

limerick ecology action

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Lawrence Brenner, Chairman
Administrative Judge
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

September 6, 1984.

Dr. Richard F. Cole
Administrative Judge
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. Peter A. Morris
Administrative Judge
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SEP 10 11:30

Re: Limerick Generating Station, Units 1 and 2
Philadelphia Electric Company
Docket Nos. 50-352, 50-353 *OL*

Gentlemen,

Enclosed please find Limerick Ecology Action's Respecification of Off-site Emergency Planning Contentions admitted by the Board's Order of April 20, 1984.

This filing is being made according to the schedule established by your Order of August 15, 1984 for the respecification of LEA's admitted Off-site Emergency Planning Contentions.

I have also enclosed the following supplemental information which I previously stated that LEA would provide to the Philadelphia Electric Company:

- 1) PSEA letter from Don Morabito dated 9/4/84 discussing concerns about teacher contract collective bargaining matters
- 2) PEMA Office of Training and Education, Report on the RERP Exercise at the Limerick Generating Station on July 25, 1984
- 3) Additional info on LEA-24/FOE-1

Respectfully submitted,

Maureen Mulligan
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LEA Vice President

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Catawba Balancing Test For Late-filed Contentions

In its July 26, 1983 Second Special Prehearing Conference Order, the Board directed Limerick Ecology Action (LEA) to address the factors set forth in the Catawba decisions,¹ which factors the Board will then balance in determining whether or not so-called "late-filed" contentions are admissible. The five factors of 10 CFR §2.714(a)(1) are as follows:

- (i) good cause, if any, for failure to file on time;
- (ii) the availability of other means whereby the petitioner's interest will be protected;
- (iii) the extent to which the petitioner's participation may reasonably be expected to assist in development of a sound record;
- (iv) the extent to which the petitioner's interest will be represented by existing parties;
- (v) the extent to which the petitioner's participation will broaden the issues or delay the proceeding.

The three-part test overlayed by the Appeal Board in Catawba (and affirmed by the Commission as appropriate in an admissibility determination) is that the contention:

- (a) is wholly dependent upon the content of a particular

1. Duke Power Co. (Catawba Nuclear Station, Units 1 and 2), ALAB-687, 16 NRC 460, 469-70 (1982); Duke Power Co. (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 18 NRC _____, _____, slip op. at 5-6 (July 1, 1983).

- document;
- (b) could therefore not have been advanced with any degree of specificity (if at all) in advance of the public availability of the document; and
 - (c) is tendered with the requisite degree of promptness once the document comes into existence and is accessible for public examination.

Limerick Ecology Action has respecified previously admitted off-site emergency planning contentions, pursuant to the Board's Orders, and hereby addresses the five 2.714 (a)(1) factors as overlaid by the three part test.

LEA first submitted emergency planning contentions in this proceeding on Nov. 24, 1981, based on all available information at that time. The Board's June 1, 1982 Special Prehearing Conference Order stated that the "Board finds that emergency planning contentions should be deferred until the emergency plans are available" (p.156). The schedule for filing "off-site" emergency planning contentions was established by the Board's Order of May 16, 1983 (Second Prehearing Conference Order). Page 5 states, "The triggering event for submission of these contentions will be the receipt by intervenors and the City of Philadelphia of the emergency plans as they are being submitted to FEMA following PEMA's review of them." The Applicant served these documents on Dec. 9, 1983. The Board's Order of Jan. 20, 1984, established a filing deadline of Jan. 31, 1984 for the receipt of all "off-site" emergency planning contentions. On April 20, 1984, the Board ruled on the admissibility of LEA's contentions, choosing to admit some of the contentions, and to again defer others.

Discovery on LEA's admitted "off-site" emergency planning contentions lasted from April 20, 1984 to June 25, 1984. On August 15, 1984, the Board issued an Order that established the schedule for respecification of LEA's admitted contentions, which required service on all parties by Sept. 6, 1984 (receive dates).

Limerick Ecology Action has good cause for filing these contentions according to the schedule discussed above. These contentions could not have been advanced with any more specificity on an earlier schedule

due to the fact that much of the Applicant's consultant's work on the development of off-site emergency response plans is yet to be completed. LEA's respecification of admitted contentions has been "tendered with the requisite degree of promptness" since we are following the schedule established by the Boards Orders of April 20, 1984 and August 15, 1984. LEA has no other means to protect its interests relating to "off-site" emergency planning contentions in that no other regulatory or judicial body has jurisdiction to hear LEA's concerns in a timely fashion. It is the NRC's duty, under its licensing authority to review all matters relevant to the licensing and operation of the Limerick facility, and that authority cannot be usurped by any other body. Furthermore, considering the potential political and other interests that influence their decision-making, participating governmental entities cannot be expected to adequately represent LEA's interests.

No other intervenor has standing on "off-site" emergency planning issues that can represent LEA's interests. The only individual intervenor that had any contentions admitted on "off-site" emergency planning issues has been consolidated under LEA.

LEA's participation in this matter can be expected to assist in the development of a sound record in this proceeding. LEA hopes to obtain expert assistance in pursuing many of its contentions, which while not required for licensing proceedings, is an aid to the Board as well as to LEA.

While the litigation of LEA's contentions may broaden the issues to be heard by the Board in this proceeding, and may impact the Applicant's schedule due to the fact that "off-site" emergency planning contentions are the only issues remaining to be litigated in this case, LEA did nonetheless raise these matters in a timely matter in 1981 when other contentions were first filed.

Overall, for the reasons set forth above, LEA believes that it is appropriate for the Board to accept LEA's voluntary narrowing and focusing of LEA's admitted "off-site" emergency planning contentions.

Sept. 6, 1984

Thomas Sullivan

The draft Chester and Montgomery County and School District RERP's are deficient in that there is insufficient information available to reasonably assure that the numbers of buses to meet the needs of any of the schools are available, or that they will be able to reach the schools during a radiological emergency.

Specifically,

1. There is no assurance that bus companies are committed to providing even a "minimum" number of buses to assist in an evacuation in the event of a radiological emergency at Limerick.
2. School District and County RERP's do not contain reliable letters of agreement with bus companies in that:
 - a) there are no stated and set forth obligations
 - b) bus contracts are vague and unenforceable
3. There are no provisions for transportation from host schools to mass care centers, nor any assurance that bus companies are even aware of transportation needs beyond host schools.
4. School District and County RERP's are deficient because they fail to indicate assignment of buses to particular schools, including required mobilization time.
5. Radiological emergency planning for School Districts adjacent to and outside the Plume EPZ must take into consideration whether or not bus resources have been committed to provide assistance in the EPZ in the event an evacuation is recommended. These School Districts must develop emergency procedures that do not conflict with agreements made by bus companies to provide transportation assistance to risk school districts within the EPZ.

For example, page I-2-9 of the Montgomery County RERP, draft #6 indicates that North Penn School District operates 66 buses. Due to the fact that the section marked "units available for mobilization" and "Limerick assignments" are 'blackened out' in the plan, it is very difficult to determine where and if these buses have been assigned to assist with an evacuation within the EPZ. In addition, North Penn High School is a Mass

Care Feeding Center and a Transportation Staging Area. It is important to verify that normal and/or early dismissal procedures for this School District due to a radiological emergency at Limerick would not interfere with or take precedent over a commitment to provide assistance evacuating a risk school district.

6. There is no assurance that unmet transportation needs identified in the most recent draft county RERP's have been or can be obtained.
7. There is no assurance that buses sent from other areas can evacuate children in a timely manner, due to the fact that the RERP's fail to include assignment listings and required mobilization time.
8. There is no basis for the assumption in the Applicant's HMM Evacuation Time Estimate Study that "up to one hour may be required to assemble buses, transport vehicles and to load students onto buses". (page 5-5)

On June 8th, 1984, Dr. Claypool announced an early dismissal of the Owen J. Roberts School District, which indicated that unless bus drivers were notified while they were physically in their buses, that at least a 2 hour delay should be anticipated before Owen J. Roberts School District would have enough buses for an early dismissal.

(See Attachment #1 of LEA's 7/16/84 Response to Philadelphia Electric Company Interrogatory Responses ---- Memo from Dr. Claypool, District Superintendent, dated 6/12/84)

9. Chester County has not obtained any written agreements with bus companies to provide transportation for School Districts in the event of a radiological emergency. (Conversation with John MacNamara, Assistant Director of Emergency Services for Chester County 9/5/84).
10. Additional traffic control measures are necessary around School District buildings to insure that parents attempting to pick up their children will not block the access of buses to the school attempting to transport children to a host school.
(See 5/1/84 letter from Dr. Claypool, Superintendent at Owen J. Roberts School District to John McNamara, Chester County Dept. of Emergency Services, page 4, included with PEMA's 7/11/84 Answers to LEA Interrogatories.)

