

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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USNRC

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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In the Matter of :
PHILADELPHIA ELECTRIC COMPANY :
(Limerick Generating Station, :
Units 1 and 2) :

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH
Docket Nos. 50-352 O L
50-353 O L

LIMERICK ECOLOGY ACTION PROPOSED FINDINGS OF FACT
AND CONCLUSIONS OF LAW IN THE FORM OF A PARTIAL
INITIAL DECISION RELATING TO OFFSITE EMERGENCY
PLANNING CONTENTIONS

LIMERICK ECOLOGY ACTION, Intervenor in the above captioned proceeding, in accordance with 10 C.F.R. §2.754 and the Atomic Safety and Licensing Board's "Schedule for Filing of Proposed Findings of Fact and Conclusions of Law" (January 28, 1985)* hereby submits its Proposed Findings of Fact and Conclusions of Law in the Form of a Partial Initial Decision Relating to Offsite Emergency Planning Contentions.

Respectfully submitted,

Phyllis Zitzer

PHYLLIS ZITZER
President

Maureen Mulligan

MAUREEN MULLIGAN
Vice President

David Stone

DAVE STONE

ON BEHALF OF
LIMERICK ECOLOGY ACTION

March 7, 1985

* LEA was notified by telephone that March 7, 1985 was the new filing deadline.

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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
Jerry Harbour

In the Matter of)
)
PHILADELPHIA ELECTRIC COMPANY) Docket Nos. 50-352-OL
) 50-353-OL
(Limerick Generating Station,)
Units 1 and 2)
_____ , 1985

APPEARANCES

Troy B. Conner, Jr., Esq., Robert M. Rader, Esq., and Nils N. Nichols, Esq., of Conner & Wetterhahn, P.C., Washington, D.C., for Philadelphia Electric Company

Donald Hassell, Esq., Henry J. McGurren, Esq., and Nathene A. Wright, Esq., Office of the Executive Legal Director, U.S. Nuclear Regulatory Commission, Washington, D.C., for the NRC Staff.

Zori G. Ferkin, Esq., Governor's Energy Counsel, and Mark L. Goodwin, Pennsylvania Emergency Management Agency, Harrisburg, Pennsylvania, for the Commonwealth of Pennsylvania.

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Suzanne B. Ercole, Esq., of Prince & Prince, P.C., Pottstown, Pennsylvania, and Phyllis Zitzer, Maureen Mulligan, and David Stone, for Limerick Ecology Action.

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FEMA has received and reviewed the radiological emergency response plans listed in the attachment to LEA Exhb E-1. FEMA is aware that Energy Consultants, consultant to the Applicant, has prepared updated plans which have been transmitted to FEMA for the purpose of informal review as requested by the Nuclear Regulatory Commission. (Kinard TR 20,153-20,154).

FEMA has been requested to prepare a Supplemental Interim Finding for Limerick by March 1, 1985. (Kinard TR 20,155, also 12/26/84 memo attached to LEA Exhb E-71).

FEMA will prepare the Supplemental Interim Finding by May 1, 1985. (Kinard TR 20,157, LEA Exhb E-71) Mr. Asher testified that the response from Mr. Krimm to Mr. Jordan (get Ex # from above) expressed the limitations of the ability of FEMA Region III to provide such a review by March 1 because of lack of personnel, and therefore the new date had been established. Mr. Kinard is the FEMA project officer for Limerick. (Asher TR 20,269).

As of Feb. 24, 1985, the FEMA witnesses stated that there had not been any review by FEMA of any of the RERP's included in the list attached to LEA Exhb E-71.

Mr. Kinard was present in the hearing room approximately 50% of the days that hearings have been going on and has read the pre-filed testimony of the parties. (Kinard TR 20,251) Mr. Asher's attendance at the hearings was very limited, somewhere in the nature of 10% of the days. (Asher TR 20,251)

FEMA's extensive written testimony is based upon draft plans that were submitted to FEMA on December 6, 1983. (Kinard TR 20,328) FEMA's review has been accurate up to the point to which the testimony that they have provided. (Asher TR 20,330)

FINDINGS OF FACT

CONCLUSIONS OF LAW

Pursuant to a Memorandum of Understanding between the NRC and FEMA relating to radiological emergency planning and preparedness, FEMA was asked to provide the NRC with findings and determinations whether the off-site plans for Limerick are adequate and capable of implementation. Specifically, FEMA was mandated to make findings and determinations as to whether state and local plans are adequate and capable of implementation. In accordance with this Memorandum the NRC was mandated to review FEMA findings and make a determination on the adequacy and capability of implementation of state and local plans. Further, the NRC was mandated to recognize FEMA as the interface with state and local governments for the interpretation of radiological emergency preparedness criteria.

It is well-settled law that a FEMA finding or interim finding gives rise to a rebuttable presumption. Such a presumption has the effect of deciding a question only in the absence of persuasive evidence to the contrary. These findings by FEMA in and of themselves contain particulars about planning deficiencies for emergency planning zone around Limerick. These particulars cited by FEMA support FEMA's conclusion that until corrective actions have been taken the off-site capabilities for implementation of the emergency plan for Limerick is not adequate.

Further, Applicant has failed to present persuasive evidence to the contrary to negate this presumption.

Although the Appeal Board in the San Onofre case stated that the conclusion reached by the Commission may be a predictive one rather than a reflection of the actual state of emergency preparedness at the time of the Board's decision, it must be remembered that substantively the evidence in and of itself must be sufficient before the Board can conclude that the state of emergency preparedness provides reasonable assurance that adequate protective measures can and will be taken.

It is the Intervenors' position that the evidence that has been presented by the Applicant is insufficient as a matter of law and fact.

LEA-23

The draft county plans are deficient because they do not contain reliable evacuation time estimates.

LEA-24/FOE-1

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.

In the Memorandum and Order Ruling on Reworded and Respecified Off-site Emergency Planning Contentions dated Sept. 24, 1984, the ASLB ruled: We accept all of the items in the list accompanying the contention. The Applicant objects to, among other things, LEA's questioning certain of the Evacuation Time Estimates Study's assumptions related to the areas the contention lists. While LEA is not exactly crystal clear in alleging deficiencies in the Study, we do not rule out this item, for if we are to consider what impact traffic in the areas the contention lists would have on evacuation, we necessarily will consider traffic patterns, capacities, and rates, both in the plume EPZ and in the named areas. Thus, we cannot but inquire into whether the Study has properly analyzed these named areas.

Philadelphia Electric hired HMM Associates, Inc. ("HMM Associates") of Concord, Massachusetts to prepare an evacuation time computer simulation of the Limerick EPZ. HMM Associates

thereafter prepared "Evacuation Time Estimates for the Limerick Generating Station Plume Exposure Emergency Planning Zone - Final Draft" (May 1984) (ETE study). (Klimm, ff. Tr. 13794 at p.1, Tr. 13795 Appl. Exh. E-67).

The Board accepts Mr. Klimm as the primary author of the HMM Evacuation Time Estimate Study for Limerick. (Apl. Exh. E-67) He has been involved in most of the 20 or more site evacuation time estimate studies prepared by HMM Associates (Klimm, Tr. 13816). He has managed a good portion of them, but because HMM in the past 2-3 years has been conducting 2 to 3 of the studies at the same time, Mr. Klimm could not act in a manager standpoint in all of those. Mr. Klimm travels a lot, from site to site.

3 Mr. Klimm was one of the principal developers of the NETVAC computer simulation traffic model used in the ETE study and is co-author of its training manual. This model is a proprietary model developed by HMM Associates "due to our involvement with areas surrounding fixed nuclear facilities." Besides its use in HMM studies, HMM licenses its use to others, and trains them. HMM does other traffic engineering studies associated with identifying the impacts of large developments, but the majority of the work in those studies lend better to manual techniques. "We do have several small computer programs we use on IBM compatible or Radio Shack computers to do the number crunching, but they are not simulation models". (Klimm Tr. 13823, 13024)

4 NETVAC is a traffic simulation model which HMM uses to analyze a wide range of population densities and traffic flows expected during a large-scale evacuation at various fixed nuclear sites.

5 HMM's involvement was "entirely with PEMA and the counties" (Klimm 13911). The individuals involved were, Mr. Hippert (PEMA), Mr. Campbell (Chester), Mr. Bigelow, (Montgomery), and Mr. Reber (Berks). (Klimm Tr. 13909). (Quote from X-ROX pg. 13883) As a result of those meetings, the ETE study does not include specific input from local borough, township, school district, or park officials and planners, with respect to the Valley Forge National Park/ King of Prussia area as well as the Marsh Creek State Park/Routes 100 and 113 area. No evidence or testimony exists in this record of any input passed from the municipal level, park service, or school district via Mr. Hippert, Mr. Campbell, Mr. Reber or Mr. Bigelow to HMM. HMM prepared a draft of the ETE study and offered its contacts the opportunity for any comment or discussion and then developed what we (HMM) called the final draft. (Klimm, Tr. 13910). However, Mr. Klimm recalls no differences between the draft submitted for discussion and the so-called final draft (Klimm, 13911).

6 Consequently, for all NETVAC simulations on evacuation routing and traffic flow, since those areas were not discussed with local officials, were not site-specific (Klimm, Tr. 13884).

7 HMM Associates did not participate in the designation of evacuation routes for the EPZ. Those routes had been established by the Pennsylvania Dept. of Transportation (Penn DOT) and were reviewed by some Commonwealth and county planners. Upon commencing its study, HMM Associates reviewed the designated routes and found them reasonable in the light of them having been established by PennDOT, and reviewed by some county and state officials.

8 Given general characteristics for a two-lane road or multi-

lane divided expressway, certain assumptions may be made about roadway capacity. However, those assumptions do not yield roadway capacities which are as specific as those reflecting actual field records of lane widths, approach widths, traffic control and other data (Klimm, Tr. 13830).

9 Just the input roadway network data which appear in the various appendices to the ETE study were field recorded, measured, or a category assigned by the team (AT, LT, P).

