responsible for assuring the safety of all students and staff, along with notification and coordination of transportation resources for non-profit, private schools within the territory of their respective school district. Building principals are responsible for the coordination of protective actions within their schools and for the safety of students and staff.
A.1.e.	I	Each County calls for 24-hour response through paid staff supplemented by volunteers. There is no precise reference to a 24-hour per day manning of communication links, although it is assumed that this would be accomplished through the police/fire/emergency medical communications network. A more specific reference in the plans is needed to deal with this point. Twenty-four hour emergency response at the municipal level is not assured due to the fact that many staff positions are vacant at the present time.
A.2.a.	A	A "Primary and Support Responsibilities" chart is available in all three County plans containing such functional areas as: Direction and Control, Communications, Alert/Notification, Public Information, Fire and Rescue. Police Services, Medical Support, Military Support, Transportation, Evacuation, Traffic Control, Mass Care, Radiological Exposure Control, School Services, Agriculture, Reentry, Resource Requirements, Training, Exercises and Drills, Agreements, Supporting Plans and Implementing Procedures, Municipal Plans, Maps and Industrial Liaison. These functions are divided among the various officers/coordinators/officials. These items can be considered to be the more significant planning and/or preparedness issues that the local governments would be expected to address. Annexes to the Basic County plans have been included addressing each one of these categories, in most instances, by emergency classification level.

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
		Specific functional responsibilities of municipalities and school districts are contained in their respective plans.
A.2.b.	A	The legal basis for the preparation and implementation of the various RERPs (P.L. 1332, Pennsylvania Emergency Management Services Act of 1978) is contained in all plans, with a few possible exceptions.
A.3.	I	Federal response efforts will be coordinated through the Commonwealth of Pennsylvania. The State's role is delineated, in detail, in Annex E to the Commonwealth's Disaster Operations Plan, and is summarized in the risk Counties' RERP. Agreements and Statements of Understanding with local and support organizations are in various stages of development, with some complete and some still in the process of being formulated. When finalized, they will cover such critical areas as the American Red Cross, EBS stations, amateur radio organizations, transportation, roadway clearance and fuel resources, relocation points for emergency services located within the plume exposure EPZ, mass care and reception centers, emergency worker decontamination stations, host schools, etc.
A.4.	I	The three risk Counties, when augmented by emergency personnel, are capable of responding to an emergency at the Limerick Generating Station for an extended period. The respective Directors/Coordinators have been designated as the individuals responsible for ensuring that the County EOCs are, at all times, capable of being operated on a protracted 24-hour basis. It is recommended that a more specific statement be included in Annex A of the County RERPs designating those officials responsible for assuring continuity of resources (technical, administrative, material). As noted under element A.1.e., twenty-four hour response at the municipal level is not assured due to the fact that many staff positions are vacant at present.
C.		Emergency Response Support and Resources
C.1.c.	A	The Pennsylvania Emergency Management Agency (PEMA) is responsible for making the necessary arrangements to support the Federal government response personnel. The Counties will cooperate with the Federal Government, PEMA and the Pennsylvania Department of General Services in planning for, and making, necessary support arrangements. It is recommended that a complete statement such as Section II.D., Annex Q of the Chester County RERP should be added to the appropriate section of the Montgomery and Berks Counties' RERPs.

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
C.2.a.	A	None of the three risk Counties will have a representative at the Limerick EOF as they are not involved in accident assessment. There is a question as to why this subject was dealt with under the "Communications" Annex.
C.4.	I	As noted under element A.3., support facilities, organizations or individuals have been thoroughly documented in the various RERPs. However, at the present time the process of obtaining the necessary letters of agreement is still underway. It should be noted that the definition of "IRAP" in the Radiological Exposure Control Annexes of the County plans should be replaced by "FRMAP" - Federal Radiological Monitoring and Assessment Plan.
D.		Emergency Classification System
D.3.	A	All local organizations are utilizing the standard emergency classification and emergency action level scheme which is in complete conformance with that established by the utility.
D.4.	A	Detailed response plans have been developed by all political jurisdictions (Counties, municipalities, school districts) based upon the emergency action levels and protective action alternatives. The overall responsibility for decision making within the Counties and municipalities lies with their respective governmental bodies, while the Superintendent of Schools will be responsible for their particular school district. The authority to compel an evacuation rests only with the Governor and is based on recommendations received from PEMA and the Bureau of Radiation Protection (BRP). It is noted that the County Commissioners can recommend an evacuation, but they cannot compel it. However, there is a difference as to the possible source of the recommendation. Montgomery County cites the Limerick Generating Station or the Philadelphia Electric Company, Chester County cites PEMA and Berks County cites PEMA and BRP. The three risk Counties should agree on the same organizational source(s) for protective action recommendations.
E.		Notification Methods and Procedures
E.1.	I	The method of notifying the risk Counties is incomplete, most likely due to the fact that the general public alert and notification system is currently undergoing a complete revision. Specific details are needed as to the method to be utilized and the organization(s) who will be performing the notification of the Counties at each classification level. Montgomery

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
		County does have a "Method of Receipt of Action Information" on page 22 of the Basic Plan, but it is not tied into any specific organization nor emergency action level. There is the provision for the logging of information on an official "Incident Notification Form." This form appears to be very comprehensive in nature and includes a space to record the telephone number of the caller which can be used for verification. However, there are no provisions for verification of messages by the support Counties or the risk municipalities. In the event of an incident at Limerick, the County Communications Departments will notify the risk municipalities, starting at the Alert stage, with the telephone being the primary means of notification. Consideration should be given to developing an abbreviated "Incident Notification Form" for use by the municipalities.
E.2.	A	All County, municipal and school district plans have detailed procedures regarding the alerting, notifying and mobilizing of emergency response personnel. This includes County, municipal and school district personnel as well as other organizations involved in emergency response, such as the American Red Cross, health care and other special facilities, recreation areas, major industries/utilities, transportation systems, etc. For consistency, the Chester County plan should call for the notification of health care facilities in Annex C, as it does under the Chester County Operations section and under Annex G. Notification will occur, for the most part, at the Alert stage with partial mobilization occurring at that point. Call down lists are included in the applicable plans.
E.5.	I	The three Counties have determined the point (Montgomery and Berks - Alert, Chester - Site Emergency) at which they may commence issuing public information statements via the press or media, explaining actions being taken to protect residents and transients within the plume EPZ. There is concern with the statement in the Montgomery County RERP (Annex D, Section III.E.) that reads: "Coordination with PEMA is at the discretion of the Commissioners, the OEP Director/Coordinator or his designated alternate." Coordination of all public information releases is essential in order to prevent possibly contradictory information that would confuse the general public. At the point it becomes necessary to alert the public (due to potential dangers and/or the need to take protective actions), PEMA will coordinate among the three risk Counties the specific

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
		time to activate the public alert/notification system and the Counties will determine the appropriate EBS announcements to make. These (EBS) announcements will not be made before the public alert system is activated. The various EBS stations are contacted beginning at the Alert stage, requested to review all the prepared announcements and place the alerting and warning system on standby status. There is some difference (and thus ambiguity) between the wording utilized in the Montgomery County plan on the one hand and the Berks and Chester County plans, on the other. The former states that, at the appropriate time, the County Director/Coordinator will notify the EBS station and verify that appropriate announcements have been made, while the other two Counties are committed only to verification that the correct announcemnets have been transmitted. If the EMCs in Chester and Berks are responsible for activating their EBS station this should be specified in the plan. Finally, and most critically, according to the Pennsylvania EBS Operational Plan, dated December 1982, the EBS stations referenced in the Montgomery and Chester County plans are not the primary stations. Both Counties lie within the Philadelphia extended area and thus their designated stations should be WIP or WMMR-FM. There is concern that backup power would not be available in the case of power failure and, in Chester County's case, the fact that the EBS station is not operational 24 hours a day. If an incident occurs at night and/or during inclement weather significant time could lapse before critical information could be broadcast to the public in Chester County.
E.6.	I	Because of a decision by the utility to switch from a Tellabs "294" community alerting system to a standard siren system (after the plans were submitted for informal review), the plans do not reflect the current situation. In addition, route alerting teams will be used as a supplement to the public alert system and will travel pre-designated routes utilizing public address systems to instruct residents in areas where there is a known system failure to tune to their EBS stations. The teams will also directly contact any individuals along their designated route who have been identified as hearing-impaired and transient locations to ensure notification has been received. The establishment of the various route alert sectors and the designation of specific fire departments to those sectors is incomplete at present. There appears to be a difference between the County and municipal plans. The County RERPs refer

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
		to "pre-designated route alert teams" while the municipal plans state that "specific assignments will be made at the time of mobilization..."
		Where applicable, transient locations need to be added to municipal plans, as route alerting may be the primary means of notification for these areas.
E.7.	A	Draft messages have been included in the County RERPs to be utilized during an emergency, whenever necessary. Subject areas include: "Sheltering Alerting and Warning EBS Announcement," "Selective Evacuation Alerting and Warning EBS Announcement," "General Evacuation Alerting and Warning EBS Announcement," "School Evacuation Alerting and Warning EBS Announcement," along with a "Reentry and Recovery Alerting and Warning EBS Announcement" and an "Alert and Warning EBS Announcement." These messages appear to be comprehensive in nature and would, for the most part, be easily understood in an emergency situation. It is noted under the "General Evacuation..." announcement that reference is made to the Emergency Information Brochure. It is important that the evacuation map(s) included in that brochure be easily understood as some of the directions in the "General Evacuation..." announcement are somewhat vague (southwestern part of Pottstown, eastern Schuylkill Township, etc.). If detailed maps are not included in the brochure it could lead to confusion, resulting in overcrowding on some evacuation routes and underutilization of others. Certain information remains to be added to the "School Evacuation..." announcement in the Montgomery County RERP.
F.		Emergency Communications
F.1.a.	I	As noted under element E.1., details are needed as to the method to be utilized (including means of communication) and the organization(s) who will be notifying the three risk Counties. Also, a more precise statement regarding 24-hour per day manning of communications links is needed, as noted under element A.1.e.
		Once staffing of the municipal emergency operations centers has been finalized, consideration should be given to adding another contact person to the lists contained in the County plans, thus providing an alternative source to whom to relay the notification information. There is a concern that the notification process to the municipalities could be slowed significantly if the local EMC is not accessible and no other contact is readily available.