The draft Montgomery, Chester, and Berks County RERP's and the School District RERP's are not capable of being implemented because 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, children are not adequately protected by the draft RERP's.

Specifically,

1. Adequate consideration has not been given to parental/child behavior and to family decision making patterns in the emergency planning process. Families residing within the 10 mile EPZ have not been given any information or instructional brochures. To be effective, emergency planning information must be widely disseminated, extremely detailed, and available in several languages. Most parents do not know much about the existence of emergency response plans for radiological emergencies. Few parents have seen a school or municipal emergency response plan. The same is true for most teachers.
2. There has been no pre-identification of teacher volunteers willing to stay on duty in the event of a radiological emergency. There is no basis to assume that such performance is considered part of a teacher's contractual obligations. PSEA, the legally certified bargaining representative for all teachers (and other professional bargaining unit employees) sees a clear conflict between the evacuation plan provisions and virtually all collective bargaining agreements currently in place in the school districts. (See attached letter from Mr. Morabito, Regional Field Director for PSEA, dated 9/4/84.)

3. There has been no determination of which school district buildings are adequate for sheltering purposes. Lack of confidence in the workability of plans for carrying out sheltering as a protective measure will impact on the degree of confidence a teacher or school staff member will have in the safety of the plans, which will in turn bear on the willingness of teachers/ school staff to stay on duty in the event of a radiological emergency.
4. Post training surveying is 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.
5. Unannounced evacuation and sheltering drills should be used to determine the effectiveness of training programs, and will help to increase the degree of confidence that school staff/ teachers have in the workability of the school district Radiological Emergency Response Plans. These assurances are critical to the workability of the School district RERP's.
6. The School District RERP's do not require the provision of trained school staff on buses in the event an evacuation is ordered. The plans also fail to establish minimum staffing requirements to cope with the psychological trauma that children will undergo during a radiological emergency. Frantic, uncontrolled behavior may hamper emergency response efforts.

BASIS: PEMA Report on the RERP Exercise at the Limerick Generating Station, on July 25, 1984, dated August 10, 1984 (Office of Training and Education): comments on page 5 regarding Pottstown School District, and page 10 regarding Boyertown School District - copy of the report is included with this filing.

10 CFR § 50.47(a) & (b)(1), (b)(7), (b)(15); NUREG 0654 Criteria A.1, Criteria A.2, Criteria A.3, Criteria G.1, Criteria N.1, and 10 CFR § 50-47 (b)(14).

School District RERP's, Basic Plan, Logistics of Evacuation II.G.3(d). (for all School District RERP's except Owen J. Roberts)

Nancy M. Noonan, president
John M. Yarnovic, vice president
James Stevens, treasurer
K. Eugene Preston, executive director

September 4, 1984

To Whom It May Concern:

The following is in response to questions regarding the position of PSEA on the school district evacuation plans proposed by PECO for the Limerick Generating Station.

First of all, let me make it clear that PSEA/NEA is the legally certified bargaining representative for all teachers and other professional bargaining unit employees in the majority of the school districts surrounding the Limerick Generating Station. As the certified bargaining representative, PSEA is bound by the Public Employee Relations Act to represent our members in all matters concerning their "wages, hours, terms and conditions of employment."

After examining several of the proposed evacuation plans (which were almost identical), I contacted our legal division for their opinions on the issue. Mr. Anthony Newman, PSEA's general counsel, has advised us that any unilateral acceptance of these evacuation plans (which clearly impact on teachers' wages, hours and terms and conditions of employment) without bargaining the impact of such plans with the certified bargaining agent is an unfair labor practice in violation of Section 1201, (a) (5) of the Public Employee Relations Act.

Mr. Newman also sees a clear conflict between the evacuation plans and virtually all of the collective bargaining agreements currently in place in the school districts. Those agreements outline working hours and responsibilities not addressed in the evacuation plans.

Thirdly, Mr. Newman is of the opinion that the evacuation plans assume an extension of the doctrine of "In Loco Parentis" that is untenable. This doctrine, which provides that teachers operate in place of the parents or legal guardian of a child, extends only to discipline and control, and does not include out of school custody in an emergency or crisis. That responsibility rests solely with the parents.

Finally, Mr. Newman makes the point that the evacuation plans do not take into account teachers' own family and personal obligations in the event of a nuclear emergency.

In addition, the National Education Association, our national affiliate, has adopted a resolution (A-25, 1982) regarding Nuclear Accident Emergency Plans. That resolution states in pertinent part that:

teachers and other school personnel must be involved in the development of emergency plans in case of accidents involving nuclear reactors and/or radioactive materials. All teachers must receive copies of these plans as they would pertain to their schools.


A reading of the proposed plans does not indicate the inclusion of teachers in the development of the evacuation procedures.

NEA's resolution also calls for training for all involved school personnel. Members of our bargaining unit at Owen J. Roberts School District have reported to us that the presentation which they were given by PECO after their school district had approved the evacuation plans was primarily an information session on the values of nuclear energy. As of this date, no teachers have received any actual training in the duties which would be required of them under the evacuation plans.

The Resolutions Committee of the State Association has been alerted to the issue of teacher involvement in Nuclear Accident Emergency Plans and is considering the presentation of a resolution on this issue to its representative assembly.

If there are any further questions on this issue, please do not hesitate to contact us.

Sincerely,


Donald F. Morabito
Regional Field Director, SER

dss

cc: Chase Beatty

REPORT OF THE RERP EXERCISE
AT THE
LIMERICK GENERATING STATION
ON
JULY 25, 1984

Office of Training and Education
Pennsylvania Emergency Management Agency
August 10, 1984

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I. INTRODUCTION

An exercise involving the Limerick Generating Station and a number of governmental bodies was conducted on Wednesday, July 25, 1984. The Limerick Generating Station, operated by the Philadelphia Electric Company, is located in Limerick Township in Montgomery County. Portions of the site extend to Lower Pottsgrove Township, Montgomery County, and East Coventry Township, Chester County.

The governmental bodies involved in this exercise included the Commonwealth of Pennsylvania, Berks County (risk/support), Chester County (risk/support), Montgomery County (risk/support), Lehigh County (support), and 37 risk municipalities in the 10-mile emergency planning zone (EPZ) surrounding the Limerick facility. Also involved were the regional office of the Federal Emergency Management Agency (FEMA) and the regional office of the Nuclear Regulatory Commission (NRC).

The purpose of the exercise was to test the viability of the county and municipal plans that have been developed to assist the various governmental bodies to effectively respond to an accident that may occur at the Limerick Generating Station. Specifically, communications, notification procedures, route alerting, the sounding of sirens, the activation of the Emergency Broadcast System (EBS), the distribution and effective utilization of dosimetry, the activation of reception and mass care centers, the manning of traffic control points (TCPs) and access control points (ACPs), and the general response of the emergency services were observed during this exercise to determine that the health and safety of the people residing in the 10-mile EPZ were effectively protected.

The Pennsylvania Emergency Management Agency (PEMA) placed observers/instructors at each action location who then provided assistance to the county and local personnel who were participating in the exercise. Additionally, these observers/instructors assessed the procedures that were followed and the actions that were taken. These assessments are contained in this report.

FEMA also had observers at 33 action locations. These federal observers evaluated the procedures and actions taken by the county and local participants. A report will be prepared by FEMA and submitted to the NRC and PEMA. The latter will, in turn, submit this report to the counties that participated in the exercise. This federal report is scheduled to be released on or before October 1, 1984.

II. MONTGOMERY COUNTY

A. County EOC

The coordinator and his staff did an outstanding job in virtually all aspects of the exercise. The only minor problem concerned control of dosimetry. The capability is there but the radiological officer could use some additional training. In general, this staff performed in an exceptional manner.

B. Risk Municipalities

1. Collegeville Borough: The EOC staff, including municipal elected officials, were well trained and well prepared for the exercise. The EOC was manned with sufficient staff in a very timely manner. The staff proceeded to set up the EOC in an organized and orderly fashion (i.e., designating each staff members' working space, connecting phones and radios, manning security, posting maps and status boards and providing each staff member with appropriate documents). The staff demonstrated a good working knowledge of the municipal plan and of the goals of the operation. Messages were received, transmitted, recorded, and logged in a very professional manner. The fact that the EOC staff was not afraid to discuss various procedures of the plan for clarification was highly commendable. In checking with institutions within the jurisdiction for transportation requirements, it was learned that Ursinus College had a soccer camp in session and would require transportation for 250 students. Had there been an actual emergency, these students would have been provided with bus transportation. The borough coordinator is a very effective leader and has a good grasp of her duties and responsibilities.