10 It is an appropriate methodology in preparing an evacuation time estimate study -- such as Applicant's Exhibit E-67 -- to assume that at the time when people actually begin to evacuate that there is no pre-existing traffic on the network at that time. (Urbanik, TR 19,224) A distinction must be made between the time when an evacuation is ordered and the time when people begin leaving. (TR 19,224 at 12)

11 It is an underlying assumption of the HMM ETE Study (Applicant's Exhibit E-67) that access to Route 363-County Line Expressway, Routes 202, 76 and 276 would be restricted, and that that evacuation corridor would be available only for vehicles evacuating from the Emergency Planning Zone. (Klimm, TR 13,939, lines 5-11) The underlying assumption is that traffic control would be in place at the time or during the course of the evacuation. It is Mr. Klimm's testimony that no vehicles really begin to evacuate until a half hour after notification, and that in his opinion, a half an hour is "certainly enough time to mobilize and station traffic control as required." (TR 13,941, lines 10-16)

12 The four Tables in App. 10 of the HMM ETE (E-67) use, as previously discussed (Proposed finding) column headings over columns of numbers which are either the numerical inputs into the computer simulation, or the results of calculations performed by the simulation using algorithms developed by HMM (see). Mr. Klimm testified at TR 13,857, lines 15-19 that "The final column, 'Flow', is an

input that we have not used to date. It is variable that was put into the model to be able to assess a condition where there may be a significant amount of flow on the network prior to the evacuation of vehicles." However, that entry is zero for all the links in the evacuation network (TR 13,857, line 22) (TR 13,870 lines 9-15) indicating an assumption that no pre-existing traffic on any of the links at the time evacuating vehicles begin to enter the evacuation network.

13 Mr. Klimm says this can be assumed because vehicles are taken into account by simulating them from their point of origin, and that many of the vehicles on the road in pre-existing traffic flows would also be vehicles residing in the area, and that HMM specifically intended not to double count those vehicles. TR 13,866 line 19; TR 13,867 line 14) and that is the reason why HMM did not assume the base flow on the roadway sections (TR 13,867 line 4).

14 When asked if HMM had site-specific knowledge of the traffic pre-existing on the Valley Forge-King of Prussia evacuation corridors as to the percentage from within the EPZ, and therefore subject to double counting, or from other areas and just passing through, Mr. Klimm answered:

The answer in a general sense, I guess, is we do have a feeling for that. There have been studies done in the area. That exact number if you look at it on a daily basis, we could possibly quantify that but that would vary depending on the time of day. I guess in a general sense based on a study that we have reviewed and general knowledge, many of the vehicles that travel through

that corridor in fact originate from the EPZ or are destined to the EPZ since that is the direction that corridor extends. (TR 13,867 line 22 - TR 13,868 line 5)

The study Mr. Klimm is referring to here is one that was done for Upper Merion Township (TR 13,868 line 8).

15 However, at TR 13,911 line 21 Mr. Klimm testified that the Upper Merion study he referred to "was an exhibit that either has been or will be offered as part of this testimony," and that "I reviewed it in that light."

And at TR 13,915 line 13 Mr. Klimm admits that he reviewed the upper Merion study after completing the ETE (Appl. Exhb. E-67) and just a few weeks before this hearing.

16 HMM Associates did not participate in the designation of evacuation routes for the EPZ. Those routes had been established by the Pennsylvania Department of Transportation ("PennDOT") and were reviewed by some Commonwealth and county planners. Upon commencing its study, HMM associates reviewed the designated routes and found them reasonable in the light of them having been established by PennDOT, and reviewed by some county and state officials. (Klimm, TR 13,893, lines 16-21.)

17 Given general characteristics for a two-lane road or multi-lane divided expressway, certain assumptions may be made about roadway capacity. However, those assumptions do not yield roadway capacities which are as specific as those reflecting actual field records of lane widths, approach widths, traffic control and other data. (Klimm, TR 13,830).

18 Just the input roadway network data which appear in the various appendices to the ETE study were field recorded, measured, or a category assigned by the team (AT, LT, P). All capacities were calculated. AT is area type relates to 4 possible area types and is assigned by the field team. LT is one of several possible lane types or roadway types: rural or urban, multi-lane, divided, or undivided, and is assigned by the field team, P or parking on the intersection

approach is F in all cases (no parking) in Appendix 10 for all links. Each roadway link and intersection was measured as follows, no values were assumed and no values were adopted from earlier studies. The only measured data is: LW (lane width of typical midblock section between 2 nodes), AW (approach width of downstream intersection), SW (distance to obstruction), or lateral clearance or mid-block LEN (length of roadway section in feet). (Klimm TR 13,872 and TR 13,846-13,853).

- 19 In determining roadway capacity, the ETE study did not take into account the slope or hilliness of each intersection and only adjusted the geometric characteristics to account for the effect of right- and left-turning vehicles. (Klimm TR 13,900). The formula on page 5-9 of the ETE (Appl. Exhb. E-67) is a description of how the ultimate intersection capacity is calculated. The degree of acuity of an angle of an intersection turn is not specifically taken into account, and only implicitly taken into account in the fact the right and left turning vehicles slow progression for moving vehicles. "We did not come up with separate factors to incorporate that". (Klimm, TR 13,902 at 4). There is no numerical factor with respect to that measurement of angle included in any of the calculations. (Klimm TR 13,901 lines 16-). The "peak hour and load factors" are not used in this ETE analysis. (See pg. 5-9 E-67 second para.).
- 20 Intersection approach capacity calculations were performed only on the basis of these variables: approach width, type of traffic control (stop sign or signal), amount of green time at the intersection and the effect of right- and left-turning vehicles (Klimm, TR 13,900-01). The acuity of any particular intersection angle was not

taken into account by calculating, (not recording) the effect that right- and left-turning vehicles had on traffic flow, i.e., the higher the percent of turning vehicles, the lower the capacity for through movement (Klimm, TR 13,901-13,902). Typically, the field data teams "like to when we record mid-block data" record measurements at the most restricting or confining point along that road, which 'very commonly' would be a particular curve. (Klimm, TR 13,902-03). "We calculate the mid-block capacities at a point, a representative point, along that link." (Klimm, TR 13,902-03). There is no numerical factor which relates to the degree of curves on a particular road or the number of curves on a particular stretch of road (Klimm TR 13,903, lines 5-8).

21 Having collected these data, HMM Associates then used algorithms developed by HMM based upon data and relationships in the Transportation Research Board's Highway Capacity Manual (1965) and Transportation Research Board Circular 212 (1980), and the formula or mechanism to translate the roadway measurements into other numbers in the ETE Appendix 10 tables such as JAM, FCap and other capacities. These HMM algorithms by the NETVAC model to define (1) the relationship between the speed of evacuating vehicles versus traffic density, and (2) actual roadway capacities, including intersection capacities. (Klimm TR 13,874-76). This sort of methodology for application of site-specific data represents standard traffic engineering practice (Klimm, TR 13,881). However,

22 the specific algorithms and assumptions used by NETVAC were developed by HMM for use in evacuation. (Time estimates for nuclear facilities, based upon data and relationships in 2 standard traffic engineering sources. (Klimm, TR 13,874-76).

Representative Fair and Adverse Weather Conditions

23 The primary purpose of evacuation time estimates is to serve as a tool in the protective action decision-making process by providing a framework within which decision-makers can incorporate input on evacuation characteristics and traffic flows at the time of an actual emergency. As such, pursuant to NUREG 0654, time estimates are intended to be representative and reasonable so that any protective action decision based on those estimates would reflect realistic conditions. Obviously, an overly conservative estimate could result in an inappropriate decision (Klimm TR 13,871, TR 13,908, TR 17,046). However, an estimate which is widely off the mark would be a problem. (Urbanik, TR).

24 Neither NRC regulations nor NUREG 0654 guidance establish a standard for "timely evacuation". The purpose of an evacuation time estimate study is to indicate the range of times required to evacuate the EPZ under a limited number of commonly occurring events so that decision-makers in an actual emergency "will have a good basis on which to make informed decisions based upon actual conditions." This includes local officials and emergency planners. (Klimm, TR 13,871). It is not the intent of evacuation time estimate studies of the exact conditions during an evacuation but to indicate the sensitivity of the analysis to a limited number of commonly occurring events (Urbanik, ff. TR. 19,203 at pp. 3-4, TR 19,240-41; Asher and Kinard (Admitted Contentions), ff. TR 20,150 at p. 33).

25 Therefore, it is not the intent of NUREG 0654 to require the analysis of a "worst case" scenario. Rather, the the adverse weather scenario is essentially for conditions that are passable for which evacuation is feasible, so planners can determine whether or not the particular network and portions of the network are or aren't sensitive to slick but passable road conditions. (Urbanik, TR 19,227).

26 A reduction in roadway capacity of 30 percent for adverse weather was assumed in the ETE study (Klimm, TR 13,860, TR 13,907). This reduction factor was not based upon input and discussions with local municipal officials and planners so that their area of responsibility's site-specific characteristics were not considered. Similar capacity reduction factors were used at other nuclear power plants across the country and it was considered appropriate to use those at Limerick. (Klimm, TR 13,908-09, TR 14,062, TR 17,047). The record contains no testimony from PEMA or the counties on this matter, though the Applicant had every opportunity to ask, including their own subpoenaed witness, Bigelow.

27 A 30 percent reduction in roadway capacity and travel speeds for adverse weather conditions represents a condition where it might be snowing and visibility would be impaired, roadway speed would be reduced and driving conditions in general would be degraded. This situation would translate into an inch or two of snow and includes possibly icy roadway conditions (Klimm, TR 13,907-08, TR 17,046-47). There is no assumption in the ETE study that the roadways in question would be plowed during a storm (Klimm, TR 13,907, TR 17,044-45). A reduction factor of greater than 30 percent

that would represent a storm where

snow plowing would be necessary and the unpredictable time associated with snow plowing would have to be incorporated (Klimm, TR 17,078).

- 28 The time needed to clear roads of snow might vary significantly depending upon the weather, precipitation, temperature, and available resources. Officials of the agency responsible for snow plowing, the Pennsylvania Department of Transportation ("PennDOT"), would be stationed at both the Commonwealth and county EOC's. Information as to road conditions would be factored into the decision-making process to decide the appropriate protective action recommendation (Klimm, TR 17,044-45). Some local officials and planners testified that PennDOT is slow to respond to snow emergencies. (See Vol 12 FETTERS

Preparation and Mobilization Times

- 29 The ETE study also attempts to account for the possibility that people at work outside the EPZ would return to the EPZ and then leave from their homes. This was done by incorporating a distribution of preparation and mobilization times into that study. Accordingly, the ETE study does not instantaneously load vehicles onto the evacuation routes at the time of notification to evacuate. Rather, there is a distribution of times which assumes varying preparation and mobilization periods for different members or segments of the population, including those who may return to the EPZ prior to evacuating (Klimm, TR 13,869-70, TR 14,037-38). Section 5 of the ETE study describes the evacuation preparation and mobilization time assumptions for each population category (Klimm, TR 13,967-68). There is no listing in Section 5 of a population category for those returning to the EPZ. Various appendices identify major popula-

- tion categories, including permanent residents, transients and special facilities, based upon the population, vehicle demand and location (Klimm, TR 13,835, 13,000).
- X Outside the EPZ in the Valley Forge Area for instance, it is assumed that 30 minutes following notification, evacuating EPZ traffic will not be affected by pre-existing traffic or flow since it was a planning assumption that non-EPZ vehicles access to all evacuation links would be restricted such that those vehicles would not be on those roadways at the time evacuation loading begins 30 minutes after notification. (Klimm, TR 13,869-870). The same principles apply to all links including those south of the EPZ.
- .30 It was assumed that no vehicles would begin to evacuate during the 15-minute notification period plus the minimum preparation/mobilization time of 15 minutes for all population sectors (Klimm, TR 14,062). On the same basis it was assumed that preparation and mobilization times in the event of an accident would range from 30 minutes to 150 minutes after notification (Klimm, TR 13,869-70, TR 14,038-39).
- 31 The ETE study assumes that buses would depart over a 60 minute period from 30 to 90 minutes following notification; that up to one-hour time frame for school buses is not site-specific for the Limerick EPZ as it was not discussed with school district or bus providers (see finding): That hour includes the total time required to drive the buses to the schools and load students onto them. "The time frames associated with mobilizing the buses and drivers themselves may or may not be included in that hour time frame" according to the assumptions in the ETE. (Klimm, TR 17,260-62, Cunington, TR 17,258-59, Klimm and Cunington TR 17,374-74). The Applicant has not elicited testimony

or evidence from the 3 county emergency management coordinators or PEMA as to whether more than the one hour assumption was deemed "worst case" by them.