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
F.1.b.	I	Appendix B-1 of the Montgomery County RERP delineates, in a very thorough manner, the capabilities of their communication system, including the equipment that would be utilized to interface with other Counties (risk and support). Although the Chester and Berks County plans have somewhat similar charts that detail communications equipment, capabilities need to be dealt with as well. Neither of the latter two plans addresses inter-County communications. The role of Montgomery County as the alternate facility notification source in the event of a breakdown in communications between PEMA and Limerick is somewhat vague. The County will serve as the source of information to Chester and Berks Counties. It is implied that they will keep PEMA informed, as well, but there is no explicit statement to that effect. In addition, there is no mention of the line of communications to BRP. This would be critical in the event of the need for a protective action recommendation. It is unclear whether BRP would continue to communicate through PEMA or would communicate directly with Montgomery County. Please clarify.
F.1.c.	I	The Montgomery County plan states that all communications with the Federal Government will be through PEMA. The Chester and Berks County plans do not specifically address this issue.
F.1.d.	I	The entire notification and communications system is in a state of flux, including the means of communication between the Limerick Generating Station and/or the EOF and the risk County EOCs. Thus, no details concerning the system are included in the plans at the present time.
F.1.e.	A	All three Counties' RERPs discuss their alert/notification actions under Annex C. The Montgomery County procedures are clearly the preferred means of dealing with this function in that at all emergency classification levels there is a precise reference to all individuals or organizations and whether they are to be placed on standby, or mobilized. The Berks and Chester County plans should be expanded to reflect the information contained in the Montgomery County plan. As an example, at the "Alert" stage the Mass Care Coordinator and the Southeastern Pennsylvania Chapter of the American Red Cross would be notified by the Montgomery County EOC. Yet there do not appear to be any similar arrangements in the other risk Counties to notify their Mass Care Coordinator/Red Cross. All municipal plans have provisions for the notification and activation of emergency response personnel.

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
F.2.	A	The three risk Counties maintain an emergency medical communications network that provides for direct communications with their respective ambulance associations. There are no hospitals or nursing homes within the Berks County portion of the EPZ. In the two other counties it is assumed that contact from the EOCs will be by telephone. Please clarify. Both Chester and Montgomery Counties include an appendex to Annex G (Medical Support) detailing the risk and host hospitals and nursing homes. The Montgomery County list includes addresses and telephone numbers; it is recommended that this information be added to the Chester County list, as well.
F.3.	A	All Counties call for a periodic testing of the communications sytem, including municipalities and other response organizations. It would be beneficial to add "testing" information, as found on page B-3 of the Chester County RERP, to the Montgomery and Berks County Plans.
G.		Public Education and Information
G.1.a., G.1.b., G.1.c. & G.1.d.	I	All risk Counties' plans discuss the fact that public information materials will be reviewed and distributed on an annual basis. The information will instruct the public at risk how they will be notified, what their actions will be and who to contact for further information in the event of an incident at Limerick. Protective measures and the needs of the handicapped should also be included. Also, see element E.7. Until such time as these materials have been prepared and reviewed by the Regional Office, this element will remain open. This review will occur prior to, or at the time of, formal review. A final decision on the program's adequacy will be made at that time.
G.2.	I	As noted under element G.1., the public information program is still at an early stage of development and thus a final decision on its adequacy will have to wait until such time as it has been reviewed in detail.
G.3.a.	A	The three risk Counties have established the points of contact and the physical locations for use by the news media during an emergency. The media centers will be opened whenever the EOC is activated (or in Montgomery County's case, at Site Emergency). The locations are: Berks County - auditorium of the County Agriculture Center; Chester County - Room 322 of the Hazlett Building; Montgomery County - fifth floor conference room, Courthouse. These centers will be staffed by their respective Public Information Officers (PIO).

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
G.4.a.	A	The Chairman of the Board of County Commissioners, or his designee, will serve as their County's spokesperson in the event of an incident associated with the Limerick Generating Station. The County spokesperson will coordinate with the PIO prior to the release of public information during an incident. There appears to be some confusion as to whether the spokesperson will be briefed by the PIO (as in the case of Berks and Chester Counties), or will brief the PIO (Montgomery County).
G.4.b.	I	There is no specific reference in the "Public Instruction" annexes for the exchange of information between designated spokespersons, thus creating the possibility of confusing and/or contradictory information being given to the public.
G.4.c.	A	Each County will establish a Rumor Control Center whenever the EOC is activated (or with Montgomery County, possibly at Site Emergency) and will be staffed, and operated, by the respective PIOs in Berks and Chester Counties and by the Operations Officer in Montgomery County. The rumor control numbers have been established and will be published as the primary numbers for responding to questions from the general public. The need for additional telephone lines and/or staff to man the centers will be coordinated by the Coordinator/ Director.
G.5.	I	The three Counties will participate in an annual news media orientation, sponsored by PEMA. The orientation will acquaint news media representatives with radiological emergency response plans and points of contact for release of public information during an emergency. Information concerning radiation should also be discussed. Once the program has been established it will be reviewed in more detail, and a final decision made on its adequacy.
H.		Emergency Facilities and Equipment
H.3.	A	The various governmental jurisdictions, both County and municipal, have established emergency operations centers for use in directing and controlling response functions. Some municipalities, which are located entirely within the plume EPZ, are still in the process of determining alternate locations for their EOC in the event of a general evacuation.

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
H.4.	I	As noted under element E.2., each organization has provided for the timely activation of the facilities and centers described in the various plans. However, there is still a concern regarding the staffing of the municipal EOCs, in particular, as many staff positions remain vacant at the present time.
H.7.	A	The risk Counties rely totally on the Bureau of Radiation Protection for such technical tasks as incident assessment and air monitoring for detection and definition of the radioactive plume. Monitoring (or survey) equipment is required for decontamination monitoring of emergency workers and the general public. The CDV-700, a geiger counter, will be utilized for this purpose. Chester County has determined the need for 180 survey meters, Berks - 90, while Montgomery has not made a determination as to the necessary numbers. The two support Counties (Bucks and Lehigh) need approximately 161 and 105, respectively. According to a telephone conversation with PEMA on March 30, 1984, adequate numbers of equipment are available to handle the monitoring requirements of emergency workers and the general public. Once Montgomery County has included the number of CDV-700s it expects to need in their plan, this element will be completely satisfied.
H.10.	I	Although the County RERPs call for an inventory-inspection-operational check of the special issue and set-aside equipment and KI, it is only scheduled to take place annually rather than quarterly, or after each use. There is no assurance that sufficient reserves are available to replace that equipment which has been removed for calibration or repair. Also there is no statement that calibration of equipment will be at intervals recommended by the supplier of the equipment.
H.11.	I	As noted under element H.7., a listing of radiological monitoring equipment has been compiled for all Counties except Montgomery. Protective equipment would consist of double clothing (rain gear) and respiratory protection (self-contained breathing apparatus or improvised measures, if necessary); there is no need for a listing of this information. Although communications equipment is not identified in specific detail (in terms of numbers), the "Communication Systems Capabilities' appendices address the subject. See element F.1.b. concerning the need to expand the Berks and Chester County charts. Information regarding emergency supplies is scattered throughout the different plans, in various stages of completion.