2. Douglas Township: This township did not participate in the exercise.

3. Green Lane Borough/Marlborough Township: The facility and staff were adequate but some problems occurred dealing with communications. The EOC staff was not familiar with radio equipment available. Confusion also developed when the county EOC sent a message to begin route alerting and the local coordinator had already started the process. However, overall response was adequate. This 2-municipality EOC was located in Marlborough Township.

4. Limerick Township: The organization in Limerick Township seems capable of responding adequately to an emergency at the plant. However, there were some problems evidenced during the exercise caused by the absence of the local coordinator. The police chief acted as coordinator and did a good job. He would show improvement with some additional training. The staff had to operate short handed but was able to perform their tasks satisfactorily. General enthusiasm and dedication overcame many shortfalls. Not all events were reported to the municipality by the county EOC.

5. Lower Frederick Township: The local emergency management organization was able to adequately respond to a simulated emergency at the Limerick plant. There were no serious deficiencies identified by the PEMA observer during the exercise.

6. Lower Pottsgrove Township: The EOC personnel did an excellent job. Staff training was adequate as was EOC and communications capability. Only deficiencies involved the outgoing message log and updating of status board. Of special note: when the exercise was terminated, EOC staff critiqued their performance and proposed remedies to deal with the deficiencies.

7. Lower Providence Township: This township did not participate in the exercise.

8. Lower Salford Township: The emergency management coordinator and his staff appeared to be capable of performing their required functions and successfully conducting an evacuation if necessary. This exercise and other training sessions in the future will certainly help to fine-tune the EOC staffs' familiarity with the township plans.

9. New Hanover Township: The EOC staff demonstrated that they would be able to perform the required tasks should an actual emergency occur. The operation could be improved in the following areas: more effective use of township building space, designation of persons to serve as messengers/telephone operations, provisions for two-meter radio antenna hookup inside township building, use of status boards/visual displays, desk space for all EOC staff persons. If these improvements are made, the overall operation will be more effective.

10. Perkiomen Township: The emergency management coordinator and staff were familiar with the township plan. They followed the procedures laid out in the plan throughout the exercise. All aspects of the EOC appeared to be adequate.

11. Pottstown Borough: The emergency management coordinator and staff are to be commended for their efficient and professional manner. During the siren sounding, it was learned that the sirens are barely audible even when standing outside. Though the EOC did have a security person posted, a sign-in/sign-out sheet wasn't maintained. Without reservation, this municipality is well prepared to respond to an actual plant emergency.

12. Royersford Borough: The local coordinator and his staff appeared knowledgeable and well trained. The staff was also able to respond to a structure fire in the middle of the exercise without detracting from their EOC response capability. There was initial confusion on "General Emergency" and "Disaster Emergency" but that was clarified by the county.

13. Schwenksville Borough: The coordinator and his staff acted in a professional manner and demonstrated a good knowledge of the plan. The municipality demonstrated its ability to function adequately in an emergency in an acceptable manner. However, the current location of the EOC, in the municipal water treatment facility laboratory, is viewed as a major problem and consideration should be given to relocation to a more appropriate site.

14. Skippack Township: While communications were adequate, most EOC functions were not adequately demonstrated because of lack of personnel. Most of the operations were carried out by the local coordinator. Elected officials were not present during the exercise. There is serious concern that Skippack Township could not adequately respond in the event of an accident at Limerick.

15. Trappe Borough: The local coordinator was able to demonstrate that the borough could adequately respond according to their plan but some deficiencies were identified. The capability for 24-hour operation appears to be inadequate and the ability of the staff and their emergency workers to use dosimetry was not clearly demonstrated.

16. Upper Frederick Township: The staff performed in an adequate manner during the exercise. The basic skills exist at this level but additional training should be given to "iron-out" the rough spots. The communications capability is adequate and so is the EOC. In general, the municipality operated a solid "no frills" operation.

17. Upper Pottsgrove Township: The municipal EMC and his staff demonstrated a working knowledge of the procedures laid out in the plans throughout the exercise. No significant problems were noted.

18. Upper Providence Township: There were no significant discrepancies observed. The staff worked well together and were well organized throughout the exercise. The addition of an EOC major events status board will improve the operation in future exercise.

19. Upper Salford Township: The EMC and staff performed quite well throughout the exercise. They demonstrated familiarity with the municipal plan and its procedures. No significant problems were noted.

20. West Pottsgrove Township: This township did not participate in the exercise.

C. Decontamination Station

1. Pennsburg : This station was not opened as of 7:00 p.m.
2. Hatboro, Upper Moreland School: This station was not opened as of 4:30 p.m.

D. Risk Hospitals

Pottstown Memorial Medical Center: This hospital is well prepared to undertake required functions in the event of an accident at the nuclear power plant.

E. Risk School District

Pottstown: Though there is a plan on file, it is considered to be grossly inadequate. Neither school employees nor parents are knowledgeable as to the procedures of the plan. The superintendent received only one call, which was the "Alert" notification. No further updating on the status of the problem was provided.

F. Reception/Mass Care Center

Willow Grove: This center was not opened as of 6:00 p.m.

II. CHESTER COUNTY

A. County EOC

The county coordinator and his staff adequately demonstrated their capability to manage an emergency of the magnitude simulated during the exercise. Communications capabilities were well-situated and the EOC was well-organized. The coordinator ran the operations section, which did not allow him to act as efficiently as he might have. The news media was allowed in the EOC for extended periods of time and this created undue distractions.

B. Risk Municipalities

1. Charlestown Township: The local coordinator and township staff are knowledgeable, well-trained and works well as a unit. The one deficiency which should be addressed is route alerting, which must be done by the fire department in the neighboring community. Coordination with the county should be improved and route alerting sectors should be more clearly defined.

2. East Coventry Township: This township displayed a level of knowledge and confidence that will insure public safety during an emergency at the nuclear power plant. The operation went very smoothly and was well supported by township elected officials. There was some confusion on the use of KI and dosimetry, but future training should eliminate this.

3. East Pikeland Township: The entire operation was well-run, the staff was well-trained, the EOC was more than adequate. All-in-all, the municipality is capable of responding to a plant emergency satisfactorily.

4. East Nantmeal Township: The local coordinator and his staff did an excellent job. They followed the plan and implemented all the appropriate procedures with all the necessary resources. The only problem the municipality had was getting information from the county in a timely fashion.

5. East Vincent Township: In general, the EOC staff were knowledgeable in the plan and how to implement it. It is recommended that a person other than the EMC serve as message recorder. Also revealed during this exercise is the need to conduct more training for EOC personnel and emergency workers on the use of dosimetry and dosimetry report forms. Conducting more table-top exercises in the future will help smooth out rough spots in the operation.

6. North Coventry Township: The staff was knowledgeable and experienced and demonstrated their ability to respond to a plant accident adequately.

7. Phoenixville Borough: In spite of minor delays and difficulties, the organization seemed well-trained and performed its mission very well. Some additional training is needed to clarify route alerting operations but overall performance was good. There were indications that information flowing from county to municipality could be improved.

8. Schuylkill Township: While the township may be able to respond in the event of an emergency, it was not adequately demonstrated during the exercise. The EMC handled most of the activities himself, so many of the functions of the staff were not demonstrated. The distribution and use of dosimetry during the exercise was also not demonstrated.

9. South Coventry Township: This township did not participate in the exercise.

10. Spring City Borough: The coordinator and staff responded adequately in all phases of the exercise. There appears to be no serious deficiencies that would prevent the borough from responding adequately in the event of an accident at the plant. The most impressive thing about the operation was the presence of 18 staff people in the EOC working in a well-coordinated manner to accomplish their tasks.

11. Upper Uwchlan Township: In general, the municipality performed in an outstanding manner for a first-time exercise participant. There were some problems, however. The staff had difficulty with paperwork, particularly keeping the message log up to date and there was some confusion concerning some of the messages sent by the county. All-in-all, the staff did well.

12. Uwchlan Township: The coordinator and his staff were able to demonstrate an ability to adequately respond to a plant emergency.

13. Warwick Township: While it was commendable that this township attempted to participate in the exercise, it was evident that they did so without adequate preparation. The EMC chose not to participate at the last minute. This placed the township supervisors in a position of improvising from the outset. The efforts of the EOC staff were severely hampered due to lack of timely information/reports from the county EOC.

14. West Pikeland Township: Staff members were kept apprised of major events. Internal and external communications systems worked adequately. Though actual dosimetry was not issued as part of this exercise, several staff persons/emergency workers indicated that they would feel more comfortable with the instrumentation if they had additional training.