32. Traffic flow simulation in the ETE study treats buses the same as other vehicles, except that buses are deemed to be the equivalent of two automobiles (Klimm TR 17,264). No convoys are simulated as such. School evacuation would not affect evacuation time estimates unless vehicle demand associated with schools is significant compared with overall traffic flow on evacuation link. Moreover, the preparation and mobilization time associated with schools significantly less than those for permanent residents (Klimm, TR 17,375). If it were realistic that buses would be among the last vehicles to enter the evacuation network, buses could be critical in determining evacuation time estimates for the entire EPZ implicit in testimony. (Klimm, TR 17,265-66). Special facilities (hospitals, nursing homes, jails) would be loaded onto the network 75-135 minutes following notification (Appl. Exhb. E-67 ETE pg. 5-5).

Delays

33 NUREG 0654, in Planning Standard J., Elements J(10)(i) and J(10)(1), 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 should be 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. Based upon its review 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.

34 To the extent the HMM study did not fully 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 affect 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 such an evacuation 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. (Asher & Kinard ff. TR 20,150 at p. 33).

35 Essentially, the model attempts to simulate the movement of vehicles along a roadway network, utilizing some accepted traffic engineering principles and practices, but NETVAC is not used in HMM's other traffic engineering work. Model inputs are variables that take into account the population vehicle loading and certain roadway characteristics (Klimm, Tr. 13821-24). For the purposes of the Limerick ETE, HMM does not use several of the variables.

36 In a validation test of the NETVAC model against real life data in Seabrook New Hampshire showed that for 2000-2500 vehicles leaving a sporting event on 25-30 total evacuation road links, the NETVAC simulation differed "a matter of minutes; the actual vs. the observed." The movement of vehicles took "an hour to an hour and a half period, maybe two hours." (Klimm Tr. 13905-07).

37 The HMM ETE for Limerick has 198 links (appendix tables), plus a Limerick Evacuation would involve about 255,284 people (winter weekday, Apl. E-67, pg. 3-22, Analysis area 14) or at 3 persons per car approximately 85,000 vehicles. The NETVAC model calculated this Limerick Evacuation to take (pg. 6-7) 4 hours, 50 minutes for a winter weekday, fair weather condition.

38 The NRC Staff's witness, Thomas Urbanik, an expert in the evaluation of evacuation time estimates prepared for fixed nuclear facilities in the United States, stated that based on his examination of the document, the ETE study is prepared consistently with the assumptions and methodologies of NUREG-0654, Appendix 4 (Urbanik, Tr. 19223), plus could have an error of 10-20%. He also testified that the evacuation time estimates contained in the ETE study were "reasonably and soundly based" only with the qualification being the issue of traffic control Dr. Urbanik raised. (Urbanik Tr. 19277)

39 The Pa. turnpike (Rte. 276) is being used as an evacuation route in the King of Prussia area. And unlike the local area, there is the possibility of through traffic being on these facilities, or other people using them. The fact cannot be ignored that there may be some people from beyond the EPZ using the Pennsylvania Turnpike at the time it is being desired to use it for evacuation also (Urbanik TR 19,234-19,235)

40 "At the same time the plan calls for folks from another area, also through a rather (sic) set of loops and ramps and everything to get on the Pennsylvania Turnpike in the area we have just been referring to, near Interstate 276 and 76. So, those folks, could in fact, conflict in the sense of both trying to use the same facility at the same time." (Urbanik TR 19,237)

41 The Board cannot limit its concerns to the one example cited by Mr. Urbanik, the Pennsylvania Turnpike. The same principles would apply to other limited access highways carrying long distance traffic and parts of several of them make up the set of loops and ramps in King of Prussia or what has been described as a hook made up of Routes 202, 76, 276, + 363 - Countyline Expressway.

42 The four areas mentioned in LEA 24/FOE 1 i.e. Marsh Creek State Park, the Exton area, Valley Forge National Park and the King of Prussia area are not the only four areas one needs to be concerned about with respect to traffic control points outside the EPZ. One has to look outside the EPZ as a whole system of highways. (Urbanik TR 19,231 line 19) For example, a TCP at the Downingtown Turnpike can affect turnpike traffic in King of Prussia. (See *Sinding*)

43 State, County, Municipal and Township plans should include these additional traffic control points beyond the EPZ (TR 19,232). This hasn't been done to date, based upon those points listed in the Applicants ETE (App. Exhb. E-67) (Urbanik TR 19,228) Dr. Urbanik was not prepared to state whether TCP's beyond the EPZ should be just in the county or state plan, or in a plan for a township outside the EPZ (TR19,232 line 18-19,233 lines 1-5)

44 The evacuation time estimate study is adequate only with the proviso that there be adequate traffic control beyond the EPZ. But Dr. Urbanik has not reviewed the plans to recommend specific locations of all such traffic control measures. (Urbanik TR 19,234)

45 Dr. Vutz, in contacts with EC, asked questions about traffic estimates on the map identified as LEA Exhb. E-16, and how the evacuation time and traffic studies were done. He was not informed at that time that HMM as an organization was doing a study (TR 14,460) Dr. Vutz did not know the HMM ETE (App Exhb. E-67) study existed as an HMM study until he saw the copy provided to him by LEA. Previously, he had read in the Philadelphia Inquirer about time estimates which were described as having been made by PECO's consultants. (TR 14,460)

46 A secondary purpose of evacuation time estimate studies is to assist emergency planners in deploying resources during an evacuation. A prime example would be the use of traffic control at congested locations. Also, in some cases, special traffic control procedures might be used in a limited number of locations to reduce the evacuation time due to a bottleneck in the roadway network.

47 The projected evacuation time for the Limerick EPZ is generally about 5 hours or more. Significant traffic queueing (traffic jams) is going to occur during the evacuation. Traffic jams indicate a short-term capacity deficiency. With time, capacity catches up to demand and all vehicles are accommodated. Accordingly, the routine occurrence of traffic jams is not an indication of the inability to evacuate an area in a timely fashion. (Urbanik ff. TR 19,023).

48 "Capacity is a determination of the maximum flow along certain roadways and it is independent of the actual demand. Capacity is the same for a particular roadway at one time versus another. It is the maximum number of vehicles able to traverse the particular roadway section and through an intersection location."

49 Based upon that, "it is possible" that one could see a correlation between the volume of traffic that a roadway link can handle in the morning peak rush hour and the amount of traffic that it can handle during an evacuation for a given section of roadway. "It would be specific to the area. If a particular roadway during a peak hour period were operating at capacity and the same was the case for an evacuation condition for a particular time period, then yes, they would be comparable."
(Klimm, TR 17,063-17,064). cf. applicants proposed finding #10, pg. 17.

50 The Evacuation Time Estimate Study is consistent with the guidance of NUREG 0654 as it relates to Valley Forge Park. (Urbanik TR 19,262 lines 14 & 15) As one draws the Emergency Planning Zone boundary around a nuclear plant site, that boundary may include or exclude areas that are in close proximity to the 10-mile Emergency Planning Zone (Urbanik TR 19,261 lines 20-22) There is nothing to preclude including Valley Forge National Park in the Emergency Planning Zone if the state and local officials were so inclined to do that. (Urbanik TR 19,264 line 24 and 19,265 line 1)

51 Dr. Urbanik was involved in the preparation of the NUREG 0654 App. 4 Guidance and has reviewed the initial evacuation time estimate study submittals of approximately 52 operating or near term nuclear facilities and is currently reviewing revisions to evacuation time estimate studies and new submittals against NUREG 0654 Rev. I. (Urbanik ff TR at page 2) In response to a question, "Isn't that putting all the eggs in one basket?" Dr. Urbanik responded, "I don't think so. The document is a joint document between FEMA and the NRC. There is certainly review at more than one agency." (Urbanik TR 19,267 lines 1-4)

52 In response to a question from Judge Cole Dr. Urbanik testified: "There is a need for traffic control outside of the Emergency Planning Zone to assure that the people that would be evacuating in fact have a place to go.

"Although there is nothing in the guidance that specifically talks about the areas beyond the Emergency Planning Zone, so the study follows all the guidelines of the guidance. But, it is our position that you cannot treat this as a point in isolation. The EPZ exists in a bigger environment. And at most sites that bigger environment is yet generally rural. But in some sites that environmental may be urban.

"And in this case, in those portions beyond the EPZ that are urban, one needs to take any measures that would be necessary to assure that people that reach the EPZ can, in fact, go beyond the EPZ." (Urbanik TR 19,277 lines 11-24)

53 And Judge Cole: "And what effect would that have on the time estimates - might it have?" Dr. Urbanik: "I would say that the time estimate study

has the implicit assumption that once you get beyond the EPZ, that you continue to move.

"And, in order for that assumption to be valid, one needs to take traffic control beyond the EPZ to assure that that implicit assumption is, in fact, met." (Urbanik TR 19,278)

54 There are essentially no traffic control points beyond the Emergency Planning Zone. (Urbanik TR 19,278 lines 24-25) The areas of concern are to the more urbanized areas to the south and to the east generally. (Urbanik TR 19,281) The location of traffic control points needs to be analyzed in a broad context, and Dr. Urbanik does not attempt to state exactly the points with which he is concerned because "somebody might miss a point that I didn't say." (Urbanik TR 19,281, lines 6-10)

55 Having been involved in the preparation of the guidance in NUREG 0654 Rev. I makes it easier for Dr. Urbanik to determine the compliance because otherwise one could argue over words, whereas Dr. Urbanik is, because of his involvement in the preparation, better qualified to interpret the guidance. (Urbanik TR 19,266 lines 20-25)

56 For the Limerick EPZ, the projected evacuation time is generally about 5 hours or more. An error of 10-20% in the projected evacuation time would not disqualify the ETE from being useful to officials and planners who are making protective action decisions. (Urbanik TR 19,212) If there were some reason to believe that the error was more than 20%, Dr. Urbanik testified "obviously one would be uncomfortable with the results if they had a reason to believe that they were widely off the mark. So, you know, in a hypothetical basis we could perhaps say that at a certain point we would be unhappy with the estimate" (Urbanik TR 19,249 lines 10-19). 20% of about 5 hours would be about 1 hour. (calculation from the above).