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
		The Consolidated Resource Lists needs to be completed for each risk municipality and then included in the applicable County RERP, as well.
H.12.	A	The Counties and municipalities will rely upon BRP, through PEMA, for incident assessment, field monitoring, and representation at the Limerick EOF, for the receipt, analysis and coordination of field monitoring data.
I.		Accident Assessment
I.7.	A	See the comment to element H.12.
I.8.	A	See the comment to element H.12.
J.		Protective Response
J.2.	A	Although the Montgomery County RERP states that a review of the Limerick Generating Station's plans for evacuation and reception of on-site personnel will take place in order to ensure consistency, certain "highlights" of the Limerick plan should be included in the Montgomery County RERP. This would include, at a minimum, such information as evacuation routes and relocation areas, to be used by plant personnel.
J.9.	I	Protective measures have been identified for both the general public and emergency workers. Protective actions for the general public include sheltering, selective evacuation and general evacuation. Items that would be implemented in support of these actions would include traffic and access control, mass care, agriculture, transportation, medical support, etc. Protective measures for emergency workers will take the form of radiological exposure control. They will be provided with the necessary dosimeters, radioprotective drugs (KI), and, when needed, double clothing and respiratory protection, along with up-to-date and critical information such as radiation levels, plume direction and speed, increased risks due to radiation exposure, etc. Decontamination is available for both the general public and emergency workers. Institutional personnel will be discussed in detail under element J.10.d. Although the framework has been established as to how the various County, municipal and private organizations will respond to an emergency at Limerick, and the criteria for initiating protective actions (including PAGS) has been delineated, it is still not apparent that there is an ability, at this point in the planning and preparedness process, to implement protective measures. This is based on information

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
		and/or resources that are lacking at this point in time. These include vacant positions at the municipal level, unmet needs and resources, outstanding letters of agreement, and incomplete information on transit-dependent individuals, etc.
J.10.a.	I	An evacuation plan map is currently included in all County and municipal RERPs, containing a detailed representation of evacuation routes. Please clarify as to why a map identical, or similar to, this map was not included in school district plans. Maps showing reception centers, mass care centers and host schools have yet to be developed. Radiological sampling and monitoring points need not be mapped as this is not a responsibility of the local governments. Evacuation support maps need to be completed for each risk municipality.
J.10.b.	A	Each County plan, in an appendix, provides information regarding population data by sector and by miles (2-5-10). This is considered to be adequate since there are no evacuation areas, per se; the entire plume EPZ will be evacuated, if necessary. However, Montgomery County does have a population sector map on page W-5-1. The other Counties should consider adding a similar map to their plans.
J.10.c.	I	See comments to elements E.5. and E.6.
J.10.d.	I	Information concerning this element is not complete at the present time as plans have not been received, by FEMA, for the State Correctional Institution, Graterford. In addition, the municipalities have not completed developing listings of homebound individuals, requiring ambulance transportation or other special assistance in the event of an incident at the Limerick Generating Station. There are two hospitals and four nursing homes in Montgomery County and one hospital and three nursing homes in Chester County; there are currently no hospitals or nursing homes in the Berks County sector of the plume EPZ. Evacuation priorities have been established for ambulances located within, or serving, the plume EPZ, and those located outside, and not serving, the EPZ. The evacuation time for the risk hospitals and designated nursing homes in Montgomery County and Phoenixville Hospital, in Chester County, are expected to be greater than that of the general population. Consequently, the staff and medical complement of these health care facilities are considered emergency workers, and are therefore provided KI and dosimeters.

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
		Because the situation is considered serious enough that the general public should evacuate rather than shelter, sheltering provisions at the above-referenced institutions should be discussed in further detail. Information concerning where individuals requiring evacuation by ambulance or other special vehicles are to be relocated to needs to be included, where applicable, in municipal plans. A discussion of the estimated time it would take to evacuate the Pennhurst Center, including mobilization, should be included in the Pennhurst RERP. This could have a significant impact on the type of protective action that should be taken and is of special concern since the facility is only about 2.5 miles from the Limerick Generating Station. Although Appendix A to the Pennhurst Center's plan states that transportation vehicles will be obtained from Department of Public Welfare institutions there is no specific reference as to the soruce of such needed resources as five wheelchair buses, one regular 48 passenger bus, and one ambulance. This could impact on the mobilization time discussed above.
J.10.e.	I	Potassium iodide (KI) tablets and dosimeters are distributed to the Counties along with liquid KI to all designated hospitals and nursing homes. Chester and Berks Counties will distribute the KI to risk municipalities at Alert. It is unclear whether Montgomery County will predistribute KI to their municipalities or whether they will issue it at the Alert stage, as well. Please clarify. Chester County has determined the number of dosimetry/KI kits necessary for emergency workers, while the Montgomery and Berks County lists are incomplete at present. In Berks County, the method of distribution is unclear - will the County deliver the material to the risk municipalities or will they travel to the County distribution point for pickup? An adequate supply of dosimetry and KI is not currently available. The Regional Office should be informed when a supply has been obtained and distributed.
J.10.f.	A	Potassium iodide will not be administered to the general public and should be taken by emergency workers only on the order of the Secretary of the Pennsylvania Department of Health.

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
		According to Appendix 16 (Radiological Exposure Control) to Annex E, Commonwealth of Pennsylvania Disaster Operations Plan, the decision criteria that BRP and the PA Secretary of Health will utilize in determining whether or not to use KI include radioiodine dose projections, exposure savings, drug risk factors and incident assessment information. The Protective Action Guides for Emergency Workers, including thyroid gland exposure, are also contained in the County plans.
J.10.g.	I	The principal means of relocation in the event of an evacuation associated with an incident at Limerick is the private automobile, augmented by other transportation. Information is incomplete regarding the number of buses and ambulances available for evacuation. This is essential information as it is estimated that 317 buses and 30 ambulances would be needed to transport individuals from the plume EPZ. The necessary number of ambulances to evacuate health care facilities, and the resources to meet these requirements have not been completely designated in the County plans. Berks County has the most complete list, matching up buses and ambulances to the unmet needs of municipalities and school districts. Sufficient transportation is expected to be provided to move all students inside the EPZ in one lift. However, there is no assurance, at present, that sufficient buses (along with the necessary bus drivers) exist to meet this objective as the County plans reflect the fact that certain school districts will need additional buses, while the Berks County Transportation Resources and Requirements Summary list is blank. Agreements or statements of understanding remain to be executed with transportation providers for evacuation support.
J.10.h.	A	The assumption has been made that 50% of the people evacuating the plume exposure EPZ would need mass care services. This breaks down to a requirement of 55,145 spaces for Montgomery County residents, 28,245 spaces for Chester County residents and 8,545 spaces for Berks County residents. The Berks County figures on page L-1 are confusing in that they do not seem to relate to the figures listed in the other two risk Counties, nor is it consistent with its own figures on page 8. In any event, adequate mass care facilities are available in the three risk Counties along with the two support Counties of Bucks and Lehigh. All mass care centers are located outside a 20-mile radius of the Limerick Generating Station.
J.10.i.	I	Traffic capacities of evacuation routes under emergency conditions will be part of a study performed under the auspices of the Philadelphia Electric Company. When finalized, it is expected that the risk Counties will review and evaluate the findings and include them in their respective RERPs.

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
J.10.j.	I	The Pennsylvania State Police, supported by the National Guard and municipal police, will control access into the plume exposure pathway EPZ during sheltering or evacuation. Access control points have been determined, including such information as the post number, location, municipality, instructions, number of personnel and responsible organization. The Montgomery County listing is incomplete at present since it has not been determined who will man most of the posts. Consideration should be given to including access control points on the "Evacuation Plan Map" in Annex W of the County plans and Appendix J of the municipal RERPs, as it would provide a better overall assessment of the effectiveness of the proposed access control plan.
J.10.k.	I	Removal of traffic obstructions/roadway clearance/fuel resources is the responsibility of the Public Works Officer/Group of the three risk Counties. Municipal emergency management agencies are tasked with providing these services within their jurisdictions. Documentation of resources to support municipal and County needs for dealing with potential impediments to evacuation is, in many cases, incomplete at present. Once all the necessary assistance has been identified, agreements, letters of intent, or statements of understanding will have to be concluded, as called for in the various County and municipal RERPs. The lising of traffic control points appears to be complete, but the specific agency responsible for manning them has not been determined in many cases.
J.10.l.	I	A time estimates study for evacuation of the plume exposure pathway EPZ will be performed under the auspices of the Philadelphia Electric Company. When finalized, it is expected that the risk Counties will review and evaluate the findings and include them in their respective RERPs. A copy of the study should also be forwarded to FEMA Region III. Estimated fleet mobilization times for the risk school districts also need to be included in Annex N to various County RERPs.
J.12.	I	Upon arrival at a mass care center, evacuees will be monitored for radiation exposure upon their request or when BRP has directed that the situation warrants it. All persons will be registered and family units kept together if at all possible. Upon completion of the registration form, a copy will be forwarded to the Mass Care Coordinator at the County EOCs. A

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
		Mass Care Center Registration Form has been included in the Montgomery and Berks County plans but has not yet been placed in the Chester County RERP. It is interesting to note that the Montgomery County plan contains a listing of animal shelters, animal hospitals, veterinary clinics and boarding kennels outside the plume EPZ. It is recommended that this information be included in the other risk County plans since pets cannot be sheltered at mass care centers. Information is still incomplete regarding monitoring/ decontamination team assignments in the Chester and Montgomery County RERPs and the numbers of necessary equipment in the Montgomery County plan. Consideration should be given to completing a "Decontamination Monitoring Report Form" for each individual monitored, not just for those who have readings of 0.05 mR/h, or more, above background. Background reading records are important in that they may serve as a legal record certifying that an individual was free of contamination.
K.		Radiological Exposure Control
K.3.a.	I	Each emergency worker assigned tasks within the plume exposure pathway EPZ will be provided two self-reading dosimeters, one CDV-730 or one DCA-622 (0-20 R) and one CDV-742 (0-200 R), along with one thermoluminescent dosimeter (TLD). An adequate supply of dosimetry is not currently available. FEMA Region III should be informed when a supply has been obtained and distributed. See element J.10.e. concerning delivery of the dosimetry/KI kits and an incomplete listing of equipment. Certain municipal plans need to include the location of the applicable decontamination station for emergency workers under the "Radiological Exposure Control" section.
K.3.b.	A	Each emergency worker is instructed to read their self-reading dosimeters at least once every thirty minutes. They are also responsible for completing a Dosimetry-KI Report Form and returning it to their particular organization at the termination of their services. Each organization will then inventory the self-reading dosimeters and prepare a summary report of use. All applicable forms and equipment will be delivered to the Counties, who in turn will forward the TLDs and forms to PEMA. They will then be passed on to BRP, who will deliver the TLDs to the service contractor, while BRP will retain the dosimetry records for analysis, reporting and storage.