15. West Vincent Township: The EMC and his staff demonstrated that they possess a good grasp of their duties and responsibilities. They followed the municipal plan and carried out their assigned tasks in exemplary fashion. No glaring errors were evident.

C. Decontamination Station

1. Elverson Fire Company: While there were sufficient numbers of people on hand to man this station, there is a definite need to provide these persons with additional training in the procedures to be followed. A new facility should be considered for use as a decontamination station as the current facility does not possess showers to accomplish the decontamination process.

2. Kennett High School: This station was not opened as of 5:30 p.m. (July 25, 1984) and therefore was not observed. Its capabilities are unknown.

D. Hospitals

1. Phoenixville Hospital (risk): This hospital is well prepared to undertake required emergency operations in the event of an accident at the Limerick facility. However, it should be pointed out that dosimetry was not received by the hospital from the county during the course of this exercise. This aspect of the operation remains untested. Additionally, no RACES operator reported to the hospital to provide communications redundancy.

2. Paoli Hospital (host): Though the planning and preparedness measures taken by this hospital appear to be adequate, the actual implementation of the plan was not observed. For this reason, it is difficult to assess this hospital's degree of readiness.

3. Chester County Hospital (hospital providing treatment to the contaminated injured): This hospital is well prepared to treat contaminated injured if that should become necessary during a plant emergency.

E. Reception Center

Exton Square Mall: This facility was not activated as of 7:15 p.m. and therefore was not observed. Its readiness is unknown.

F. Mass Care Center

Kennett High School: This facility was not activated as of 5:30 p.m. and was therefore not observed. Its adequacy is unknown.

IV. BERKS COUNTY

A. County EOC

The emergency management coordinator and his staff discharged their required tasks in an exemplary fashion. All key participants demonstrated extensive knowledge of plans and procedures. This facility and staff appears to be fully capable of responding effectively in the event of an actual plant emergency.

B. Risk Municipalities

1. Amity Township: This township did not participate in the exercise.
2. Boyertown Borough: The local coordinator and his staff did a satisfactory job in implementing the municipal plan and seem capable of handling an actual emergency. The EOC is an excellent facility. It would appear that some adjustments should be made in message flow procedures to improve operational efficiency.
3. Colebrookdale Township: The local staff demonstrated its ability to respond to a plant emergency in an effective manner. The EMC concedes there is room for improvement and plans to make organizational and resource additions to upgrade the capabilities of his organization.
4. Douglass Township: While there is room for improvement, the municipal staff performed in an adequate fashion. Three of the township's six route alerting zones are controlled by Boyertown Borough and is the source of potential problems and should be rectified if possible.
5. Earl Township: The township staff needs additional training but does appear capable of handling an emergency. Difficulties stemmed from the relative inexperience of the staff. The coordinator and his staff had only been in the job three weeks when the exercise was held. However, the EOC is adequate and its basis for an excellent staff has been put together.
6. Union Township: This township did not participate in the exercise.
7. Washington Township: Although the coordinator and his staff performed in an enthusiastic and dedicated manner, it is apparent that additional training will be needed so that the organization can perform satisfactorily in an emergency. Communications were adequate and so was security. However, the coordinator was doing too much himself

instead of spending time coordinating the entire operation. There was also some confusion concerning route alerting and evacuation but additional training should remedy these deficiencies.

C. Decontamination Station

1. Fleetwood High School: The decontamination facility is very adequate. The persons manning the facility were, for the most part, well trained in the use of the decontamination instruments. There is a need for more training to ensure that the reporting procedures will be followed correctly in the future.

2. Oley Valley High School: This facility is adequate to be used as a decontamination station. Some attention needs to be given to the traffic flow patterns within the station. Additional training would improve the decontamination workers understanding of the report forms and reporting requirements. The communications capability demonstrated was excellent.

D. Risk School District

The current school district plan at Boyertown does not adequately address potential traffic problems at the school being evacuated or at the host school after evacuation. Teachers, staffs and parents have not yet been informed of the plan because it has not yet been approved. Though the school was not actually in session during this exercise, the school superintendent did not receive notification for "site emergency" or "general emergency." He was not kept apprised of the developing situation. No RACES radio operator was dispatched to the school district.

E. Reception Center

Oley Valley High School: This facility was not activated and therefore not observed.

F. Mass Care Center

Fleetwood High School: This facility is more than adequate to be used as a mass care center. Though many functions were simulated, it is believed that the mass care center staff would be capable of an effective response in an actual emergency.

V. LEHIGH COUNTY

A. County EOC

The county coordinator and his staff were very knowledgeable of their responsibilities. The only significant problem which occurred during the exercise was that the county did not receive the message that an evacuation was underway.

B. Decontamination Station

The persons who manned this station at the Emmaus High School in Emmaus appeared to be well informed of the required procedures and how to carry them out.

C. Mass Care Center

This facility at the Emmaus High School in Emmaus was observed to be well equipped and staffed with staff persons knowledgeable of their required duties.

D. Reception Center

The reception center at Emmaus High School in Emmaus had a crew that was well prepared to perform their required assignments.

E. Host School Pick-Up Point

This facility at Emmaus High School in Emmaus was not activated during the exercise. It is therefore not known whether the persons assigned are capable of performing their assigned tasks.

VI. BUCKS COUNTY

A. County EOC

This support county did not participate in the exercise.

VII. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

1. In general, most governmental organizations demonstrated their capability to protect the lives of their citizens in the event of an accident at the Limerick Generating Station.
2. The effective operation of EOCs needs to be maintained and improved.
3. Communications between the county and local EOCs need to be improved.
4. The operational readiness of school districts needs to be demonstrated.
5. Proper and effective decontamination procedures need to be demonstrated.
6. Reception and mass care centers need to be activated and evaluated.
7. The effective use of dosimetry needs to be demonstrated.

B. Recommendations

1. Counties should continue to conduct training in the effective operation of EOCs.
2. Communications drills should be conducted on a regular basis between the county and local EOCs.
3. The proper activities to be conducted at each accident classification level need to be thoroughly reviewed and emphasized.
4. Training of effective decontamination procedures should continue to be conducted.
5. Intensive training should be conducted on an on-going basis regarding the effective use of dosimetry.
6. Training at reception and mass care centers should continue to be conducted.
7. Training at schools of appropriate actions to take in the event of an accident at Limerick should continue.

There must be specific and adequate plans for children in day care, nursery and pre-school programs and in day and overnight camps in order to provide reasonable assurance that this particularly sensitive segment of the population is adequately protected.

Specifically,

1. Procedures for contacting parents or guardians must be adequate to enable the children to be picked up in a timely fashion and with reasonable certainty, in the event that these facilities are going to be closed at Site and General Emergency Stages of an alert.
2. The general transportation survey sent out to the public is not sufficient to determine the needs of pre-school, day care/ nursery school and summer camps.
3. Present Municipal and County RERP's fail to adequately identify day care, nursery and pre-school centers, and summer camps.
4. Pre-assignment of transportation resources to these potentially difficult and sensitive members of the population should be arranged and coordinated by the municipality within which the facility is located.
5. Any decision to shelter must be a last resort, because of the extremely volatile nature of this special population, as well as their parents.
6. The participation and commitment of the staff to implement planning is essential to its workability, since very young children need to feel a sense of continuity and trust in their caretakers.

BASIS: 10 CFR 50.47 (2), and (2)(b)(1), (2)(b)(5), (2)(b)(15),
NUREG 0654, Appendix 4, page 4-3, Criteria C, Special Facility
Populations.

- (a) The School District RERP's and the Chester, Berks, and Montgomery County RERP's are 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.

Specifically,

1. School District and County RERP's are deficient because plans for distribution of Units of dosimetry-KI for bus drivers are inadequate. There are no provisions to provide units of dosimetry-KI to buses that do not go to a transportation staging area. Plans must clearly state where bus drivers are to obtain dosimetry.
2. The number of Units of dosimetry-KI available at county transportation staging areas is inadequate.

Chester County RERP, Draft 8 (6/84) states:

200 Units of dosimetry-KI are planned for distribution at transportation staging areas for use by incoming emergency vehicles. The transportation staging area will be used for the positioning and assignment of transportation resources and buses that may be called on in the event of an evacuation to provide transportation for persons requiring medical evacuation, school children, and those without automobile transportation.

(Annex I - Transportation, page I-1,
Annex M, Appendix 3, page M-3-3, item #18)

Montgomery County RERP, Draft 6 (4/84) states:

Total number of Units of dosimetry-KI for Montg. Co. transportation staging areas is 150, for incoming emergency vehicles (Appendix M-3, page M-3-9, item #29)

Berks County RERP, Draft 5 11/83 states:

Number of Units of dosimetry-KI for Berks County transportation staging areas in "to be developed" (Appendix M-4, page M-4-2, item #10)

3. Sufficient Units of dosimetry-KI must be distributed to each school district for use by school staff.
4. School staff must be trained in the use of dosimetry in the event that sheltering is recommended as a protective measure.