57 One way to evaluate an ETE is to go through the ETE study and compare the study with all of the criteria of the guidance in NUREG 0654, Rev.1 (Urbanik TR 19,213 line 13)

58 There is no criteria in NUREG 0654, Rev. 1 that one must make any assumption that at the beginning of an evacuation the roads should be considered empty of traffic. (TR 19,213 line 22 - 19,214 line 1) There is no prohibition of considering peak flows in day to day traffic, although the failure to do so is not necessarily inappropriate (Urbanik TR 19,214 lines 6-9)

59 Although one cannot simply superimpose peak flows on top of an evacuation and say "look how bad it is during a peak hour and now we're going to put all these people back on the roads again." (Urbanik TR 19,215 line 18), it is worth considering that peak traffic hours be included in an ETE because "we should never exclude anything from our thinking when we analyze a particular problem." (Urbanik TR 19,216 line 2)

60 Appendix A-10 was presented in the Evacuation Time Estimate report (Appl. Exhb. E-67) since that appendix presents a summary of the roadway capacities which is a requirement of NUREG 0654, that the capacities be indicated (Klimm TR 13,897 line 17). However, there is no way to relate a roadway capacity listing in App. A-10 to any particular road without using the maps in App. A-11 which show the nodes and links on an evacuation network map. But the numbers in the circles are not legible on that map since "These particular maps were developed not for the purpose of identifying graphically, areas in which links queued throughout the simulation period, and are referenced in the text as such" (Klimm TR 13,861 lines 14-19)

As such, the HMM ETE (Appl. Exhb. E-67) does not appear to satisfy the guidance on page 4-5 and 4-6 of Appendix 4 of NUREG 0654 under (A) Evacuation Roadway Network and (B) ROADWAY SEGMENT CHARACTERISTICS . Also compare NUREG 0654 example Fig. 3 on 4-13 and example table 1 on 4-15.

62 Page 5-6 General Structure (Appl. Exhb. E-67 ETE) describes the four basic units (procedures). The main program determines the length of the simulation by terminating the program once the network is empty.

63 The ETE does not meet the requirement in paragraph 2 on page 4-9 of NUREG 0654 which states "traffic queue (backup) locations and estimated delay times should be indicated on the area map." No estimated delay times are indicated on the queueing maps.

64 Two specific requirements of NUREG 0654, Rev 1, App.4 under (V) other requirements page 4-10 are not met in App. Exhb. E-67. Paragraph 2 under (V) - specific recommendations for actions to significantly improve evacuation time and preliminary estimates of cost of implementing these recommendations paragraph 3 - "A review of the draft submittal by the principal organizations (state and local) involved in emergency response for the site shall be solicited and comments resulting from such review included with the submittal."

For winter weekday, fair weather conditions, the estimated evacuation time for the full EPZ is 4 hours, 50 minutes, according to pg. 6-7 and pg. 6-8 of the Evacuation Time Estimate Study prepared by the Applicants Consultant HMM and marked Applicants Exhb. E-67. "This time is the same for the corresponding Montgomery County Analysis Area. This evacuation time is influenced primarily by the capacity limitations of access ramps to Route 363 and to the Pennsylvania Turnpike in the extreme southeast corner of the EPZ (i.e., just east of Valley Forge National Park). Another location where queueing is indicated is along a section of Route 422 eastbound in Collegeville Borough." (Appl. Exhb. E-67 pg. 6-8) It is clear from the above that the King of Prussia-Valley Forge area is critical not only to the evacuation of the Montgomery County EPZ, but sets in effect the outside limit for the whole EPZ's evacuation time.

66 Using the list of definitions described by Mr. Klimm, the HMM consultant who prepared the evacuation time estimate study, Appl. Exhb. E-67, in transcript pages 13,846-13,857 as well as the example described by Mr. Klimm in pages TR13,858-13,865 and the follow-up on transcript pages 14,098-14,100, it is possible to use the tables in Appendix 10 of the ETE (Appl. Exhb. E-67) and the maps in Appendix 11 to establish the capacities calculated by HMM Associates for the site specific data they collected. One can also establish what site specific data was observed from those columns which are inputs of that data into the computer model.

67 The listing in Appendix 10 are for an "Advers .70" or adverse weather condition so the travel speeds and capacities are reduced by 30%. (Klimm TR 13,860) For the intersection approach capacities, the number is vehicles per hour, but for the freeway capacities (FCAP) they are vehicles per hour per lane. (Klimm TR 13,865) A CAP or intersection approach capacity of 1073 for example is the upper bound of the physical capacity of that ramp or intersection. (Klimm TR 14,099) These capacities are the initial computed capacities and they are re-calculated every simulation interval. (Klimm TR 13,857).

68 A comparison of the flows and density of traffic at peak commuter hours and the traffic associated with a Limerick emergency would depend upon the destination and origins of the vehicles in question, and also upon the time of day because of existing traffic conditions (Wagenmann TR 17,466 lines 5-11).

69 At the present time North Gulph Rd. "actually merges with what is called the Countyline of Pottstown Expressway and crosses the river to Trooper Rd.". At the top of Applicant's Exhibit E-92 you can see 363 and the words Trooper Rd. (Wagenmann TR 17,472 lines 11-5).

The Schyulkill Expressway is Rte. 76 (Wagenmann TR 17,473)

71 The Pennsylvania Emergency Management Agency in consultation with the Pennsylvania Department of Transportation developed evacuation time estimates for the Limerick Emergency Planning Zone in 1983. The results of the PennDOT-PEMA analysis were documented in an "Evacuation Plan Map" for the Limerick Generating Station dated June 1983. (LEA Exhb. E-16, also part of Comm. Exhb. E-1) (Klimm ff. TR 13,794 at page 1)

72 PECO's consultant, Mr. Klimm of HMM Associates, testified that he has had discussions with PennDOT about the procedure used (TR 13,827) and now has a basic understanding of how those estimates were performed (TR 13,827 at 23) "There was primarily a manual calculation of capacities in relationship of the expected vehicle demand with the roadway capacity." (Klimm TR 13,828 at 6) Mr. Klimm further testifies when asked if the PennDOT analysis that "I don't believe it was inadequate for what they were doing. It was not an attempt to meet the requirements of Nureg 0654, Rev 1, App. 4. It was an attempt to develop evacuation time estimates given certain inputs. And as such, I think it was an appropriate means for assessing that type of thing." (TR 13,828 lines 15-20)

73 The HMM ETE (Appl. Exhb. E-67) and the PennDOT-PEMA manual analysis (as reflected on LEA Exhb. E-16 and included in Comm. Exhb. E-1) do not differ in some basic assumptions as to the amount of traffic a lane can handle (Klimm TR 13,829 line 1)

74 There are standards which are used typically to estimate a queue length based on the assumption of an average spacing. That is typically on the order of 20 feet. The NETUAC Computer simulation uses this 20 foot figure (Klimm TR 13,830)

75 Mr. Klimm was of the opinion that "The analysis conducted by PennDOT looked at roadway capacities and developed a time estimate based on the ability of the roadways to accept certain vehicle demands. As such, they were not concerned with vehicle queues but only in delays." (TR 13,830 line 6)

76 The PEMA-PENNDOT map (LEA Exhb. E-16, June 1983) was used as an initial starting point for the HMM study only in terms of the evacuation routes, not in terms of the flows and times presented in the HMM study (Klimm TR 13,832 line 7)

77 HMM recalculated the number of vehicles in a number of populations based on up-to-date data (TR 13,832 line 22) HMM has. The HMM ETE study (Appl. Exhb. E-67) has no maps containing the same type of vehicle numbers and time estimate for each route as was shown on the PEMA-PENNDOT map. But, Mr. Klimm testified to a procedure which enables one to calculate the vehicle numbers for each evacuation route from data listed in the HMM ETE. (Appl. Exhb. E-67) "The information is available for each one of the population categories on a township basis and one can go through the various appendices and see for permanent residents and the various transients and special facilities which townships these are in and what the population is, what the vehicle demand is. One can then turn to the section which defines the evacuation routings for those townships and total those numbers to find the actual usage of the evacuation routes used by those townships." (TR 13,837 lines 6-15)

78 The HMM evacuation time estimate (Appl. Exhb. E-67) assumes that vehicles leaving Phoenixville could travel on route 23 north to Route 113 south in addition to using the estimated routes along either route 23 on route 29 south. (Klimm TR 13,889 line 18) The Phoenixville traffic using this alternate route would be added to traffic from other townships that have designated as their prime evacuation route 113 south (TR 13,891 lines 14-19). Route 113 south evacuation route leads to Gordon Drive, before the intersection of 113 + 100, and follows Gordon Drive onto Route 100 (TR 13,892).

79 Queueing is a term which refers to stopped vehicles or congestion, in lay terms (Klimm TR 13,925). Appendix A-11 of the ETE study (Appl. Exhb. E-67) is a graphical representation of roadway sections where there are vehicles stopped at that particular time.

80 As indicated in the legend, the heavy line represents those links where the vehicles are stopped at that time. What this represents is a "snapshot" of what is happening at that particular time. It is not indicative of what is happening before or after. One looks at these different "snapshots" at different time periods to get an indication of where queueing is occurring consistently throughout the evacuation period. And this represents a "snapshot" of what is happening at T=_____ minutes after notification. (Klimm TR 13,926-13,927) There was also queueing on many of the links throughout the evacuation network at different time periods throughout the course of the evacuation (Klimm TR 13,928) This particular appendix (11) is representative in nature (TR 13,928 line 21). These "snapshots" are taken at one hour and one half to two hour periods throughout the course of the five hour simulation. Queueing may occur between any of the two "snapshots", and is taken. (Klimm TR 13,929 line 22) T=270 minutes indicates 4½ hours following notification (TR 13,930 line 19) The summer weekend fair weather time for the full EPZ is 4 hours and 45 minutes. So, T=270 minutes is approximately the time at the end of the simulation (TR13,931)

81 Mr. Klimm testified that A-11-4 (T=270 min.) indicates that there is no queueing on links outside the EPZ at 4½ hours after notification. (TR 14,101 line 25)

82 Annex I of the MontCo plan Appl. Exhb. E-3 has on the tables beginning I-2-5 a time specific to the individual bus provider having his units available to mobilize, including drivers (Bradshaw, TR 17,250, Klimm TR 17,260). Mr. Bradshaw was incorrect when he testified on TR 17,348 that verification of the transport dependent lists occurred during the July 25 and November 20 exercises when municipalities contacted individuals listed as transport dependent to update their status. Obviously one cannot determine how many people are not on a list who should be, by calling those who returned a survey and are on a list.