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
K.4.	I	Elected officials in authority may authorize, in advance, volunteer emergency workers to exceed the protective action guidelines (25 Rem whole body exposure) to a maximum of 75 Rem for a life-saving mission. This is intended to avoid delays in performing a necessary life-saving mission. However this element calls for a decision chain for authorizing emergency workers to incur exposures in excess of the EPA General Public PAGs, i.e. 1-5 Rem whole body. Emergency workers have been given the authority to automatically exceed the Emergency Worker PAGs by unnamed, untitled "elected officials," except in the case of Montgomery County which has designated the Director as the responsible official. The elected officials should consider the increased risks due to radiation exposure as well as other specific guidelines delineated in the risk Counties' RERPs prior to allowing emergency workers to exceed the General Public PAGs. In order to have positive control of worker exposure, the worker and his management chain should have a predetermined low exposure level at which a worker would: a) be relieved, or if the job is important enough, b) be specifically authorized to perform his duty until a new exposure level is reached. Thus, receipt of any exposure above a pre-set level is deliberate and planned.
K.5.a.	A	In the event of an incident at the Limerick Generating Station, BRP will issue a statement indicating whether or not decontamination monitoring is required and PEMA will send this message through emergency management channels. Generally, 0.05 mR/hr, or more, above background is the action level set by BRP indicating that decontamination of an individual is necessary.
K.5.b.	A	Each Radiological Exposure Control Annex to the County RERPs has an appendix detailing decontamination monitoring procedures. General information includes organization at mass care centers, equipment and personnel requirements, record keeping and progress reports, etc. Procedures for decontamination monitoring teams are explained in a thorough manner, concerning the decontamination of people, wounds, clothing and supplies, instruments and equipment; disposal of contaminated wastes is addressed, as well.
L.		Medical and Public Health Support
L.1.	I	A large number of hospitals (Montgomery County - 12, Berks County - 3, Chester County - 5) with radiation exposure/ contamination treatment capability are referenced in the risk County RERPs. The University of Pennsylvania Hospital has been designated as the referral center for the entire Delaware Valley, with the other hospitals serving in a backup role.

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
		For Berks County, the Reading Hospital and Medical Center has been designated as the primary treatment facility, with two other hospitals as secondary treatment facilities. Although no specific statement has been made, it is assumed that persons providing radiation treatment at the hospitals are adequately prepared to handle contaminated individuals. Further information is necessary concerning the abilities of emergency medical service personnel to deal with contaminated individuals, i.e. the training that these personnel are expected to receive.
L.4.	A	Ambulance services located within or serving the plume exposure pathway EPZ will not routinely be used for evacuation support to health care facilities. They would be available for the continued EMS coverage of their service area, including transporting victims of radiological accidents to medical support facilities. It is recommended that Montgomery and Chester Counties designate those ambulance services located within the plume EPZ as has been done in the Berks County RERP. See final statement under element L.1. regarding concern over abilities of EMS personnel to deal with contaminated individuals.
M.		Recovery and Reentry Planning and Post Accident Operations
M.1.	A	Each County has an annex dealing with reentry, delineating specific responsibilities to the County staff, the municipalities, and the school districts, thus providing for an orderly return of evacuees. PEMA will advise the Counties that reentry is permissible, based upon technical information supplied by BRP.
N.		Exercises and Drills
N.1.a.	A	Annex S should be updated to reflect the revised FEMA rules regarding exercises. Specifically, any reference to small-scale exercises should be deleted and a full participation exercise including the three risk Counties, municipalities, school districts, etc., along with the utility should be referenced as taking place every two years. It is expected that the State of Pennsylvania will participate fully at Limerick as part of the rotational process among the five facilities located in the Commonwealth and will support the Counties to the necessary degree when not participating fully.
N.1.b.	A	The Counties will rely on PEMA for the development of exercise scenarios. Once again, any reference to full- or small-scale exercises should be deleted.

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
		The Counties (risk and support) and municipalities, and school districts, when applicable, will take part in full participation exercises, which tests as much as is reasonably achievable. The Counties will participate, as appropriate, with Federal and State representatives in critique and evaluation activities. These critiques will be conducted by Federal and/or State representatives at the conclusion of each exercise.
N.2., N.2.a.	A	Communications drills test both the adequacy of communications links and response agency understanding of emergency action levels and message content. The test involves a combination of radio contact and telephones. A communication drill between the facility, State and the risk Counties will be held monthly. The Counties will verify the testing of communications links with municipalities and other response organizations within County jurisdiction and in testing the public alert system as part of monthly communications drills and routine communications procedures.
N.2.c.	A	Medical emergency drills involve the testing of the emergency medical services' abilities to care for a simulated contaminated offsite individual. Provisions should be made to hold this drill annually outside of the exercise process since it is likely that the Counties will no longer be holding small-scale exercises.
N.2.d.	A	Radiological monitoring drills involve the testing of designated, and trained, monitoring/decontamination team members to effectively monitor and simulate decontamination procedures for a simulated off-site contaminated individual. Provisions should be made to hold this drill annually outside of the exercise process since it is likely that the Counties will no longer be holding small-scale exercises.
N.3.a.	A	The risk Counties will coordinate arrangements for appropriate supervision and evaluation for all drills in which the Counties are a participant and will rely on PEMA for the development of the full-participation exercise scenario.
N.3.b.	A	See comments to element N.3.a.
N.3.c.	A	See comments to element N.3.a.
N.3.d.	A	See comments to element N.3.a.
N.3.e.	A	See comments to element N.3.a.
N.3.f.	A	See comments to element N.3.a.

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
N.4.	A	A critique will be conducted by Federal and/or State representatives at the conclusion of each exercise to evaluate the ability of organizations at all levels to respond as specified in their respective RERPs. The Counties will participate, as appropriate, with Federal and State representatives in critique and evaluation activities, as necessary and appropriate.
N.5.	A	Based on the results of the critique and subsequent evaluation, the Counties will update their RERPs for the Limerick Generating Station and institute corrective actions, where needed. They will also be responsible for coordinating assistance for risk municipalities within their jurisdiction with updating their RERPs for Limerick, and instituting corrective actions, where needed.
O.		Radiological Emergency Response Training
O.1.	I	Chester County will "encourage," Montgomery County will "coordinate and encourage," and Berks County will "ensure" the training of appropriate individuals. It is realized that the risk Counties cannot coerce individuals to participate in training, but, at a minimum, they should actively promote and coordinate the program.
O.1.b.	I	All three risk Counties will see that radiological emergency response training is included as part of County-sponsored fire, police and ambulance/rescue training, as well as for municipal emergency management officials. Montgomery County also states that training will be offered to health care, school and special facilities staff while Berks and Chester Counties will offer training to those departments and organizations which have mutual aid agreements with risk municipalities, departments and organizations. The three risk County plans should be revised to reflect that training will be available for all the above-referenced organizations. One County should not be offering training to more groups than the other Counties as all the organizations named are critical to an emergency response. The Montgomery County RERP states that their training will include information on radiation, nuclear generation, RERP procedures, and dosimeters and radioprotective drugs. The other Counties' plans do not address the content of their training programs.
O.4.	A	A listing of training courses that the risk Counties and municipalities will participate in (sponsored by the Federal and State governments and the Philadelphia Electric Company) is listed in Annex R of the respective County RERPs. The

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
		number of spaces needed in the various courses for both initial and replacement training is not complete, in all cases.
O.4.c.	I	Although this element is listed as N/A in the cross-reference, Annex R, Section III.A. of the Montgomery County RERP acknowledges that additional training in monitoring/decontamination procedures will be coordinated for appropriate emergency workers. Since this is an important part of the total emergency response effort, all three risk Counties should make plans to provide training to monitoring/decontamination personnel.
O.4.d.	A	See comments to element O.4.a.
O.4.f.	I	See comments to element O.1.b.
O.4.g.	A	See comments to element O.4.a.
O.4.h.	A	See comments to element O.4.a.
O.4.j.	A	See comments to element O.4.a.
O.5.	I	All risk Counties recognize that training for radiological emergency response is an ongoing activity. Refresher training is anticipated for County and municipal personnel who have received initial training. Montgomery County calls for initial and refresher training annually, Chester County calls for refresher training on an annual basis while Berks County talks about refresher training on a periodic basis. Consistency on this issue is needed between the three County RERPs.
P.		Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans
P.1.	A	Since it is assumed that individuals responsible for the planning effort would be considered "appropriate County and municipal personnel" expected to participate in training activities, this element has been adequately addressed. Also see comments to element O.1.
P.2.	A	The respective County Commissioners have appointed a Director and/or Coordinator who is responsible for the development and implementation of their RERP and for ensuring that it is consistent with the Commonwealth's RERP and is also consistent with and supported by municipal RERPs for each municipality located within the plume EPZ. The Director and/or Coordinator reviews and updates the plan on an annual basis.