BASIS: NUREG 0654, Criteria K.3.a., 10 CFR § 50.47 (b) (11) & (b) (15)

- (b) 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.

Specifically,

School staff and bus driver training should include the following:

1. procedures for dealing with contaminated individuals and equipment.
2. risks of exposure to radiation and proper use of any necessary equipment:
 - a) school staff should receive instruction in the proper use of dosimetry
 - b) school staff must be instructed in the adequacy of school district buildings for sheltering purposes
 - c) school staff have not been instructed in dealing with children under "stress conditions".
 - d) school staff must clearly understand their roles and responsibilities to assist in implementation of school district RERP's, and must be surveyed to identify those willing to make such a commitment in the event of a radiological emergency at Limerick
3. bus drivers need to be familiar with the routes to which they are assigned.

BASIS: 10 CFR § 50.47 (b)(15), (b)(1), (a)(1), NUREG 0654 Criteria O.1, Criteria C.4, and Criteria A.1.b, A.2.a, A.3.

The Chester and Montgomery County RERP's and the School District RERP's are not capable of being implemented because the provisions made to provide bus drivers who are committed to being available during a radiological emergency, or even during preliminary stages of alert are inadequate.

Specifically,

1. There is no assurance that bus companies are able to promptly communicate with and dispatch bus drivers in the event of a radiological emergency, particularly if notification is necessary while a driver is enroute.
2. There are no letters of agreement to indicate that bus companies are able to provide even a minimum number of bus drivers in the event of a radiological emergency.
3. There is no indication of the terms of employment contracts between bus companies and drivers and there is no assurance of pre-identification of bus driver volunteers assigned to carry out an evacuation in the event of a radiological emergency.

LEA has been informed by Mr. Don Morabito, Regional Field Director for the Pennsylvania State Education Association that some of the school district bus drivers have union contracts that would be subject to the same scrutiny as unionized school teachers contracts. Any change in employment conditions would be subject to collective bargaining negotiations with the school district. (See letter from Mr. Morabito included in this filing from PSEA, dated 9/4/84. Applicability to bus driver contracts was discussed between Mr. Morabito and Jim Murtha on 9/5/84.)

4. There is no assurance that bus drivers will be familiar with the routes to which they are assigned during a radiological emergency. There is no indication of the amount of mobilization time necessary before buses will arrive at their assigned risk school district destination.
5. There is no assurance that bus drivers are aware of their role in providing transportation from Host Schools to Mass Care Centers.
6. There is no basis to assume that bus drivers will carry out their responsibilities to assist with an evacuation of the EPZ while there is uncertainty about the whereabouts and well-being of members of their own families. Human response

factors will affect the reliability of bus driver availability. Bus driver training is essential to developing confidence in the workability of both the school district emergency response plan that the bus driver participates in, and other planning measures that will involve members of families of bus drivers.

7. Bus driver assignments to schools for evacuation cannot be simultaneously used for evacuation of the general public in need of transportation assistance. Evaluation of bus driver availability must be done in the context of other bus driver needs. Clarification of the possibilities of multiple trip scenarios needs to be included in training programs and in the actual plans themselves.

8. Transportation for private school students under the jurisdiction of public school districts must be assured in the plans. Responsibilities for these schools must be clearly stated in their respective facility RERP's.

BASIS: 10 CFR 50.47 (a)(1),(2), (b)(1), (b)(6),(b)(11), and (b)(15), NUREG 0654, Criteria A.3, A.4, C.4; School District RERP's, Basic Plan, Logistics of Evacuation II.G.3 (a through f)

The State, County, and Municipal RERP's are 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.

Specifically,

1. The County RERP's fail to provide the actual number of farmers in the EPZ who may require dosimetry, including provisions for multiple re-entries and replenishment of supplies to the County Agent to insure enough units are available to cover farmers over a period of several days.

Note: The County RERP's presently contain provisions for the following:

Chester County: 200 Units dosimetry/KI (Appendix 3, Annex M, (Draft #8) page M-3-1, item #2)

Montgomery County: 180 Units dosimetry/KI for farmers who keep livestock, 45 Units for animal husbandry workers, and 11 Units for reserve. (Appendix M-3, page M-3-1, item #2)

Berks County: number of units of dosimetry/KI marked "to be determined" (Appendix M-4, page M-4-1, item #2)

2. The County RERP's must clearly define "livestock" to include fowl, horses, cows, and sheep. The term "farmer" should include people owning or operating farms, not limited to USDA lists.
3. An informational brochure should be regularly mailed to each farmer with livestock explaining their status (as an emergency worker if necessary to tend animals), their rights, re-entry information and conditions, location and distribution of dosimetry, and information relating to the effects of radiation exposure to humans and animals.
4. Training must be offered regularly and should cover the same points listed above in (3).

BASIS: NUREG 0654, Criteria H.7: 10 CFR § 50.47 (b)(6), (b)(7), (b)(11), &(b)(12); NUREG 0654, Criteria G.1; NUREG 0654, Criteria J.9, J.10.a, NUREG 0654, Criteria J.10.e, NUREG 0654 Criteria J.11

essential organizations and staff must not delay siren activation.

3. 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. Specifically, there is no basis to assume that volunteer firemen would leave their regular employment and families during an evacuation in order to assist in conducting route alerting.
4. The mobilization and adequacy of route alerting teams is a critical factor contributing to the reasonable assurance that public notification and therefore evacuation or other protective measures can be implemented. The mobilization of fire departments is as much an issue of availability of volunteers, especially in the daytime, as it is an issue of communications promptness.

BASIS: 10 CFR §50.47 (b)(5), NUREG 0654 Appendix 3, Criteria for Acceptance , 2.a and 2.c., NUREG 0654 Criteria E.6.

9/4/84 Additional information received from Bob Anthony

1. HMM "Evacuation Time Estimate Study for the Limerick Plume Exposure Zone", final draft May 1981.

In this study "Analysis Area 11" includes Montgomery County townships in the EPZ. This area does not include Valley Forge Park or King of Prussia, thereby excluding the county's major tourist, business, shopping, and transportation concentrations. The NE corner of Upper Merion Township is within 10 miles of Limerick (or at most is only 800 yards beyond). Upper Merion must be included in the EPZ and emergency planning.

John Waters, Upper Merion fire chief and emergency planning supervisor, has participated in state emergency planning meetings on Limerick. He says that no consideration has been given to evacuation plans for Upper Merion but he knows that the residents will evacuate. Possibilities for Upper Merion evacuation will be handicapped by supplemental buses and ambulances coming into the township at King of Prussia Mall, which is a transportation and central resource staging area.

2. Intense present traffic congestion occasioned Upper Merion Twp. to commission a traffic study to evaluate the present and future. The "Interim Report" was issued 7/6/84. The "Final Report" is scheduled for November 1984.

"Upper Merion Township: Township-Wide Traffic Study"
Phase 1 - Township Overview, Interim Report

Prepared by Simpson & Curtin
Division of Booz-Allen & Hamilton, Inc.

page 4: "On some collector roads traffic more than doubled in the last 10 years. Accident rates are up 20% since 1981. All three thoroughways are experiencing greater than capacity volumes on segments through the township."

There are 5 roads that serve the township as arterials or collectors. The average daily traffic on the heaviest travelled is:

North Gulph Road	26,200
South Gulph Road	20,500
West Valley Forge Road	17,800
South Henderson Road	16,200
First Avenue	14,600
Conrad Drive	14,300

3. From PennDot and Turnpike Records, traffic figures shown previously on map submitted by Bob Anthony are as follows;

Annual daily traffic:

Pa. Turnpike	120,000	Route 202	67,400
Rt. 76 Expressway	71,000	Route 363	30,800

4. For the future, added traffic congestion is predicted in "Today's Post" 1/11/84 article "Traffic Onslaught" (attached)
5. "Industrial Impacts of Hypothetical Accidents at the Limerick Nuclear Reactor", Regional Economic Analysis Division, Bureau of Economic Analysis, U.S. Dept. of Commerce, Washington, D.C. 20230, March 1983 stated:

"...the accompanying tables show that the potential employment losses in industries directly effected by the accident could be as high as 1.2 million jobs for one year."

"...decrease in tourist activity 76,000 jobs"

park, carries a heavy volume of truck traffic and connects with PA 23 to the north and US 202 to the south. PA 363 serves as an extension of PA 23 and as a park access road from the east.