83 The last vehicle to enter the slowest evacuation corridor in Montgomery County on a winter weekday would exit the EPZ at 4 hours, 50 minutes or T=290, that is 290 minutes following notification that vehicle would also be the last to leave the EPZ since the Montgomery County Analysis Area is the critical area with 363 county line and the turnpike ramps being the key capacity limitation (Appl. Exhb. E-67 ETE pg. 6-7, 6-8) Now since all permanent residents associated vehicles enter the network from 30-150 minutes including buses for the transport dependent which tend to enter the network towards the end of that time frame (Klimm, TR 17,262), the last car (or perhaps bus) to enter the network, does so at 150 minutes after notification and takes until T=290 minutes winter weekday to exit the EPZ as the last vehicle to leave. That takes 140 minutes or 2 hours 20 minutes to travel perhaps from somewhere in Upper Providence to the Schuylkill River border of the EPZ. As indicated in finding , despite the depiction in Appl. 1-4 or Appl. 1-7 of the Evacuation Time Estimate Queuing and Traffic congestion must still exist on that county line expressway, Rt. 202, Rt. 76, Rt. 276 corridor because of ramp restrictions (ETE pg. 6-8) even though all traffic left on that corridor is only from the EPZ and the last vehicle to enter any evacuation route did so at T=150 minutes 2 hours 20 minutes before! Perhaps this can be better understood by calculating that the roughly 10,000 vehicles using that corridor could form a queue of 20 ft x 10,000 or 200,000 ft. long (5280) or

40 miles of solid queueing (using the 20 ft. assumption the ETE uses). Of course, the simulation as the ETE performs it does not simulate it that simply, but the basic capacity restrictions of the ramps is an upper bound. (see finding).

84 The completion of the Schuylkill Expressway Extension does not reduce overall EPZ evacuation times due to capacity deficiencies along Route 363-Countyline Expressway South, which would serve as a major exiting corridor, with or without the new expressway extension. The simulation was run using the winter weekday fair weather conditions. (Appl. Exhb. E-67 ETE pg. 7-10).

85 Despite the testimony of Mr. Klimm at TR , the fact is that since it is capacity restrictions on such routes as 363-County line Expressway ramps (ETE Appl. Exhb. E-67, pg. 7-10) or as indicated on pg. 6-6 of the ETE on the Countyline Express ramps between Audubon Road and the Turnpike or the Turnpike ramps (ETE 6-8), the map on ETE pg. All-4 or All-7 which show no queueing outside the EPZ must be wrong since at T=270 minutes (4½ hours) or even at 4 hours 50 minutes it is that very queueing which reflects the capacity limitations outside the EPZ on the Countyline Expressway - Turnpike ramps which is determining the evacuation time. In fact considering the ramp capacities as indicated in the ETE App 10 tables (see finding), and assuming even the traffic control arrangements in Mr. Klimm's prefiled testimony all along 363-Countyline, Rt. 202, Rt. 76 (Schuylkill Expressway) and Rt. 276 (turnpike), congestion and queueing at those ramps and cloverleaves must continue long after the last vehicle has left the EPZ are on the Valley Forge Evacuation Corridor.

86 Chief Ranger Fewlass of Valley Forge National Park testified from figures on preprepared notes that he had brought with him that nearly 13 million visitors enter Valley Forge National Park for any reason each year. (Fewlass TR 14,645-46)

87 At the time of an evening program for the 200th Montgomery County Anniversary Celebration in 1984 there were approximately 2,000 cars parked near the Valley Forge Park amphitheater. After the program it took approximately 45 minutes for these vehicles to be directed out of the park entrances to leave the park. This was a unique or very rare occasion where the Park has a heavy concentration in one spot, and all the cars were leaving from one central location in the park and going out in different directions. (Fewlass TR 14,608)

88 Chief Ranger Fewlass feels that it would be worthwhile for there to be a study of the effect on park traffic of a spontaneous evacuation from King of Prussia at the time of alert. (Fewlass TR 14,608)

89 A portion of Valley Forge National Park is within a 10 mile circle of the Limerick Nuclear Plant. (Fewlass, TR 14,651-52 & TR 14,656)
There is a parking lot for vehicles and a trailhead within that area of the Valley Forge National Park which is within the 10 mile zone. (Fewlass TR 14,649)

90 The Park personnel controlling traffic at the intersection of Routes 23 and 252 will allow evacuees to proceed straight on Route 23 into the Valley Forge Park if that could be done without creating additional traffic problems or some kind of hazard. (Fewlass TR 14,569)

91 The cloverleaves at 363 and 23 as shown on Applicant's Exhb. E-92 are indicated to be within the Valley Forge National Park boundary. On the earlier incorrect version of the map (Appl. Exhb. E-68), those cloverleaf intersections were not indicated to be within the Valley Forge Park boundary. (Klimm, TR 17,085-17,086). That intersection is not specifically included in the evacuation network. However, that point will be manned by Park Rangers or state or county police officials. (Klimm, TR 17,086).

92 The outbound flow on Route 23 that is associated with permanent residents would travel back into the EPZ. In addition to that, normal everyday peak hour traffic along Route 23 includes other through traffic and vehicles with entirely different origins and destinations. (Klimm 17,096).

93 When first confronted with the Appl. Exhb. E-92 (1st version) map error showing the entire Schuylkill Township portion of Valley Forge National Park in the Emergency Planning Zone, Mr. Klimm said that "I am not sure of the exact boundary." (Klimm TR 17,098).

94 The average daily vehicle counts for cars entering Valley Forge National Park from the west on Route 23 for the year 1983 are listed (as testified to by Chief Ranger Fewlass at TR 14,614):

The weekday high is for August and is 9,984

The weekday low is for February and is 6,820.

The weekend high is for May and is 7,966.

The weekend low is for February and is 4,755.

95 Forty percent of the Valley Forge National Park traffic enters the park from the west on Route 23. (Fewlass TR 14,644)

96 The Park Service considers traffic on Gulph Rd. to be 1% recreational and 99% non-recreational on weekdays; 10% recreational and 90% non-recreational on weekends. (Fewlass TR 14,688-89)

97 Gulph Road is a split-off from Route 23. Gulph Road heads towards King of Prussia. (Fewlass TR 14,579)

98 Valley Forge National Park has developed procedures or guidance as to what would be done if the Park should receive notification through the Chester County Radio system that an evacuation was to be ordered for the Limerick Emergency Planning Zone. This was developed at informal planning sessions held on their own. The approach would be primarily to inform people in the Park that there was an alert and to give them (Park visitors) the opportunity then to take whatever action they felt prudent. Park personnel would use the public address systems on their patrol vehicles to try to make contact with as many people in the Park as possible. For example, school bus drivers we would advise to call their schools for instructions as to what they should do. (Fewlass TR 14,681)

99 It would take 45 minutes to an hour to go around the Park with the vehicles the Park has to notify visitors at the major concentrations of Park use. Many of the people who would probably later set up traffic control would be involved in notifying visitors. Therefore, it would probably take close to an hour to establish traffic control points once the Valley Forge Park was notified that a 10 mile Emergency Planning Zone evacuation was a possibility. (Fewlass TR 14,682-83)

100 The place for a workable Valley Forge Park support plan to be written is not in this record. There is no assurance that whatever informal policies Valley Forge National Park should chose to implement at the time of a Limerick evacuation would, in fact, be consistent with what the Emergency Planning Zone is doing. Because of its location, transient population, traffic control responsibilities and intention to notify park visitors at an alert, Valley Forge National Park could have, in fact, an overall effect on evacuation plan traffic workability and the reliability of evacuation time estimates that would be greater than that of a relatively unpopulated township within the EPZ itself.

101 As it is, 1/3 of the park is within two townships, Lower Providence and Schuylkill, which are in the Emergency Planning Zone (since 2/3 of the park is in Upper Merion and not in the EPZ). Coordinators and officials of both EPZ townships were among the most emphatic in expressing traffic and communication related concerns. Upper Merion Township, which includes the other 2/3 of the park, geographically, if not administratively, is a key township for traffic control. The transient population in Upper Merion Township can approach 200,000 people.

102 North Gulph Road is also known as Route 363. It is a two lane arterial (Wagenmann TR 17,433) and is the main access road to the Valley Forge National Park. (TR 17,431). The normal engineering standards of AASHTO would be 14,000 - 17,000 vehicles a day two way normal level of service. (TR 17,434)

Note: At this point Mr. Wagenmann corrected Mr. Anthony's use of the word "capacity" (TR 17,434 at line 22) .Also at TR 17,433 line 10, Mr. Wagenmann used the proper terminology 'trips per day ' which is a 2 way 24 hour term. One of the townships recent traffic counts puts North Gulph Road at about 29,000 vehicles a day in actual traffic volume. (TR 17,434 at lines 15-18)

There is a serious day to day traffic problem on North Gulph Road, (Route 363) (TR 17,433. That count of 29,000 vehicles is in the area of 1st Avenue and Route 363 or North Gulph Rd. (TR 17,472)

103 Upper Merion Township has a computerized traffic control system in place. The Township-Wide Traffic Study identified as LEA E-56) , recommended that this computerized system be made traffic actuated to respond to traffic conditions such as density or traffic loading in order to improve traffic flow. If the computer system were pre-programmed to handle unexpected traffic congestion it would the capacity of evening out flows. At the present the township doesn't have the the intention to program the computer in such a way. (Wagenmann TR 17,461)

104 Mr. Fetters participated in the July 25, 1984, test drill as Upper Uwchlan Emergency Management Coordinator. (TR 14,751)

105 Upper Uwchlan contracts the Uwchlan Township Police Service, and the Lionville Fire Company covers part of Upper Uwchlan Township. Mr. Fetters testified that in his judgment Upper Uwchlan would have to take care of its own traffic control points and not rely on others. "I can't foresee the police or fire personnel being available to do it. Just not enough of them to go around." "I feel that they will be otherwise occupied." (TR 14,762)
Presently Upper Uwchlan does not have enough people to man all these traffic points itself, either. (TR 14,752)

106 A snow storm of 5 or 6 inches would cut the speed of traffic on the Upper Uwchlan Township evacuation routes by more than 30 percent. (Fetters TR 14,766)

107 The map dated June 1983 identified as LEA Exhb 16 which was developed by Penn DOT for PEMA (also Comm. Exhb E-1) indicates numbers of vehicles and a time estimate for each of the evacuation routes marked in red. Mr. Klimm testified there were differences between those listings of traffic volume and those used in the ETE performed later by HMM. (Klimm, TR 13,840, line 19). However, the PennDOT study is adequate for "what they were trying to do." (Klimm, TR 13,828). The July 1984 draft map (Comm. Exhb E-9) prepared for PEMA by PennDOT does not show numbers of cars for any indicated evacuation route. However, the previous figures are still valid.