PLANNING STANDARD/ ELEMENT	RATING	COMMENTS
P.3.	A	See comments to element P.2.
P.4.	A	Although Chester County states that their Director reviews and updates their plan on an annual basis and certifies the review to PEMA, the other two risk Counties call for an expanded role of coordination of any changes with PEMA, school districts, special facilities, other Counties, and municipalities within the plume EPZ. The municipal and school district plans establish the municipal EMC and the Superintendent of Schools, respectively, as the individual responsible for the annual review. Based upon exercise critiques, the Counties will assist the risk municipalities within their jurisdiction in instituting corrective actions, where needed.
P.5.	A	As revisions are made, revised and dated pages will be provided to all individuals and agencies listed as holding RERP copies. A "Record of Chages" page will be used to keep summary records of all changes to date. Whenever appropriate, revised pages will be marked where changes have been made.
P.6.	A	Each risk County plan contains two annexes detailing Supporting Plans and Implementing Procedures and Municipal Plans, while the risk municipalities RERPs also have a listing of Supporting Plans.
P.7.	A	The various plans contain detailed annexes, appendices, and attachments containing information on procedures required to implement the plan.
P.8.	A	The various plans contain tables of contents and the risk County RERPs are cross-referenced to the criteria of NUREG-0654/FEMA-REP-1, Rev. 1.
P.10.	I	Provisions have been made in many, but not all, cases to update telephone numbers quarterly. Critical areas where this has been omitted include municipal contacts, transportation resources, special facilities, industrial and utility contacts, etc. It is realized that in most instances, telephone numbers remain stable for long periods of time. There have, however, been incidents during RERP exercises where contact could not be made because of an out-of-date telephone listing, specially in the area of municipal emergency management coordinators.

FEDERAL EMERGENCY MANAGEMENT AGENCY

REGION III

INTERIM FINDINGS

ON THE

OFFSITE RADIOLOGICAL EMERGENCY

RESPONSE PLANS

FOR THE

LIMERICK GENERATING STATION

APRIL 1984

I. INTRODUCTION

A. Identification

The Limerick Generating Station is located in southeast Pennsylvania, with the Schuylkill River separating the western portion of the site (East Coventry Township, Chester County) from the eastern portion of the site (Limerick and Lower Pottsgrove Townships, Montgomery County). The major plant structures are located in Limerick Township. The site is 587 acres in area.

Operated by Philadelphia Electric Company (PECo), the plant consists of two 1100 MWe boiling water reactors, both of which are at various stages of completion.

The Borough of Pottstown, Montgomery County, is the nearest population center, lying 1.7 miles from the site. Its 1980 population was 22,729. The City of Philadelphia, population 1,688,210, lies approximately 21 miles to the southeast.

There are three counties within a 10-mile radius of the facility: Montgomery, Chester and Berks. Within those three counties there are forty-two municipalities.

Within the 50-mile Emergency Planning Zone (EPZ) there are two Maryland Counties: Harford and Cecil, one Delaware County: New Castle, nine New Jersey Counties: Salem, Cumberland, Gloucester, Camden, Burlington, Mercer, Somerset, Hunterdon and Warren, and fourteen Pennsylvania Counties: the three plume zone Counties, Philadelphia, Bucks, Lehigh, Northampton, Monroe, Carbon, Schuylkill, Lebanon, Lancaster, York, and Delaware.

In the event of an incident requiring implementation of the Commonwealth of Pennsylvania's Radiological Emergency Response Plan (RERP), the State agency through which the Governor will exercise coordination/control will be the Pennsylvania Emergency Management Agency (PEMA). As in all emergency situations, the Governor retains directional authority. Primary responsibility for policy and direction, within PEMA, rests with the Pennsylvania Emergency Management Council.

The Bureau of Radiation Protection (BRP), within the Department of Environmental Resources, is responsible for conducting technical assessment of the incident, evaluating protective actions that might be taken and making recommendations to PEMA. The Director of PEMA will activate necessary response mechanisms based upon the incident assessment and advice of BRP.

Each risk County, in coordination with PEMA, is responsible for implementing its RERP to provide protection for the health, and ensure the safety, of all persons within the County. The response activites of municipalities will be coordinated by the respective County as detailed in the County RERP.

B. General Background

No formalized title has been given to the Commonwealth of Pennsylvania's submission. The package has been divided into five areas: Annex E, "Fixed Nuclear Facility Incidents, " to the Disaster Operations Plan, Commonwealth of Pennsylvania, dated November 1981; draft Radiological Emergency Response Plans for the three risk Counties - Montgomery, Chester and Berks; draft RERPs for the forty-two risk municipalities; draft RERPs for the thirteen risk school districts and draft RERPs for the two support Counties - Lehigh and Bucks. This totals sixty-one offsite Radiological Emergency Response Plans, as noted above, all except Annex E considered drafts with various dates. At the present time, the Regional Office has received copies of the RERP for the Pennhurst Center, but is still awaiting the plan for the State Correctional Institution Graterford, both of which are State institutions lying within the plume exposure EPZ.

On December 6, 1983 PEMA forwarded copies of the plans to FEMA, Region III for Regional Assistance Committee (RAC) review. This process is essentially complete. A copy of the RAC's comments will be forwarded to PEMA shortly. A full participation exercise is scheduled for July 25, 1984.

As noted above, the Limerick facility is in close proximity to the City of Philadelphia. Because of this, a significant amount of interest has been generated in both the local press and media, as well as in the community surrounding the plant. Various intervenor groups have filed contentions concerning offsite emergency planning, involving both the plume exposure and ingestion exposure EPZ. These matters are under consideration by the Limerick Atomic Safety Licensing Board at the present time.

There are some concerns regarding possible logistical considerations in the event of the need to evacuate residents and transients from the plume exposure EPZ. According to 1980 Census figures, there are 183,868 people who reside within approximately 10 miles of Limerick. Since the local highway network is primarily made up of municipal, State and Federal two and four-lane highways and there are few large capacity expressways in existence, (in conjunction with the fact that it is the Commonwealth's policy to initiate protective actions within the entire plume exposure EPZ), significant problems could develop in the event of an evacuation, especially in inclement weather. This

situation may be resolved upon a review of the Evacuation Time Estimates Study, which has not been completed as of now. In addition, as noted above, there are two major state facilities located within the plume EPZ - a large mental retardation center and a State prison. It would require considerable time and resources to evacuate these institutions.

The only information on the offsite RERPs for Limerick are the FEMA/RAC comments on file in the Regional Office.

II. EVALUATION (FINDINGS)

This portion of the report will concentrate on County, municipal and school district planning, as State planning has been dealt with in detail in the May 14, 1981 interim finding and the May 24, 1982 formal evaluation of the Commonwealth of Pennsylvania's and Risk Counties' Plans and Preparedness, site-specific to the Three Mile Island Nuclear Station. As State planning is generic to all nuclear power plant sites in Pennsylvania, there is no need to repeat previously documented material, except in the case where it has particular relevance to Limerick. Any deficiencies noted in the "350" review for TMI are peculiar to those plans and would have no impact on the Limerick package.

A. Plans

The State, County and Municipal RERPs have been developed under the authority of, and in accordance with, the provisions of the Pennsylvania Emergency Management Services Act of 1978, P.L. 1332, while school district plans are prepared under authority of their respective Boards of Education and are consistent with P.L. 1332.

Annex E consists of a "Basic Plan" and 24 appendices. The appendices deal with such topics as Site Characteristics, Maps, Emergency Action Level Guidelines, as well as specific subject areas, including Notification Procedures, Protective Response, Radiological Exposure Control, etc., and how they will be addressed. The risk County plans are organized in a similar manner.

As an annex to the Pennsylvania Disaster Operations Plan, there is a recognition of the interrelationship between radiological emergency response planning and other man-made and natural disaster planning. The State's overall emergency planning effort is based on the premise that similarities among the various disasters/emergencies require maximum standardization of procedures and practices, to the extent possible. Supporting plans to Annex E include the host and risk county plans as well as the implementing procedures of the various state agencies.

The three risk County plans have been developed, specifically with a concern toward responding to incidents at the Limerick Generating Station, which might impact the health and safety of persons within their respective jurisdictions. Supporting plans and implementing procedures include those for municipalities, school districts, non-profit private schools, colleges, support counties, hospitals and nursing homes, special facilities, prisons and State Police troops, National Guard units, the American Red Cross, etc.

NUREG-0654 Standards

A. Assignment of Responsibility (Organization Control)

The various risk County Radiological Emergency Response Plans identify the major State, local, Federal and private sector organizations intended to be part of the overall response network. Entities listed include the Commonwealth of Pennsylvania (specific State agencies, such as State Police, National Guard, etc.), the Federal Government, municipalities, and the American Red Cross.