Traffic counts taken at the Valley Creek Bridge indicate a volume exceeding 14,000 vehicles daily. The distribution of east-west traffic through the park is as follows: 9,000 vehicles on PA 23, 4,000 on Gulph Road, and 1,200 on PA 252. Peak hour volumes on 23 are at 7:00-8:00 a.m. and 4:00-5:00 p.m. with approximately 1,000 vehicles per hour in both directions.

At present PA 23 and PA 252 are important to both external and through-traffic movement and to park visitation. The commuter or commercial vehicle traveling east or west on PA 23 has no reasonable alternative but to pass through the park. Thus, the visitor frequently finds vehicles crowding behind him, encouraging him to proceed faster, and lessening his opportunity to enjoy the park. The park visitor should observe Valley Forge at a slow, unheeded pace. In contrast, commercial and commuter vehicles view the park as the shortest route to their destinations and are in turn frustrated by the slow-moving park visitor. Generally, the park visitor tends to drive at the speed limit or less, but the pressure of the commuter traffic sometimes forces traffic flow to exceed posted speed limits. All travelers must remain alert to avoid potential accidents.

One may enter Valley Forge National Historical Park at Washington's headquarters at the western end, at the visitor center at the eastern end, or indirectly from the south on PA 252, Yellow Springs Road, or Gulph Road. The park is crisscrossed by a network of roads that ultimately connect to major transportation arteries. The variety of park entrances and the abundance of internally penetrating roads make it relatively easy for external traffic to cut through the park from any direction, using minor roads as shortcuts to the arteries.

The intersection of PA 23 and PA 252 at the western entrance to the park creates considerable conflict between commuter traffic east and west on PA 23 and heavy truck traffic traveling north and south on PA 252. To compound this problem, the intersection lies at the bottom of a steep grade and is also a visitor entrance/intersection in traveling to Washington's headquarters, a heavily visited attraction in the park.

Immediately to the southeast of the park the Schuylkill Expressway and the Pennsylvania Turnpike converge. Traffic from this location is routed up PA 363 past the Upper Merion industrial/commercial development to the eastern entrance of the park. At this major intersection PA 363 joins PA 23, and Outer Line Defense Drive joins Valley Forge Road. Commuters on PA 363 and Valley Forge Road

usually continue north to PA 23. The visitor, however, must make a dangerous left turn into the park across the path of heavy commuter traffic.

Another transportation facility in Valley Forge is the one-lane Betzwood Bridge across the Schuylkill River. This dilapidated but picturesque bridge handles one-way traffic from the Betzwood picnic and boat launch area. The Knox Covered Bridge, which crosses Valley Creek, is also one lane but serves two-way traffic. The bridge, a historic structure, is the property of the Pennsylvania Department of Transportation and is in some danger of destruction from flooding of Valley Creek. Two other bridges span Valley Creek: One carries PA 23 traffic near Washington's headquarters and appears adequate; the other serves very limited utilitarian traffic between Lafayette's quarters and Yellow Springs Road.

Two railroad lines pass through the park. The Reading Railroad line follows the south side of the Schuylkill River, and trains stop at the Valley Forge Park train station. The station has recently been renovated, and the parking lot has been improved. A former station located near Washington's headquarters is no longer a scheduled stop along the Reading route.

In 1976, SEPTA initiated increased train service to the Valley Forge station from central city Philadelphia for a period of three months. The state park also initiated fringe parking at the Valley Forge Service Plaza of the Pennsylvania Turnpike System, with shuttle bus service into the park. Although this has not been repeated, trains stop at the Valley Forge Park train station every day.

Another railroad, the Penn Central, is located immediately north of the park and serves industrial areas.

Because of the large area covered by the park and the nature and placement of historical exhibits, it is essential that vehicles be used in touring the park. The circulation of vehicles, ease of the visitor to guide himself, safety of the route, and interpretation of the park are all critical factors to internal traffic flow. Many exhibits or points of interest are in full view from the road; consequently, distractions are common. Many of the two-way roads are narrow, steep, and curved. There are times when decisions must be made as to which route to take or which attraction to visit. Many routes are deceiving and disorienting, and the visitor is frequently confused by the abundance of alternate paths and may even miss a portion of the park unintentionally. Routes such as 23 and 252 are extremely hazardous to cross because of heavy traffic. Numerous internal roads are frequently used as shortcuts to arrive at either end of the park. Some routes tend to destroy the interpretive and aesthetic value of park sites. Traffic along Gulph and Baptist roads crosses through the Grand Parade grounds;

Table 1. Park Visitor Day Use
(Typical Peak Summer Month)

Activity	Total Contacts 1978	% of Total 1978	% Change From 1978		Projected Annual Visits (1981)
			1979	1980	
Observation Tower Use	24,620	5.2	- 6	- 37	107,649
Model Airplane Flying	3,150	0.6	-58	- 17	16,820
Horseback Riding	730	0.1	-23	+ 63	6,728
Bicycling	5,685	1.2	-33	- 15	33,640
Dog Walking	1,653	0.3	+ 6	+ 62	16,820
Jogging	3,241	0.6	+70	+ 78	40,368
Fishing	763	0.1	+42	+ 92	10,092
Boating	813	0.1	+33	+ 80	10,092
Bus Riding	11,205	2.5	+73	+195	225,391
Kite Flying	140	0	+58	+241	3,364
Picnicking	12,375	2.7	+ 2	+129	195,115
Visitor Center Use	25,318	5.3	+48	+ 41	242,211
Betzwood Area Use	24,060	5.1	+21	+ 38	228,755
Pleasure Driving	243,360	51.5	-18	- 6	1,547,460
Visits to Historic Facilities	115,869	24.5	NA*	NA*	824,191
Total	472,982	100%			3,508,696

*Not applicable because certain historic sites have been removed from the tour route.

Visitation figures included in this section are based on several sources, the most comprehensive of which is the park's monthly public use report. Another source includes a visitor use survey that was conducted during the summer of 1979 to provide data for this plan and to analyze a park bus transit system. Staff and planning team observations were also tapped for general visitation characteristics and trends.

The total volume of park-related use has greatly increased since 1975. The commonwealth of Pennsylvania estimated 1.7 million visits in 1975; there were 3.1 million visits in 1979 and 3.3 million in 1980. Traffic counts for 1979 totaled over 1.1 million.

Of all traffic through the park, 25 percent is estimated to be park visitors; of this percentage, about 25 percent has historical interest. The heaviest visitation occurs from April through December, with peak concentrations on holidays and weekends during special attractions such as fall color and dogwood flowering. In 1978 during the peak period, there were approximately 317,000 visitors per month compared with 93,000 visitors per month during the off-season (January-March). The 317,000 visitors per month is 11 percent of the theoretical capacity of the park's

vehicle parking spaces. Since the state rehabilitation program, the bicentennial, and the park's recent national status, historically oriented visitation has increased dramatically. In 1978 over 250,000 visits were tallied at both Washington's headquarters and the visitor center.

Whereas historically oriented visitation is spread evenly throughout the week, nearly 40 percent of all recreational use occurs on weekends between 10:30 a.m. and 3:30 p.m. on Saturdays and 1:00 and 5:00 p.m. on Sundays. Almost 70 percent of all Sunday visits take place during these peak hours. On a typical peak Sunday, 90 percent of all visitors use private automobiles; the remainder use other forms of transportation, such as tour bus, horse, bicycle, or foot.

In 1979 the 25 percent of Sunday visitors with historical interest (2,322 visitors) required 580 vehicle parking spaces at Washington's headquarters, the visitor center, Varnum's quarters, and Washington Memorial Chapel. The remaining 75 percent of Sunday visitors with recreational interest (6,967 visitors) required 1,742 autos to be parked at outlying areas as well as major historic sites.

At present the 1,333 parking spaces serving historic sites will hold 16,000 cars with a 30-minute turnover during peak hours. The 1,241 spaces serving recreation areas will hold 7,400 cars with a turnover every 40 minutes. Based on the visitor use survey, the typical length of stay on the weekend of the historically oriented visitor is 27 minutes each at three sites; the visitor interested in weekend recreation stays about 37 minutes at one site. Total daily park capacity at the current turnover rate is theoretically about 93,600 historical and recreational use visitors.

Assumptions can be made about the various use patterns of visitors based on their proximity to the park and how frequently they visit. National visitors (those living more than 50 miles away and requiring lodging somewhere in the vicinity) will visit infrequently, maybe only once or twice during their lifetime. The full range of visitor information and orientation, plus all interpretive facilities, picnic areas, and trails, could be used in association with seeing the historic resources. The visitor use survey indicated that 27 percent of the respondents were first-timers, and 33 percent were of national or regional origin. (The heaviest percentage of national visitation occurs during summer months.)