108 The Chester County RERP Draft 10 (Chester Co/Comm. Exhibit E-1) indicates on pg. L-1-2 an evacuating population from Charlestown Township, Schuylkill Township and Phoenixville Borough of 22,928 people. Dividing that population number of 22,928 by an assumption of 3 persons per vehicle gives $22,928 \div 3 = 7642$ vehicles. The reception center assigned on L-1-2 for these evacuees is the Stetson Middle School. Commonwealth Exhibit E-9 Evacuation Plan map July 1984 Draft shows the red evacuation corridor leading to the Stetson Middle School along route 202 south. Comparison with the June 1983 Evacuation Plan map (marked as LEA Exhb. E-1 and included in Comm. Exhb. E-1) shows what is fact the same evacuation corridor leading to the West Goshen Shopping Center. Adding the numbers of the 2 branches of this same corridor (the 252 branch has 4,222 vehicles and the Rt. 29 Branch has 3,421 vehicles) as marked on the June 1983 map totals 7643 vehicles, the same as calculated above from the Draft 10 Chester County Plan (Chester Co/Comm. Exhb. E-1).

109 In a Limerick evacuation, 6500 or 6600 vehicles would use the Route 100 corridor, and the reception center at the West Whiteland Township Building is assumed by PEMA to be used by 50%. (Klimm, TR 13,813) The West Whiteland Township Building as a reception center offers no advantage from a traffic operational standpoint over the previously designated Exton Square Mall. (Klimm, TR 13,811 at line 25) A potential disadvantage of the West Whiteland Township Building would be the vehicle storage capacity of the parking lot. (Klimm, TR 13,812, line 7)

110 Using the 20 foot per vehicle factor testified to by Mr. Klimm for within a queue (Klimm, TR 13,829 at line 15), a 6500 car evacuation volume could form a maximum length queue on one lane of 6500 X 20 feet or 130,000 feet or approximately 25 miles. This is, of course, a stationary line of cars and would not exist in a real time situation, unless all that traffic was stopped by some blockage. On the other hand, non-EPZ traffic added to that volume could in theory increase the length of a theoretical queue. This is meant only to indicate that the scale of a potential problem could reach back well into the EPZ.

111 As indicated by either Comm. Exhb E-9 July 1984 Draft map or by the map marked as LEA Exhb E-16 (also included in Comm. Exhb E-1), June 1983 Evacuation Plan Map, all of the Evacuation Planning Zone traffic which uses the Route 100 corridor below the intersection of Routes 100 and 113 originates from Route 113 and enters Route 100 via Gordon Drive. A comparison of the June 1983 Evacuation Plan Map with Mr. Klimm's 6500 or 6600 figure (Klimm, TR 13,813) shows an increase of 2000 vehicles for that corridor over the previous PEMA-PENNDOT map figure of 4666. If the PEMA-PENNDOT time of five (5) hours for evacuated traffic to pass a given point were increased by a similar 40%, that time could become something on the order of seven (7) hours, without assuming the interference of any non-EPZ traffic at all.

113 There would be traffic congestion at the West Whiteland Township Building when vehicles arrived during intermittent periods. (Klimm TR 13,810, at line 9). From a traffic operational standpoint, the West Whiteland Township Building location for a reception center has no advantage over the Exton Square Mall. (Klimm, TR 13,811). A potential disadvantage would be the vehicle storage capacity of the West Whiteland Township's relatively small parking lot. (Klimm TR 13,812).

114 There is a tendency of families to unite prior to evacuation and travel as a family unit. (Klimm TR 17,071 at 1). The vehicle demand for permanent residents for the HMM ETE was developed based upon the assumption of 3 persons per vehicle which is roughly one vehicle per family. (Klimm TR 17,071). LEA Exhb. E-40 which is a section from Draft 6 of the proposed Chester County RERF shows on page I-2-1 a Persons Household column and a footnote 2 which indicates that these numbers are from the U. S. Census 1980 Characteristics of Households and Families. Each number in the column represents a site specific number of average persons per household for each municipality listed. It is not clear whether this information applies to all households or just those without transportation. The range of figures is from 2.53 in Spring City to 3.22 for Upper Uwchlan. If this kind of municipal information is available from the 1980 Census as it was to EC when it prepared Draft 6 (Dec. 1983), then it would be a relatively straight forward matter to compute which numbers from township and borough family sizes which are specific to each township, given the tendency of families to unite and travel together. This more realistic assumption can make a real time difference in evacuation times, and make any ETE more useful to municipal and county planners. For example, Spring City would have 12% more vehicles than at a generic 3 per vehicle, and Upper Uwchlan some 7% less. From the chart, it seems that urban areas average less per household.

115 Mr. Feters is the Emergency Management Coordinator, Township Constable, and has the snow removal contract of Upper Uwchlan Township. He also has a school bus transportation business plus provides buses on a day-to-day basis to Downingtown School District. (Feters TR14,700 and TR14,713)

116 An evacuation route into Upper Uwchlan Township is via Red Bone Lane onto Rt. 100 south. The June 1983 Evacuation Plan Map (identified as LEA Exhb. E-16) assigns a traffic volume of 664 vehicles to that evacuation route marked in red leading from St. Matthews Rd. onto Red Bone Lane and onto Rt. 100. (Feters TR 14,703,- 14,705)

117 Red Bone Lane is a dirt and gravel road of one car width, and is on a hill. (Feters TR 14,706 line 20 - 14,707) Mr. Feters estimates its length as 1¼ miles. (TR 14,709)

118 Certain traffic volumes from the Uwchlan Township Traffic Engineering Master Plan Study; Pa. Route 100 and 113 corridors (identified as LEA Exhb. E-23 as a selection, later identified as as a complete report) were read into the record by Mr. Feters at TR 14,710- 14,711. He stated "The Pa. Turnpike Interchange serves 8-9000 vehicles per day, traffic demand along Rt. 113 is between 15,000 and 17,000 vehicles per day and average daily traffic on Rt. 100 is 20,000 vehicles per day." (Page 7 (Feters TR 14,710- 14,711)

119 In the summer time on a hot day, anywhere from 15,000-18,000 people use Marsh Creek Park. (Feters, TR 14,716)

120 The HMM BTE (Applicant's Exhb. E-47) on page A6-7 lists 17,000 as peak July 1983 weekend population and a vehicle demand of 4250. It also shows 500 people for a winter weekday and 200 vehicles.

121 King of Prussia is what most people commonly recognize as being really Upper Merion Township. It is the heart of the community and Valley Forge National Park is in fact within Upper Merion Township. About two thirds of the land area of the Park is within Upper Merion Township. (Wagenmann TR 17,419) The western end of Upper Merion Township to Route 363 "is an industrial commercial zone that is intensively developed. A high percentage of the area is paved." (Wagenmann TR 17,420)

122 Mr. Wagenmann, currently Township Manager of Upper Merion Township, was assistant Township Manager of Lower Paxton Township, Dauphin County, which is 2-2½ miles from the edge of Harrisburg, Pa. Lower Paxton Township is in the vicinity of the Three Mile Island Nuclear Plant. Mr. Wagenmann's duties included working with the Township's emergency plan, which did not involve preparation for a nuclear emergency. There was a nuclear emergency during the time Mr. Wagenmann was Assistant Township Manager. Mr. Wagenmann had occasion to witness spontaneous evacuation at that time. (Wagenmann TR 17,418-19) The FOE representative's question as to whether Mr. Wagenmann was of the opinion that such a spontaneous evacuation could happen in Upper Merion was objected to by the Applicant as "beyond the scope of the contention," and the objection was sustained by Judge Hoyt. (Wagenmann TR 17,419 line 13) (Also at TR 17,480)

123 The current population of Upper Merion Township is approximately 27,000 people. (Wagenmann TR 17,436). Upper Merion uses an estimate of 40,000 people who work in Upper Merion. (17,436 line 13). Each of 2 shopping malls in the King of Prussia area can get in excess of 100,000 shoppers during peak shopping periods, according to the malls own estimate. During a normal heavy shopping day you could have approximately a quarter of a million shoppers (Wagenmann TR 17,437)

124 Shoppers, workers, and visitors enter Upper Merion Township by routes 363, route 23, 202 east and west, the Pennsylvania Turnpike east and west, the Schuylkill Expressway, and North and South Gulph Road. All these roadways serve as access highways into and out of Upper Merion Township. (Wagenmann TR 17,439)

125 Mr. Wagenmann prepared the Request for Proposal for the engineering firm to conduct the Upper Merion Study, was a member of the Task Force Committee that was organized by the township that worked with the consultant and reviewed his status reports and gave feedback, and had a day-to-day involvement with the consultant in obtaining various pieces of information the consultant needed. Mr. Wagenmann personally spent 60-80 hours of his time in preparation of the study. (TR 17,493 - 17,496)

126 Mr. Waters, Upper Merion Fire Marshall and Emergency Management Co-ordinator ,was not involved in emergency planning for Limerick. After he became Emergency Management Co-ordinator he became familiar with the plan. Certain aspects of the plan concerning central staging and transportation staging involve Mr. Waters as an Emergency Management Co-ordinator. (Wagenmann TR 17,445).