The operational roles of the Counties, municipalities and school districts are handled in two ways. There is a listing of responsibilities in general terms and by functional areas, i.e. public information, transportation, medical support, evacuation, etc. The various jurisdictions also have delineated their concept of operations. In the case of the Counties, these have been presented in a general operational format and also by functional area. School districts have shown their concept of operations based on the alternatives of school in session/school not in session. In all cases, the concept of operations are broken down by classification levels, thus providing for a coordinated response.

Each organization has identified a specific individual, by title, who would be in charge of their emergency response. At both the County and municipal levels the governing bodies have the overall responsibility for the health and safety of their residents. Emergency Management Coordinators (EMC) have been designated to coordinate response actions. School Superintendents are responsible for assuring the safety of all students and staff in their district, while building principals are responsible for the coordination of protective actions and for the safety of students and staff within their schools.

Each County calls for 24-hour response through paid staff supplemented by volunteers. Twenty-four hour emergency response at the municipal level is not assured due to the fact that many staff positions are vacant, according to the latest municipal draft plans.

Since the municipalities have a significant role to plan in the emergency response effort, and a large majority of them have not established a 24-hour response capability, this planning standard is incomplete at present.

C. Emergency Response Support and Resources

The risk Counties will cooperate with the Federal Government, PEMA and the Pennsylvania Department of General Services in planning for, and making, necessary support arrangements. PEMA is the lead agency responsible for finalizing the arrangements to support Federal Government response personnel.

None of the three risk Counties will have a representative at the Limerick Emergency Operations Facility as they have no involvement with accident assessment. As noted in the introduction, this function is the concern of the Bureau of Radiation Protection.

Support facilities, organizations or individuals have been thoroughly documented in the various RERPs. Agreements and Statements of Understanding are in various stages of development with some complete and some still in the process of being formulated. When finalized, these documents will cover such critical areas as the American Red Cross, EBS stations, amateur radio organizations, transportation resources, roadway clearance and fuel resources, relocation points for emergency services located within the plume exposure EPZ, mass care and reception centers, emergency worker decontamination stations, host schools, etc.

This planning standard is incomplete at present.

D. Emergency Classification System

All local organizations are utilizing the standard emergency classification and emergency action level scheme which is in complete conformance with that established by the utility.

Detailed response plans have been developed by all political jurisdictions based upon the emergency action levels and protective action alternatives. The overall responsibility for decision-making within the Counties and municipalities lies with their respective governmental bodies, while the Superintendent of Schools will be responsible for their particular school district.

The authority to compel an evacuation lies only with the Governor and is based on recommendations received from PEMA and BRP. The County Commissioners can recommend an evacuation but cannot direct that one take place.

There are some differences as to the possible organizations which would make protective action recommendations to the three Counties. Montgomery County cites the Limerick Generating Station or the Philadelphia Electric Company. Chester County cites PEMA and Berks County cites PEMA and BRP. These discrepancies will need to be addressed before this planning standard can be considered complete.

E. Notification Methods and Procedures

The method of notifying the risk Counties is incomplete due to the fact that the general public alert and notification system is currently undergoing a complete revision. Specific details are needed in the plans as to the method to be utilized and the organization(s) who will be performing the notification to the Counties, at each classification level. Provisions have been made for the logging of information on an official "Incident Notification Form," which appears to be very comprehensive.

In the event of an incident at Limerick, the County Communications Departments will notify the risk municipalities, starting at the Alert stage, with the telephone being the primary means of communication. The Region is recommending that an abbreviated "Incident Notification Form" should be developed for use by the municipalities.

All County, municipal and school district plans have detailed procedures regarding the alerting, notifying and mobilizing of emergency response personnel. This includes County, municipal and school district personnel as well as other organizations involved in emergency response - the American Red Cross, health care and other special facilities, recreation areas, major industries/utilities, transportation systems, etc. Notification will occur, for the most part, at the Alert stage, with partical mobilization taking place at that point. Call down lists are included in applicable plans.

The three Counties have determined the point (Montgomery and Berks - Alert, Chester - Site Emergency) at which they may commence issuing public information releases via the press or media; these statements will explain actions being taken to protect residents and transients within the plume EPZ.

At the point it becomes necessary to alert the public (due to potential dangers and/or the need to take protective action) PEMA will coordinate among the three risk Counties the specific time to activate the public alert/notification system and the Counties will determine the appropriate EBS announcements to make. These (EBS) announcements will not be made before the public alert system is activated. Of concern to the Region is that, according to the Pennsylvania EBS Operational Plan, dated December 1983, Montgomery and Chester Counties have designated EBS Stations which are not considered to be the primary points of contact for the Philadelphia Operational Area. In Chester County's case it is acknowledged that the station is not on the air 24-hours a day. In both cases, there is no mention of backup power. Bad weather or a power failure could result in a significant delay in getting critical information/instructions to the public.

As noted above, because of a decision by the utility to switch from a community-wide telephone alerting system to a standard siren system (after the plans were submitted for informal review), the plans do not reflect the current situation.

Draft messages have been included in the County RERPs to be utilized, whenever necessary, during an emergency. The messages appear to be comprehensive in nature and should be easily understood in an emergency situation.

This planning standard is incomplete at present.

F. Emergency Communications

Items discussed under Planning Standard E. that relate to this planning standard include: the need for a complete description of the notification to the local emergency response network, i.e., the method to be utilized (including means of communication) and the organization(s) who will be performing the notification; the need to explain, in detail the communications that will be utilized between the facility/EOF and the County EOCs; and the fact that the Counties and municipalities have delineated their alerting and activation procedures in an adequate manner.

The Montgomery County RERP describes, in a thorough manner, the capabilities of their communication system, including the equipment that would be utilized to interface with other Counties. Although the Chester and Berks County plans have somewhat similar information that details communication equipment, capabilities are not addressed. Neither of the latter two plans address inter-County communications.

The three risk Counties maintain an emergency medical communications network that provides for direct communications with their respective ambulance associations.

This planning standard is incomplete at present.

G. Public Education and Information

All risk Counties' plans discuss the fact that public information materials will be reviewed and distributed on an annual basis. The information will instruct the public at risk how they will be notified, what their actions will be, and who to contact for further information in the event of an incident at Limerick. In addition, the three Counties will participate in an annual news media orientation, sponsored by PEMA. The orientation will acquaint news media representatives with radiological emergency response plans and points of contact for release of public information during an emergency. Until such time as these programs have been established and reviewed by the Regional Office, this planning standard will remain open.

The three risk Counties have established the points of contact and the physical locations for use by the news media during an emergency. The media centers will be opened whenever the EOC is activated or, in Montgomery County's case, at Site Emergency. The locations are: Berks County - auditorium of the County Agriculture Center; Chester County - Room 322 of the Hazlett Building; Montgomery County - fifth floor conference room - Courthouse. The centers will be staffed by their respective Public Information Officers (PIOs).

The Chairman of the Board of County Commissioners, or his designee, will serve as the County's spokesperson. They will coordinate with their respective PIOs prior to the release of public information. However, there appears to be no statement calling for the exchange of information between designated spokespersons, thus creating the possibility of confusing and/or contradictory information being given to the public.

Each County will establish a Rumor Control Center whenever the EOC is activated, which will be staffed and operated by the PIO in Berks and Chester County and by the Operations Officer in Montgomery County. The rumor control numbers have been established and will be published as the primary numbers for responding to questions from the general public.

This planning standard is incomplete at present.

H. Emergency Facilities and Equipment

The various governmental jurisdictions, both County and municipal, have established emergency operations centers for use in directing and controlling response functions. Some municipalities, which are located entirely within the plume EPZ, are still in the process of determining alternate locations for their EOC in the event of a general evacuation. Although timely activation of the facilities and centers described in the plans is called for, there is a concern regarding the staffing of the municipal EOCs, in particular, as many staff positions remain vacant at the present time.

Monitoring (or survey) equipment is necessary for decontamination monitoring of emergency workers and the general public. The CDV-700, a geiger counter, will be utilized for this purpose. Chester and Berks Counties have determined the need for 270 survey meters between them, while Montgomery County has not made a determination as of yet. The two support Counties (Bucks and Lehigh) need approximately 265 survey meters. According to a recent telephone conversation with PEMA, adequate numbers of equipment are available to handle the monitoring requirements of emergency workers and the general public.

Although the County RERPs call for an inventory-inspection-operational check of the special issue and set-aside equipment and KI, it is only scheduled to take place annually rather than quarterly, or after each use. There is no assurance that sufficient reserves are available to replace that equipment which has been removed for calibration or repair. There is no statement that calibration of equipment will be at intervals recommended by the supplies.

Information regarding emergency supplies is scattered throughtout the different plans in various stages of completion.

This planning standard is incomplete at present.

I. Accident Assessment

The Counties and municipalities will rely upon BRP, through PEMA, for incident assessment, field monitoring, and representation at the Limerick EOF, for the receipt, analysis and coordination of field monitoring data.