Regional visitors live from 25 to 50 miles away, which means they might seek accommodations in the area. They would likely visit the park several times a year though not as often as local users. Special events would particularly attract regional visitors. They might bring friends or relatives from out of the region on subsequent visits. After their initial orientation, regional visitors would likely concentrate on interpretive programs and historic resources of interest to them. Their use would be spread more evenly throughout the year than national visitors, and they would probably engage in some recreational pursuits during their visit.

Local users live within a 25-mile radius of the park, the majority in the suburban Philadelphia area. These visitors would use the park for historical purposes about like their regional counterparts; however, they would visit the park more frequently for recreational purposes. To

continually reach this audience, interpretive programs would need to change with time or be more specialized, e.g., seminars, lectures, themes.

General Development

Existing Visitor Use Facilities. Table 2 inventories existing visitor use facilities within the park. Table 4, which is included at the end of the "The Plan, General Development" section, shows a comparison of existing and proposed visitor use facilities (parking spaces, picnic tables, and restrooms).

Access/Circulation. Various geographic barriers have forced the regional transportation routes through Valley Forge. The Pennsylvania Turnpike (I-76) and County Line Expressway (PA 363) are man-made barriers, all of which have limited access to the park. Over the years increased traffic from housing developments has reinforced their utilitarian importance.

The primary mode of access to Valley Forge is by private vehicle. Local residents sometimes ride horseback, walk, or bicycle into the park. Direct access by public transportation is limited.

Three state routes--23, 252, and 363--lie within the boundaries of the park. PA 23, south of the Schuylkill River, carries commercial and commuter traffic. PA 252, on the western edge of the park, carries a heavy volume of truck traffic between PA 23 and US 202. PA 363 serves as an extension of PA 23 and as access to the park from the east.

Traffic at the Valley Creek Bridge exceeds 14,000 vehicles a day, with 9,000 vehicles on PA 23, 4,000 on Gulph Road, and 1,200 on PA 252. Peak hour volumes on 23 are at 7:00-8:00 a.m. and 4:00-5:00 p.m. with approximately 1,000 vehicles per hour in both directions.

At present PA 23 and PA 252 are important to both external through-traffic and to park visitation. Generally, park visitors tend to drive at or below the speed limit, whereas commercial and commuter traffic often forces traffic flow to exceed posted speed limits. The intersection of these roads, which is at the bottom of a steep grade, is the main entrance to the park from the west. This creates considerable conflict particularly when visitors are focusing on park features rather than traffic.

Much of the commercial and commuter traffic on PA 23 is between Phoenixville and the western fringes of Philadelphia, including King of Prussia. To alleviate traffic congestion on secondary roads in this area, a four-lane limited access expressway known as the Pottstown bypass is now under contract. A spur from this route to Phoenixville will be constructed later. The Park Service also supports construction of access ramps at Pawling Road. These facilities combined should significantly reduce nonpark-related through-traffic on PA 23.

There is no assurance that plans for evacuation of the Ten mile radius will not be impeded by traffic congestion in the vicinity of Marsh Creek State Park, Exton area (involving Route 100) and Valley Forge Park, King of Prussia area.

These areas should either be included in the Emergency Planning Zone or adequate plans for traffic control and direction should be made to avoid adverse effects on EPZ evacuation.

Specifically,

Congestion around Marsh Creek Park, and Route 100 backing up North from Exton Mall (a reception center, and alternative EOC for several municipalities) including the important traffic juncture at 113 and Route 100 near the transportation staging area at Exxon Pickering Creek Industrial Park, just South of Turnpike entrance and Marsh Creek Park itself, would severely limit Evacuation Plan workability, especially in light of spontaneous evacuation onto Route 100 from the relatively large developments along that main evacuation route. Note also that the Turnpike entrance on Route 100 is not planned as being used for evacuation.

Also, there is a lack of Emergency Planning for the Valley Forge National Park and the King of Prussia Area. This contention concerns the traffic and use patterns for Valley Forge Park and related commuter and shopping and business traffic to and from King of Prussia, including King of Prussia Plaza, one of the nation's largest and oldest shopping mall complexes. All of this is dependent on and interrelated with the highway nexus which focuses long distance travel, medium distance and regional and local traffic on this spot. This area is in the direction of the prevailing winds from Limerick, between Limerick and Philadelphia, which itself limits Southeast egress from this area.

MARSH CREEK

Provision for the orderly flow of traffic from Marsh Creek Park should, in addition to traffic control, include some information to users of the park as to the alternative routes to be taken

so as to avoid the main evacuation routes (such as to avoid Route 100 at Eagle, also possibly to stay off Route 113 if diverted as intended onto Moore Rd from Park Rd at Traffic Control Point on Park Rd). Simple traffic control at Moore Rd and Park would not insure that up to 2500 vehicles in the Park, many from outside the area, could find their way on these small back roads to a suitable main route. Clear policy instructions are also needed at this particular TCP to allow residents at Park who live in EPZ back onto Route 100 North since it is a very long way back around the reservoir to use any other route.

B. The intersection of Route 100 and 113 South of Marsh Creek and the Turnpike is a critical area upon which the evacuation of the EPZ is dependent. Traffic flow along Route 100 South from this point to Exton Mall poses additional complications involving spontaneous evacuation of residential and corporate areas around Exton. Predistribution of basic suggested route information to residents and employees could help solve this. Also the Exton area includes the transportation staging area at Pickering creek, reception area at Exton Mall and alternate EOC next door.

C. Valley Forge

The HMM Traffic study does not take into account Valley Forge Park traffic (see LEA filing Aug 31) Assumptions of HMM study which would affect analysis of traffic flow in the affected areas tend to mischaracterize the actual impact of traffic in area (particularly Dynamic Route Selection)

Notification and traffic routing information to Industries in King of Prussia Area is needed to prevent large releases of employee traffic into evacuation routes at critical times.

The effect of regular traffic concentrations, in addition to the flow from the EPZ and spontaneous near EPZ evacuation is not considered as it affects traffic leaving the planning zone.

Basis: NUREG 0654 Appendix 3, page 16; NUREG 0654 I.D. page 8; 10 CFR 50.47 (c)(2) LEA incorporates by reference FOE 1 Anthony 1/31/84 incl map

The Draft County and Municipal RERP's are deficient in that they do not comply with 10 CFR §50.47 (b)(5) because there is no prompt alerting system operative and in place, no assurance of prompt notification of emergency workers who must be in place before an evacuation alert can be implemented, and there is no assurance of adequate capability to conduct route alerting, within the time required by NUREG 0654 Appendix 3, Criteria for acceptance 2.a and 2.c.

Specifically,

1. Philadelphia Electric Company intends that individuals situated within a 10 mile radius of the plant will be alerted to a radiological emergency through a siren notification system. This system fails to meet the requirements of 10 CFR § 50.47 (b)(5) and (b)(6), and 10 CFR Part 50, Appendix E, Item D.2, and NUREG 0654 Items II.E and II.F. for the following reasons:
 - (a) PECO has failed to demonstrate that siren coverage adequately covers the EPZ and will not be adversely constricted by weather conditions which will affect the audibility of the sirens.
 - (b) PECO has not demonstrated that in the event of a loss of power to all or part of the system, that it could provide back-up power in time to offer timely notification to the public.
 - (c) PECO's prompt notification system does not provide for those individuals who may be in areas not covered by the sirens.
2. The phone notification system of emergency response organizations by the County EOC, prior to public notification, is a complex process involving the use of an automatic dialer (RECALL system) subject to verification and manual notification as sufficient county EOC Staff arrive to man the phones. (Chester County RERP, Draft #8, Appendix C-2, page C-1-4).

LEA contends that that notification times for emergency workers and organizations must be rapid and certain to enable the public notification system to be activated in the time required, as specified by NUREG 0654, Appendix 3, page 3-3. Whatever combination of automatic dialers and sequential phone calls for notification and verification is to be used, the notification of

ADDITIONAL BASIS FOR CONCERNS ABOUT THE PROBABILITY OF
LOSS OF POWER RENDERING SIREN NOTIFICATION SYSTEM INOPERABLE.

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NRC Requirements for Prompt Public Notification System

NRC's regulations at 10 CFR Part 50, Appendix E, Section IV, Part D, Paragraph 3, contain the following requirement:

By February 1, 1982, each nuclear power reactor licensee shall demonstrate that administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway EPZ . . . The design objective of the prompt public notification system shall be to have the capability to essentially complete the initial notification of the public within the plume exposure pathway EPZ within about 15 minutes.