127 Upper Merion Township has been designated as a central resource staging area and as a transportation staging area in the Limerick Evacuation Plan. It's responsibility will be to co-ordinate the dispatching and receiving of transportation facilities and central resource, (foodstuffs, etc.) from the King of Prussia Plaza. (Waters TR 17,446)

128 The King of Prussia Plaza and The Court are 2 large malls in Upper Merion Township. (Wagenmann TR 17,421, line 21)

Mr. Waters did not make the decision to use the King of Prussia Plaza as a transportation staging area and does not know who made that decision. (Waters TR 17,447)

129 Mr. Waters has talked to Mr. Bigelow about these plans. The Upper Merion Township Supervisors are aware of the fact that Upper Merion is not within the 10 mile radius and aware pf the fact that there is a staging area in Upper Merion Township. The Upper Merion Emergency Management Co-ordinator has not talked with emergency planning people about plans to block off highways that run through the township, or heard any plan mentioned. (TR 17,448)

130 In regards to Route 202, Mr. wagenmann is certain that stopping traffic would create major congestion. He has seen it stopped for accidents and the results were " Traffic jams that were many miles long." (TR 17, 449)

131 Mr. Wagenmann, the Upper Merion Township manager, testified that the following sentence contained in a question by Mr. Anthony of FOE was in his copy of the Upper Merion Township wide Traffic Study referring to the 3rd paragraph on pg. 1 of the study marked as LEA Exhb E-56. (Wagenmann TR 17,443 line 9-13) "Accessibility, the factor responsible for much of upper Merion's tremendous growth is approaching the point where it is more a liability than an asset. For more than 20 years, the Pennsylvania Turnpike, the Schuylkill Expressway and Route 202 made the township an excellent location for commercial and retail development, and a convenient spot for residents. Today, all three of these highways experience greater than capacity volume on their segments through the township." (TR17,443 lines 14 - 21). In his answer to a follow-up question, Mr. Wagenmann testified, " It would be very difficult for Upper Merion Township to control the growth of traffic since all three of these highways are primary state - actually federal highways - and they are primary access routes, actually interstate access routes through the Township. Even if upper Merion were to stop growing today, we would experience increased traffic because of the growth that is taking place in the communities that surround Upper Merion Township." (Wagenmann TR 17,444 lines 8 - 16).

132 Road improvements in Upper Merion will invite new traffic, which will happen anyway because of the development that is taking place in the surrounding municipalities and what is known as the 202 High Tech Corridor. (Wagenmann TR 17,477)

133 Appendix I-2-5 of the draft Montgomery County RERP (Applicant's Exhb. E-3) shows in Tab. 3 Bus companies the mobilization time for buses and drivers at the bus provider's location prior to transport and loading at a risk school or transport dependent pick-up point. Some examples from the table Abington Township School District 8 buses, 1 hr., Carol Lines, Inc., 40 buses, 1 hr., (destination including Limerick Township, Douglass Township, Spring-Ford Area Schools) Hatboro-Horsham School District, 11 buses, 2 hrs., Levy School Bus Company 10 buses, 2 hrs., North PennSchool District 42 buses, 2 hrs., Upper Merion School District 43 buses, 2 hrs.

134 The ETE shows on pg. A1-29, 3039 persons who are transport dependent for the entire EPZ based upon the Energy Consultants' survey data. The table shows 95 buses required, and 85 ambulances at 2 persons per ambulance.

135 The Chester County Analysis Area 12 (pg. 6-6 Appl. Exhb. E-67 ETE) evacuation time estimate for a winter weekday fair weather scenario is 4 hours, 30 minutes. This time is governed by the capacity constraints present along Rt. 113 southbound in West Pikeland. Capacity limitations at this location also given the summer weekend case.

136 On pg. 6-7 of the ETE is indicated the evacuation estimate for Berks County. The Table 6.1 on pg. 6-2 shows a summer weekend estimate of 2 hours, 45 minutes and a winter weekday estimate of 4 hours, 5 minutes. Page 6-7 indicates that this winter weekday condition is governed by roadway capacity limitations along Routes 73 and 662 northbound in Oley Township.

137 LEA Exhb. E-40, which is a section from Draft 6 of the Chester County RERP indicates an estimated figure for persons without transportation in Phoenixville of 2269 persons, which is calculated from 876 households with no vehicle available x 2.59 persons (which is a U.S. Census 1980 figure for Phoenixville). These numbers were taken from the 1980 U.S. Census. Draft 10 of the Chester County Plan (Chester Co./Comm. Exhb E-1) figure of 308 persons for Phoenixville (page I-2-1). For all Chester County, Draft 10 shows on page I-2-1 a total of 1225 persons needing 38 buses (40 persons per bus) as determined from the survey results, as opposed to 3812 persons needing 101 buses as determined by the 1980 U.S. Census estimates and listed on page I-2-1 of the Draft 6 Chester County Plan (a selection of which is marked LEA Exhb. E-40).

138 LEA Exhb. E-42, which is an excerpt from Draft H of the Rottstown Borough Radiological Emergency Response Plan, lists on page G-1 that there are 4175 residents who require assistance in the event of evacuation. A footnote indicated that this is an estimate based on 1980 U.S. Census data. Applicants Exhb. E-17 has replaced this figure with a number of 605 based on the results of a survey sent out using utility bill lists, according to Mr. Bigelow, the Montgomery County Emergency Coordinator.

139 Robert Bradshaw of Energy Consults testified that the difference between the survey results for the number of transport dependent individuals and the U.S. Census estimates is explained because "Many residents did not request assistance even if they had no 'personal' transportation because other private transportation was available to them through friends, neighbors, or relatives. The survey data supports this interpretation of the difference between the census and the actual survey data on available transportation in that the largest differences were in urban areas where more friends, neighbors or relatives would live in close proximity. In less populated areas, the survey results and census estimates are comparable." (Bradshaw ff TR 17,191 at page 19)

However, the actual data does not support this. For instance, for Phoenixville the difference between the U.S. Census and the survey is (2269-308), or approximately 2000 people. The total population for Phoenixville is 14,165 (Appl. Exhb. E-67 page A1-8) If one subtracts from that the people without cars, whether they take the bus or ride with others, you have about 12,000 people, or at 3 persons per vehicle, 4000 cars for the borough. Now Mr. Bradshaw's position that in a more urban area people didn't answer the survey because friends and neighbors who live in close proximity could give them rides means that those 2000 people needing a ride would be looking to some 4000 other cars for a ride.

Those 4000 cars are assumed to already have an average of 3 riders per car. Given the tendency of families to evacuate together as a family unit, and whatever the tendency is for people not to have two cars in more urban areas, the problem with Mr. Bradshaw's theory becomes more clear.

140 A similar analysis can be made for Bottstown where a total population of 22,729 less all those without personal transportation (source U.S. Census 1960), whether they intend to get a ride with a neighbor or take a bus, that is, 4175 persons, leaves about 18,500 people in households with cars. At 3 persons per car that comes out to 6,200 cars. Of the 4175 persons in households without cars, the survey indicated 605 who need bus transportation. That leaves about 3600 who need a ride from friends and neighbors in close proximity. But there are only 6200 cars, already with an average of 3 people per car, unless families take multiple vehicles, which is not a planning assumption, even in areas less urban and more likely to have multiple vehicles.

And again, the problem comes up of splitting up families within the 3600 who need a ride in order to find room in cars with an average of 3 persons each. The issue of valuables and pets could make things worse, as does the issue of the % who leave at 30-60, 60-90 minute, etc.

Of course, one could hypothesize that people would be soliciting rides from friends and relatives somewhat out of town, but that is counter to Mr. Bradshaw's reason why urban people are more able to get rides, and, of course, travel time and traffic problems for people to come into town to pick up their relatives and friends.

141 Mr. Bradshaw's other point at page 19 of his prefiled testimony that "In any event, utilizing the vehicle demand data associated with the population figures from the 1980 U.S. Census estimates would not affect the evacuation time estimates", can similarly be analyzed using basic information in evidence before this Board. (Bradshaw f.f. TR 17, 191, at page 19)

First of all, if 101 buses for Chester County are needed instead of the 38 now assigned, due to the difference in the use of Census estimates instead of the survey results, either more bus resources must be found or the one-lift principle abandoned.

142 Certainly, if a multi-lift approach is used, a tendency for delays starts to happen. Drivers must complete one lift, probably for schools, be notified, return to a transportation staging area, receive a strip map, perhaps brief instruction in their use and then travel to the more urban areas where most of the transport dependent tend to live, go to a pick up point and load. (Bradshaw, All of this probably at a later and more congested point in an evacuation scenario, than in a relatively prompt one-lift school evacuation situation.

143 Annex I of the MontCo plan Appl. Exhb. E-3 has on the tables beginning I-2-5 a time specific to the individual bus provider having his units available to mobilize, including drivers (Bradshaw, TR 17,250, Klimm TR 17,260). Mr. Bradshaw was incorrect when he testified on TR 17,348 that verification of the transport dependent lists occurred during the July 25 and November 20 exercises when municipalities contacted individuals listed as transport dependent to update their status. Obviously one cannot determine how many people are not on a list who should be, by calling those who returned a survey and are on a list.

144 The last vehicle to enter the slowest evacuation corridor in Montgomery County on a winter weekday would exit the EPZ at 4 hours, 50 minutes or T=290, that is 290 minutes following notification that vehicle would also be the last to leave the EPZ since the Montgomery County Analysis Area is the critical area with 363 county line and the turnpike ramps being the key capacity limitation (Appl. Exhb. E-67 ETE pg. 6-7, 6-8) Now since all permanent residents associated vehicles enter the network from 30-150 minutes including buses for the transport dependent which tend to enter the network towards the end of that time frame (Klimm, TR 17,262), the last car (or perhaps bus) to enter the network, does so at 150 minutes after notification and takes until T=290 minutes winter weekday to exit the EPZ as the last vehicle to leave. That takes 140 minutes or 2 hours 20 minutes to travel perhaps from somewhere in Upper Providence to the Schuylkill River border of the EPZ. As indicated in finding , despite the depiction in Appl. 1-4 or Appl. 1-7 of the Evacuation Time Estimate Queuing and Traffic congestion must still exist on that county line expressway, Rt. 202, Rt. 76, Rt. 276 corridor because of ramp restrictions (ETE pg. 6-8) even though all traffic left on that corridor is only from the EPZ and the last vehicle to enter any evacuation route did so at T=150 minutes 2 hours 20 minutes before! Perhaps this can be better understood by calculating that the roughly 10,000 vehicles using that corridor could form a queue of 20 ft x 10,000 or 200,000 ft. long (5280) or

145 The evacuation route in Upper Merion Township comes down what is called the Pottstown or Countyline Expressway to the interchange with Route 202 Northbound. It takes 202 Northbound to the Schuylkill Expressway extension. Evacuees will then pick up the Schuylkill Expressway Westbound to the Pennsylvania Turnpike, which they will enter, and then proceed eastward on the Turnpike. The turn from the Countyline (or Pottstown) Expressway onto Route 202 is an interchange ramp of approximately a 270 degree turn. There is a similar 270 degree turn from 202 onto the Schuylkill Expressway. Route 202 and the Expressway are very high traffic volume roadways at those locations within Upper Merion Township. They handle approximately 60,000 vehicles per day. (Wagenmann TR 17,450). " The Schuylkill Expressway ramp is a clover leaf style ramp so therefore traffic that would be entering off of Route 202 Northbound to pick up the Schuylkill Expressway Westbound or the Turnpike would be crossing or have to cross the path of traffic that was exiting the Expressway Westbound to pick up the off ramp for Route 202 Southbound." It is a highly congested area and there are frequent accidents. Cars have to slow down and the ramps are single lane on and single lane off. (Wagenmann TR 17,451)