It has been clearly stated in the interim and formal review of the offsite emergency plans site-specific to the Three Mile Island Nuclear Station that this planning standard has been adequately met. This has been confirmed at numerous full participation exercises conducted in conjunction with the various nuclear power plants throughout the Commonwealth of Pennsylvania.

This planning standard has been completely satisfied.

J. Protective Response

Protective measures have been identified for both the general public and emergency workers. For the public they include sheltering, selective evacuation and general evacuation. Items that would be implemented in support of these actions would include traffic and access control, mass care, agricultural, transportation and medical support, etc. Protective measures for emergency workers will take the form of radiological exposure control. They will be provided with the necessary dosimetry, potassium iodide and, when needed, double clothing and respiratory protection, along with up-to-date and critical information such as radiation levels, plume direction and speed, increased risks due to radiation exposure, etc. Decontamination is available for both the general public and emergency workers. Protective actions for institutional personnel and other transit-dependent individuals will be discussed later in this section.

Although the framework has been established as to how the various County, municipal and private organizations will respond to an emergency at Limerick, and the criteria for initiating protective actions (including protective action guides) has been delineated, it is still not apparent that there is an ability, at this point in the planning and preparedness process, to <u>implement</u> protective measures. This is based on information and/or resources that are lacking at the present time. These include vacant positions at the municipal level, unmet needs and resources, outstanding letters of agreement, incomplete information on transit-dependent individuals, including residents with special medical requirements, lack of information on parks and recreation areas, etc.

An evacuation map has been included in the County and municipal plans, while maps showing reception centers, mass care centers and host schools are still under development.

The means for dealing with mobility-impaired individuals is incomplete at present. This is due, in part, to the fact that the Regional Office has not received a copy of the plan for the State Correctional Institution, Graterford. In addition, the municipalities have not completed developing listings of homebound individuals requiring ambulance transportation or other special assistance.

There are two hospitals and four nursing homes in the Montgomery County portion of the EPZ and three nursing homes and one hospital in the Chester County portion; there are no health care facilities in the Berks County portion of the plume exposure EPZ.

Potassium iodide (KI) tablets and dosimeters are distributed to the Counties along with liquid KI to all designated hospitals and nursing homes. The latter is due to the fact that the evacuation times of certain health facilities are expected to be greater than that of the general population. The lists of the dosimetry/KI kits in the Montgomery and Berks County plans are incomplete, while the distribution policies and procedures also appear to be somewhat vague. An adequate supply of KI does not yet exist and PEMA is currently negotiating with the utility to obtain the necessary numbers of CDV-730s (or DCA-622s) and thermoluminescent dosimeters.

Potassium iodide will not be administered to the general public and should be taken only on the order of the Secretary of the Pennsylvania Department of Health.

The principal means of relocation in the event of an evacuation is the private automobile, augmented by other transportation. Information is incomplete regarding the number of buses and ambulances available for evacuation. This is essential information as it is estimated that 317 buses and 30 ambulances would be needed to transport individuals from the plume EPZ. It is expected that sufficient transportation will be provided to move all students inside the EPZ to host schools in one lift.

The assumption has been made that 50% of the people evacuating the plume exposure EPZ would need mass care services. This would amount to a total of approximately 92,000 spaces. Adequate mass care facilities are located in the three risk Counties along with the two support Counties - Bucks and Lehigh, all of which are outside a 20-mile radius of the Limerick Generating Station.

Traffic capacities of evacuation routes under emergency conditions and a time estimates study for evacuation of the plume exposure pathway EPZ will be performed under the auspices of the Philadelphia Electric Company. When finalized, it is expected that the risk Counties will review and evaluate the findings and include them in their respective RERPs.

The Pennsylvania State Police, supported by the National Guard and municipal police, will control access into the plume exposure EPZ during sheltering or evacuation. Access control points have been determined, including such information as the post number, location, municipality, instructions, number of personnel and responsible organization. The Montgomery County listing is incomplete at present since it has not been determined who will man many of the municipality-determined posts.

Removal of traffic obstructions, roadway clearance, and fuel resources is the responsibility of the Public Works Officer/Group of the three risk Counties. Municipal emergency management agencies are tasked with providing these services within their juriscictions.

Documentation of resources to support municipal and County needs for dealing with potential impediments to evacuation is, in many cases, incomplete at present. Once all the necessary assistance has been identified, agreements, letters of intent, or statements of understanding will have to be included, as called for in the various County and municipal RERPs.

The listing of traffic control points appears to be complete, but the specific agency responsible for manning them has not been determined in many cases.

Upon arrival at a mass care center, evacuees will be monitored for radiation exposure upon their request, or when BRP has directed that the situation warrants it. All persons needing mass care will be registered and family units kept together if at all possible. Upon completion of the registration form, a copy will be forwarded to the Mass Care Coordinator at the County EOC. Information is still incomplete regarding monitoring/decontamination team assignments in the Chester and Montgomery County RERPs and the numbers of necessary equipment in the Montgomery County Plan.

This planning standard is incomplete at present.

K. Radiological Exposure Control

Each emergency worker assigned tasks within the plume exposure pathway EPZ will be provided two self-reading dosimeters, one DCA-622 or CDV-730 (0-20R) and one CDV-742 (0-200R), along with one thermoluminescent dosimeter (TLD). An adequate supply of dosimetry is not currently available; negotiations are currently underway with PECo to obtain the needed equipment.

Each emergency worker is instructed to read their self-reading dosimeter at least once every thirty minutes. They are also responsible for completing a Dosimetry - KI Report Form and returning it to their particular organization at the termination of their services. Each

organization will then inventory the self-reading dosimeters and prepare a summary report of use. All applicable forms and equipment will be delivered to the Counties, who in turn will forward the TLDs and forms to PEMA. They will then be passed on the BRP, who will deliver the TLDs to the service contractor, while BRP will retain the dosimetry records for analysis, reporting and storage.

Elected officials in authority may authorize, in advance, volunteer emergency workers to exceed the protective action guidelines (25R whole body exposure) to a maximum of 75R for a life-saving mission. This is intended to avoid delays in performing a necessary life-saving mission. However, a decision chain has not been established for authorizing emergency workers to incur exposures in excess of the EPA General Public PAGs, i.e. 1-5R whole body (as called for in this Planning Standard). Emergency workers have been given the authority to automatically exceed the Emergency Worker PAGs.

In the event of an incident at the Limerick Generating Station, BRP will issue a statement indicating whether or not decontamination monitoring is required and PEMA will send this message through emergency management channels. Generally, 0.05 mR/hr, or more, above background is the action level set by BRP indicating that decontamination of an individual is necessary.

Each Radiological Exposure Control Annex to the County RERPs has an appendix detailing decontamination procedures. General information includes organization at mass care centers, equipment and personnel requirements, record keeping and progress reports, etc. Procedures for monitoring teams are explained in a thorough manner, concerning the decontamination of people, wounds, clothing and supplies, instruments and equipment; disposal of contaminated wastes is addressed, as well.

This planning standard is incomplete at present.

L. Medical and Public Health Support

A large number of hospitals (twenty) with radiation exposure/contamination treatment capability are referenced in the risk County RERPs. The Hospital of the University of Pennsylvania has been designated as the referral center for the entire Delaware Valley with the other hospitals serving in a backup role. For Berks County, the Reading Hospital and Medical Center has been designated as the primary treatment facility, with two other hospitals as secondary treatment facilities. Although it is assumed that persons providing radiation treatment at the hospitals are adequately prepared to handle contaminated victims, further information is needed regarding the capabilities of emergency medical service (EMS) personnel.

Ambulance services located within, or serving, the plume exposure pathway EPZ will not routinely be used for evacuation support to health care facilities. They would be available for the continued EMS coverage of their service area, including transporting victims of radiological accidents to medical support facilities. Ambulance services located outside and not serving the plume EPZ, and support County ambulance services, will evacuate health care facilities located within the EPZ, evacuate homebound invalids and provide any other needed assistance.

This planning standard is essentially complete.

M. Recovery and Reentry Planning and Post Accident Operations

Each County has an annex dealing with reentry, delineating specific responsibilities to the County staff, the municipalities, and the school districts, thus providing for an orderly return of evacuees. PEMA will advise the Counties that reentry is permissible, based upon technical information supplied by BRP.

This planning standard has been completely satisfied.

N. Exercises and Drills

The County plans need to be updated to reflect the revised FEMA rules regarding exercises. Specifically any reference to small-scale exercises needs to be deleted and a full participation exercise including the three risk Counties, municipalities, school districts, etc., along with the utility should be referenced as taking place every two years. It is expected that the Commonwealth of Pennsylvania will participate fully at Limerick as part of the rotational process among the five facilities located in the State and will support the Counties to the necessary degree when not participating fully.

PEMA is relied on for the development of exercise scenarios. The Counties and municipalities, and school districts, when applicable, will take part in full participation exercises, which will test as much as is reasonably achievable. The Counties will participate, as appropriate, with Federal and State representatives in critique and evaluation activities and will coordinate the participation of risk municipalities within its jurisdiction in critique and evaluation activities, as necessary and appropriate. Based on the results of the critique and subsequent evaluation, the Counties will update their RERPs for Limerick and institute corrective actions, where needed; the Counties are also responsible for assisting risk municipalities within their jurisdiction in accomplishing the same tasks.