Analysis of LGS-PRA and LGS-SARA for Loss of Power
Power Contribution to Core Melt Frequency

LGS-PRA Analysis of Non-Seismic Loss of Offsite Power

LGS-PRA calculated a mean core melt frequency of 1.5×10^{-5} per reactor year for "internal events" [LGS-PRA, page 3-112]. The term "internal events" is something of a misnomer in this case because the LGS-PRA analysis of "internal events" includes plant transients initiated by a loss of offsite power. Such initiating events are designated T_E sequences.

Of the total core melt frequency of 1.5×10^{-5} per reactor year, LGS-PRA estimates that 44% arises from two accident sequences initiated by a loss of offsite power. These accident sequences are designated T_{EUV} (loss of offsite power followed by failure of high-pressure and low-pressure injection; estimated core-melt frequency contribution of 5.9×10^{-6} per reactor year) and T_{EUX} (loss of offsite power followed by failure of high-pressure injection and failure to timely initiate the Automatic Depressurization System; estimated core melt frequency contribution of 6.9×10^{-7} per reactor year) [LGS-PRA, pages 3-35 and 3-108].

LGS-SARA Analysis of Seismic Loss of Offsite Power

LGS-SARA apparently treated the LGS-PRA mean core melt frequency estimates as "point estimates" (see, for example, Table 12-1, page 12-22, LGS-SARA). LGS-SARA extended the LGS-PRA risk estimates by including an

analysis of external events, including seismic events.

According to the LGS-SARA analysis, offsite power is lost at a median ground acceleration of $0.20g$ [LGS-SARA, Table 3-1, page 3-16]. This is consistent with the Zion, Indian Point, and Seabrook PRAs performed by Pickard, Lowe & Garrick (these studies, as well as LGS-SARA, utilized the seismic risk analysis services of Structural Mechanics Associates).

LGS-SARA estimated an overall frequency of core melt due to all causes of 4.4×10^{-5} per reactor year [LGS-SARA, page 12-4]. Of this total, 6.6×10^{-6} comes from the LGS-PRA analysis of "internal events" (see above). This represents a contribution of 15% of total core melt frequency from non-seismic loss of offsite power.

LGS-SARA identified a number of seismic accident sequences. Sequence $T_S E_S U_X$ (seismic loss of offsite power followed by failure of high-pressure injection and failure to timely initiate the Automatic Depressurization System) is estimated to contribute 3.2×10^{-6} to total core melt frequency [LGS-SARA, Table 12-3, pages 12-23 through 12-25]. Sequence $T_S E_S C_M C_2$ (seismic loss of offsite power followed by failure of the control rods to insert and failure of the boron injection system) is estimated to contribute 5.4×10^{-7} to total core melt frequency [LGS-SARA, Table 12-3, pages 12-23 through 12-25].

In addition, LGS-SARA identifies sequence $T_S R_{PV}$ (seismic failure of the reactor vessel upper lateral support) as contributing 9.6×10^{-7} per reactor year to total core melt frequency [LGS-SARA, Table 12-3, pages 12-23 through 12-25]. Although not explicitly listing T_S (seismic loss of offsite power) in this sequence, it is clear from Table 3-1 that offsite power would be lost since $T_S R_{PV}$ occurs at a median ground acceleration of $1.25g$, while offsite power is lost at $0.20g$ [LGS-SARA, Table 3-1, page 3-16]. Thus, sequence $T_S R_{PV}$ also contributes to the frequency of accidents in which a seismic loss of offsite power occurs.

Summing the seismic loss of offsite power sequences, one obtains a total contribution to core melt frequency of 4.7×10^{-6} per reactor year. This represents a contribution of 10% of the total core melt frequency from seismic loss of offsite power. Examining listing of dominant core melt sequences in Table 12-3 [LGS-SARA, pages 12-23 through 12-25], 3 of the top 6, 4 of the top 9, and 6 of the 17 dominant sequences are caused by or accompanied by loss of offsite power.

Summary and Perspective

Based on the analyses presented in LGS-PRA and LGS-SARA, accidents caused by or accompanied by a loss of offsite power contribute a total of 1.1×10^{-5} per reactor year to the total core melt frequency of 4.4×10^{-5} per reactor year, a contribution of 25% from loss of offsite power sequences. In addition, three of the top six dominant accident sequences (and four of the top nine and six of the top seventeen) are loss of offsite power sequences.

Moreover, Table 12-9 demonstrates that seismic initiating events contribute about 84% of mean early fatality risk; it can be deduced that T_E loss of offsite power sequences contribute another 3%. Thus, accident sequences involving loss of offsite power, while responsible for 25% of core melt frequency, are responsible for about 87% of mean early fatality risk. Moreover, if emergency response parameters (such as delay time and effective evacuation speed) more appropriate to seismic and loss of power conditions were modeled in the CRAC2 consequence calculations, these contribution would increase.

These conclusions rest upon the validity of the LGS-PRA and LGS-SARA analyses. To the extent that these analyses are valid, the interpretation given them in this memo argues for a re-examination of the prompt public alerting system proposed by PECO for Limerick. The system proposed is estimated to fail in 25% of all core melt accidents (and for those accidents which contribute 87% of mean early fatality risk).

A possible replacement would be a tone-activated radio system in which emergency messages are broadcast over the NOAA weather radio system. Radio Shack supplies a "Weather-Radio" for roughly \$30 which operates on normal AC power (backed up by a DC battery) and which is activated automatically by a tone broadcast by NOAA. When the tone is broadcast by NOAA, a loud, shrill "beep" is heard to alert the public to listen for an emergency message. As a side benefit, the public would also receive notifications broadcast by NOAA for hurricanes, tornadoes, winter storms, and floods.

There must be specific and adequate plans to protect Camp Hill Village Special School, Inc. in East Nantmeal Twp., Chester County and for Camp Hill Village School in West Vincent Twp., Chester County.

Specifically,

1. No written plan has been developed for either facility
2. No determination of staff participation and role assignments has been made
3. No equipment needs, including telecommunications and transportation needs has been assigned
4. No evaluation of adequacy of school buildings for sheltering purposes has been determined
5. There are indications that school staff and school officials have serious reservations about the adequacy of the planning that they are aware of. Should these staff and officials refuse to participate in the planning as proposed,
either, alternate plans adopted by the schools should be coordinated and supported by their respective municipalities,
or if no agreement to participate is reached, the appropriate municipality should be prepared to implement all aspects of the plan, passing any unmet needs onto the county or state.
6. In the event that responsibility for emergency response planning is passed on to the municipality, it must be 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.

BASIS: 10 CFR 50.47 (2), and (2)(b)(1), (2)(b)(5), and (2)(b)(15)
NUREG 0654 Appendix 4, Criteria C (Special Facility Populations)
page 4-3.

- (a) There is no 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.

Specifically,

1. The Montgomery County Draft RERP, #6 states the average Mobilization and deployment time for the National Guard Units assigned to Montgomery County is approximately 6-8 hours after order by the Governor to state active duty. (Annex H, Section IV.A)
2. The Chester County RERP Draft #8 states that the average time for the National Guard to mobilize and deploy to the area of operations is approximately 6-8 hours.
3. The Berks County Draft RERP #5 states that the average time for the National Guard to mobilize and deploy to the area of operations is approximately 8 to 12 hours.

BASIS: NUREG 0654, Appendix 4: NUREG 0654 Criteria C.4
10 CFR § 50.47 (2), (b)(1)&(b)(6)

- (b) There is no 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.

Specifically, PennDOT's capability to clear state evacuation routes is dependent on required mobilization time, prompt notification, and employee contractual limitations. Training and verification for these workers is essential, and unconfirmed. There is no listing or reference to training of PennDot personnel in Applicant's Training Session Analysis. (which has been provided to LEA)

The resource manual (Annex K Appendix K-3) of Berks and Montgomery County Plans includes no specific agreements between counties and service/towing stations with regards to a Limerick Emergency. Also, Peco's answer (8/2/84 P. 53) "Gas station employees are not being requested to remain on duty within the EPZ."

Snow removal on municipal roads is only assumed to be per usual arrangements with municipalities with no confirmation of availability in a Limerick Emergency. PEMA and municipalities haven't worked out unmet needs yet. Conversation with PEMA 8/30/84.

BASIS: NUREG 0654, Criteria C.4, and Appendix 4,
10 CFR § 50.47 (2), (b)(1) and (b)(6)

CERTIFICATE OF SERVICE

I hereby certify that Limerick Ecology Action's Respecification of Admitted Off-Site Emergency Planning Contentions has been served on the parties to this proceeding listed below on this 6th. day of September, 1984. Those (*) received delivery by hand service. All others were served by deposit in U. S. mail, first class postage prepaid. 84 SEP 10 11:30

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