The risk Counties will coordinate arrangements for appropriate supervision and evaluation for all drills in which the Counties are a participant. A communication drill between the facility, State and the risk Counties will be held monthly, involving a combination of radio contact and telephones. The drill will test both the adequacy of communications links and response agency understanding of emergency action levels and message content. Medical emergency drills will involve the testing of the emergency medical services ability to care for a simulated contaminated offsite individual, while radiological monitoring drills will involve the testing of designated, and trained, monitoring/decontamination team members to effectively monitor and simulate decontamination procedures for a simulated off-site contaminated individual. The latter two drills are expected to be conducted annually.

This planning standard is essentially complete.

O. Radiological Emergency Response Training

Chester County will "encourage," Montgomery County will "coordinate and encourage," and Berks County will "ensure" the training of appropriate individuals. Radiological emergency response training will be included as part of County-sponsored fire, police and ambulance/rescue training, as well as for municipal emergency management officials. Montgomery County also states that training will be offered to health care, school and special facilities staff while Berks and Chester Counties will offer training to those departments and organizations which have mutual aid agreements with risk municipalities, departments and organizations.

Although it is understood that the Counties cannot coerce individuals to participate in training, they should, at a minimum, actively promote and coordinate the training program. In addition, each County should provide training to all the above-referenced organizations, as they are all critical to an effective emergency response.

The Montgomery County plan states that County-sponsored training will include information on radiation, nuclear generation, RERP procedures, and dosimeters and KI. The other Counties' plans do not address the content of their training programs. A listing of training courses that the risk Counties and municipalities will participate in (sponsored by the Federal and State governments and the Philadelphia Electric Company) is listed in Annex R of the respective County RERPs. The number of spaces needed in the various courses for both initial and replacement training is not complete in all cases. At the present time, Montgomery County is the only jurisdiction that calls for training in monitoring/decontamination procedures.

All risk Counties recognize that training for radiological emergency response is an ongoing activity. Refresher training is anticipated for County and municipal personnel who have received initial training.

Montgomery County calls for initial and refresher training annually, Chester County calls for refresher training on an annual basis while Berks County talks about refresher training on a "periodic basis." Consistency on this issue is needed between the three County RERPs.

This planning standard is essentially complete.

P. Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans

The respective County Commissioners have appointed a Director and/or Coordinator who is responsible for the development and implementation of their RERP and for ensuring that it is consistent with the Commonwealth's RERP and is also consistent with and supported by municipal RERPs for each municipality located within the plume EPZ. The Director and/or Coordinator reviews and updates the plan on an annual basis and certifies the review to PEMA. Montgomery and Berks Counties go even further, calling for an expanded role of coordinating any changes with PEMA, school districts, special facilities, other Counties, and risk municipalities. The municipal and school district plans establish the municipal EMC and the Superintendent of Schools, respectively, as the individual for the annual review. Based upon exercise critiques, the Counties will assist the risk municipalities within their jurisdiction in instituting corrective actions, where needed.

As revisions are made, revised and dated pages will be provided to all individuals and agencies listed as holding RERP copies. A "Record of Changes" page will be used to keep summary records of all changes to date. Whenever appropriate, revised pages will be marked where changes have occured.

Provisions have been made in many, but not all, cases to update telephone numbers quarterly. The primary area of concern is municipal contacts. There have been incidents during RERP exercises where contact could not be made because of an out-of-date telephone listing.

This planning standard is essentially complete.

B. Capability

As noted under the INTRODUCTION, a full participation exercise is scheduled for July 25, 1984. Thus, no statement can be made concerning the application of the plans or resources at the present time. FEMA region III will prepare a comprehensive Exercise Report evaluating the results of the exercise.

C. Support Activity

Training programs, drills and exercises were discussed in general terms in the review of Planning Standards N and O. Additional information has been obtained from Energy Consultants, a firm hired by the utility, concerning training sessions for offsite emergency responders. As of the end of February, a total of 46 sessions had been held with a total of 1,367 participants. The classes are divided into the following subject areas: school administrators, school staff, bus drivers, agriculture, emergency workers I, and emergency operations center I. An additional 31 sessions were to be given in March for 973 people. Future plans call for a minimum of 6 sessions in April for 163 participants and 5 sessions in May for 155 individuals. The Regional Office intends to observe various training sessions in order to make an overall determination on the adequacy of the training program. This will be dependent on receiving the necessary funding from FEMA Headquarters.

D. Deficiencies

"Category A" Deficiencies are those that would cause a finding that offsite emergency preparedness was not adequate to provide reasonable assurance that appropriate protective measures can be taken to protect the health and safety of the public living in the vicinity of the site in the event of a radiological emergency. "Category B" deficiencies are those where the plans are considered faulty, corrective actions are considered necessary, but other factors indicate that reasonable assurance could be given that, in the event of a radiological emergency, appropriate measures can be taken to protect the health and safety of the public.

FEMA Region III has determined that the following items are deficiencies from either a planning or resources standpoint:

"Category A"

1. Twenty-four hour emergency response at the municipal level is not assured due to the fact that many staff positions are vacant, according to the latest municipal draft plans. The risk municipalities have an important role to play in the coordinated response effort and thus their ability to operate 24-hours a day over an extended period of time is considered vital.

2. The means for dealing with mobility-impaired/transit-dependent individuals is incomplete. This is due, in part, to the fact that the Regional Office has not received a copy of the plan for the State Correctional Institution, Graterford. However, other items are unresolved as well, including the lists being compiled by the municipalities of those individuals with special medical requirements and those persons requiring transportation assistance. In addition, although the municipalities have estimated that 317 buses and 30 ambulances will be needed to transport individuals from the plume EPZ, there is no indication from the plans of the number of resources available, mobilization time, etc.

3. Potassium iodide, low-range, self-reading dosimeters and thermoluminescent dosimeters are not available in adequate numbers for emergency workers. There is no indication, at present, as to what plans the Pennsylvania Department of Health has for purchasing KI, while it is understood that PEMA is currently negotiating with the utilitiy for the necessary dosimetry. Until such time as this equipment is obtained, emergency workers would not have an adequate means of determining whether they were receiving any health-impairing doses of radiation.

4. Large numbers of traffic control points and/or access control points in the Montgomery County and Berks County RERPs have not had responsible agencies designated to man them. Since an evacuation would, most likely, be an extremely dangerous time period for those leaving the plume exposure EPZ and it is important to prevent those from outside the area from entering the affected area, this is considered to be a critical problem that needs to be addressed. Access control would also be important if sheltering became necessary.

"Category B"

1. All letters of agreements/statements of understanding need to be developed and/or signed. These documents cover such important areas as American Red Cross support, EBS stations, amateur radio organizations, transportation resources, roadway clearance and fuel resources, etc.

2. Since the County Commissioners can recommend that an evacuation should take place, the three risk Counties should agree on the same organizational source(s) for protective action recommendations.

3. The County plans do not reflect the current public alert and notification system as it was decided to utilize a siren system after the plans were submitted to the Region. Thus, the plans also do not reflect the method to be utilized in notifying the Counties of an incident at Limerick. The means to be utilized (type of communication) and the organization who will be performing the notification at each classification level, needs to be specified.

4. Montgomery and Chester Counties should give serious consideration to designating WIP and WMMR-FM (the primary EBS stations in the Philadelphia Operational Area) as the point-of-contact for emergency information. These stations have 24-hour capability, back-up power and can be clearly received in the plume exposure EPZ.

5. Public information brochures need to be developed for residents and transients and forwarded to the Regional Office for review.

6. The designated County spokespersons should commit themselves to the exchange of information in order to prevent the possibility of confusing and/or contradictory information being given to the public.

7. Provisions should be made to perform an inventory-inspection-operational check of the special issue and set-aside equipment quarterly, or after each use; to assure that sufficient reserves are available to replace that equipment which has been removed for calibration or repair; and to calibrate equipment at intervals recommended by the supplier.

8. The study of traffic capacities of evacuation routes under emergency conditions and a time estimates study for evacuation of the plume exposure EPZ needs to completed, analyzed by the Counties and a summary of the findings included in their respective RERPs.

9. Additional information is needed in certain municipal plans regarding the handling of potential impediments to evacuation, specifically the removal of disabled vehicles from evacuation routes.

10. A decision chain for authorizing emergency workers to exceed the General Public Protective Action Guides should be established, in order to keep potential doses to a minimum.

11. Each County should take an active role in promoting and coordinating a training program, including providing for initial and refresher training on an annual basis. All organizations, including those which have mutual aid agreements with risk municipalities, departments, etc., should be provided necessary training.

A copy of this report will be forwarded to the Pennsylvania Emergency Management agency for their use in upgrading the offsite emergency response plans.

III. RECOMMENDATION

The Federal Emergency Management Agency, Region III acknowledges that a significant amount of effort went into the development of this complex set of plans. Overall, it is felt that they are well organized and when completed will be comprehensive in nature. However, as noted above, there are presently four "Category A" and eleven "Category B" Deficiences that are a result of gaps in either planning or resources. For these reasons, we find that, at this point in the planning process, the local offsite emergency response plans developed for incidents at the Limerick Generating Station are inadequate and are not capable of being implemented.

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