146 Route 202 handles approximately 60,000 + vehicles per day. That would be in both directions. (Wagenmann TR 17,468)

Mr. Wagenmann describes at TR 17,469- TR 17,470 lines 10 through line 23, the kinds of day to day traffic information available to Upper Merion Township, which is the basis for charts in the Upper Merion Township Wide Traffic Study (marked as LEA Exhb. E-56)

147 Dr. Vutz, township supervisor and emergency management director of Schuylkill Township participated in both the July 25, 1984 and November 20, 1984 drills, as did his township. (Vutz. TR 14,485)
It takes on the order of several hours to clear Schuylkill Township roads after a snow storm. Part of the Schuylkill Township situation in normal snowstorms is aggravated by the fact that main roads are done by PennDOT and PennDOT typically will come in a day after the snow storm. (Vutz TR 14,519)

148 Valley Forge National Park possibly will provide traffic control at other locations, possibly Routes 23 and 363, if requested by the counties involved. (Fewlass TR 14,567)

Valley Forge National Park has agreed to man the intersection of Route 23 and Route 252 and direct traffic in the event of a Limerick evacuation. The Park personnel manning that point will allow park traffic that has been notified at the alert stage to proceed on 23 west or 252 south if that can be done without causing tie-ups or additional problems. (Fewlass TR 14,697)

On a normal day, Valley Forge Park usually has three field park rangers and a dispatcher. They would be the primary people to be used for alerting park visitors in various areas of the park. The park has a permanent staff of 50 people who could be utilized for either traffic control or for notifying people. "The majority of them are maintenance personnel, some office personnel, some interpreters, and some rangers." (Fewlass TR 14,698)

149 On February 10, 1984 Mr. Fewlass was contacted for the first and only time by John Cunningham of (717) 236-0031 who identified himself as a consultant working for the Limerick Nuclear ^{plant} Paln. At that time Chief Fewlass was asked what park facilities lay on that side of the river, and what development was proposed by the park within that area. Mr. Cunningham also asked if there were any potential shelters in the area. (Fewlass TR 14,695)

150 There is no listing in Applicants Exhb. E-67 the HMM Time Estimate Study of a population or vehicle demand for Zern's Market on Friday and Saturday in Douglas Township, Montgomery County.

151 The completion of the Pottstown Expressway is scheduled for 1986. The so-called Phoenixville Connector to that Expressway is scheduled for the year 2000. It is the opinion of Dr. John Lukacs, 15-year member and former chairman (4 years) of the Schuylkill Township Planning Commission, that the completion of the two projects would, at best, stabilize the present situation because of the existing and projected road network in Schuylkill Township and perhaps the entire southern segment of the EPZ.

(John Lukacs, ff. TR 14,774, page 2)

152 There has been much growth since 1970 east and south of Schuylkill Township, especially within the Great Valley Industrial Complex and the Route 202 corridor, whereas Schuylkill Township and Phoenixville have not increased significantly. But even in this way, the Township road system is already overcrowded, including off-peak hours, a situation recognized by the School Board and the entire school system. (John Lukacs, ff. TR 14,774, page 2)

153 The evacuation route in Upper Merion Township cores down what is called the Pottstown or Countyline Expressway to the interchange with Route 202 Northbound. It takes 202 Northbound to the Schuylkill Expressway extension. Evacuees will then pick up the Schuylkill Expressway Westbound to the Pennsylvania Turnpike, which they will enter, and then proceed eastward on the Turnpike. The turn from the Countyline (or Pottstown) Expressway onto Route 202 is an interchange ramp of approximately a 270 degree turn. There is a similar 270 degree turn from 202 onto the Schuylkill Expressway. Route 202 at the Expressway are very high traffic volume roadways at those locations within Upper Merion Township. They handle approximately 60,000 vehicles per day. (Wagenmann TR 17,450). " The Schuylkill Expressway ramp is a clover leaf style ramp so therefore traffic that would be entering off of Route 202 Northbound to pick up the Schuylkill Expressway Westbound or the Turnpike would be crossing or have to cross the path of traffic that was exiting the Expressway Westbound to pick up the off ramp for Route 202 Southbound." It is a highly congested area and there are frequent accidents. Cars have to slow down and the ramps are single lane on and single lane off. (Wagenmann TR 17,451)

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155.1 Most important to the present state of traffic planning is the fact that the Hmm ETE does not in fact reflect the traffic control arrangements assumed at the present oversimplified stage of planning in the Valley Forge area. At transcript pg 13865 it is clear from Mr. Klimm's testimony, that there are in fact two interchange ramps modelled in the simulation although there is one permitted movement onto route 202 north from that link# from node 435 and node 113. According to other testimony in this record those ramps are one lane, and we can see here a capacity of 966 capacity. However, two movements are allowed here one to node 405 and one to node 503. That double capacity is essential because the almost 10,000 cars cannot be handled in the five hours with a one ramp capacity of 966. However the problem is, and this can be verified from these tables maps and lists in Appendix 10 and Appendix 11, another movement onto another ramp. In so far as these less obvious alternatives although they work for the computer simulation, may in fact conflict with the traffic control principles as described by Dr Urbanik. That is, what appears to be true in this case that the only other ramp capacity available is that for 202 east (Applicants Ex E 192) which route would in fact conflict as the Turnpike one did as per Dr Urbanik's discussion, with another major evacuation route.

156 Ad hoc and informal emergency planning arrangements could be positively dangerous to both EPZ and non-EPZ traffic. Any policies to be implemented should be written in a consistent format, and reviewed by relevant authorities for adequacy. Valley Forge Park and Upper Merion Township should not be relied upon to fulfill traffic control functions for EPZ traffic which could easily be beyond their time and manpower capabilities, given a congested and disoriented traffic population of their own whose normal routes have been blocked off to all but EPZ traffic (Routes 202, 76, 363, County Line Expressway). Upper Merion and Valley Forge Park must have an unmet needs mechanism as complete as that of EPZ municipalities. Communications should be fully compatible, and all personnel involved must be fully aware of the significance of what is done in Valley Forge Park and Upper Merion to the feasibility of an EPZ evacuation.

157 Furthermore, if part of the solution to Valley Forge traffic problems is to shift part of the potential traffic from Route 23 to Route 29 for instance, then the ETE should fully analyze this and the townships to receive this added traffic (Charlestown, for instance, and Tredyffrin should be integrated into any new traffic flow arrangement. Route 202, which is used in both its North and South directions as parts of major evacuation corridors, will have to be controlled in the same manner as Dr. Urbanik suggested for the Pennsylvania Turnpike).

158 Implicit in HMM's and Mr. Klimm's assumption that there would be 0 flow on Routes 202, 76, 276, and the 363-County Line Expressway is the kind of traffic control suggested by Dr. Urbanik for the Pennsylvania Turnpike. That is, it is not enough to control a few entrance ramps within 30 minutes after notification and expect the roadways to be clear of non-EPZ traffic by the time

159 Based upon a site-specific review of the Limerick EPZ which consisted of driving the principal roadways throughout the entire EPZ and some of the areas beyond the EPZ, including those that were indicated as problem areas in the LEA-24/FOE-1 contention, (TR 19,207 line 15), Dr. Urbanik concluded that one could develop strategic traffic control points beyond the EPZ to assure that the traffic problem was manageable (TR 19,208). The need for traffic control would be in the area towards the south and especially to the east as the area becomes more urban in character. Dr. Urbanik doesn't see the total number of traffic and access control points as being "as significant as perhaps the number in the EPZ, but that's speculation," but testified that. You would have to sit down and count up the numbers. You know, I wouldn't want to categorically say that you would have to have that many points, but I would say so." (Urbanik TR 19,208 line 22-19,209 line 3) And again at TR 19,281 in response to questions by Judge Cole (quote) and quote 19,281 at line 24

EPZ traffic needs to use the full capacity of these evacuation corridors. There are several problems here. One is the amount of time required for non-EPZ, but pre-existing flow on these corridors to clear out before the EPZ traffic needs the capacity. This process of clearing out only begins once traffic control is established, and depending on the time of day and the choices allowed such non-EPZ traffic vis-a-vis its normal destinations, could be a significant problem affecting the evacuation time estimates beyond the 10-20% error implicit in its methodology. Secondly, there is the kind of ongoing downstream access of non-EPZ traffic from entrances far away from the few assumed traffic control points on entrances near the EPZ. An example of this is the Pennsylvania Turnpike situation of concern to Dr. Urbanik, but the instances of 202 North and South, the Schuylkill Expressway and the County Line Expressway represent a parallel problem. Thirdly, a lack of complete and integrated traffic planning outside the EPZ results in poor choices which would affect overall plan workability in unexpected ways. For example, the location of a transportation staging area at the King of Prussia Plaza if 100,000-200,000 shoppers and workers in the area were beginning to enter the^{se} roads of Upper Merion Township, which have not been closed to them and reserved for EPZ traffic, could seriously affect the feasibility of evacuation of the school or transport-dependent population dependent on buses to be processed through that area. Shutting down major interstate routes and thereby causing congestion at the access controlled ramps could delay resources from ever reaching, let alone leaving, the King of Prussia Plaza staging area in a time range consistent with the emergency plans and evacuation time estimates. Finally, at some point, traffic control requires more resources than one officer,

PLAN ADOPTION

Counties, Municipalities and School
Districts Within the Limerick EPZ.

LEA-1

The Risk Counties, Municipalities, School Districts, and Institutions haven't promulgated or adopted final radiological emergency response plans, nor have they approved and adopted plans drawn up for them by Energy Consultants, Inc., a Harrisburg firm hired by Philadelphia Electric Company. There is no reasonable assurance that the present state of planning is predictive of final approval, or that the plans are capable of being implemented.

Emergency Planning Requirements in the
Commonwealth of Pennsylvania

160. It is well recognized and even conceded by Applicants Emergency Planners that local government participation, cooperation, and compliance is indispensable to the workability of any RERP. In fact, the whole legal planning mechanism, as set forth in P.L. 1332 vests primary legal authority and responsibility in the local level of government.

160-1 Title 35, Appendix, Pennsylvania Consolidated Statutes, Health and Safety, Part V, Public Law 1322, or the Pennsylvania Emergency Management Services Act, as incorporated by judicial notice at Tr 17,457, contains language establishing the legal authorities as well as responsibilities of municipalities in the area of emergency planning.

161 The definition of "political subdivision" in §7102 of PL 1332 is "(A)ny county, city, borough, incorporated town or township." Thus a county and a municipality are grouped together under this term. A "local organization" is defined as "a local emergency management organization." A "local emergency" is defined as

The condition declared by the local governing body when in their judgment the threat or actual occurrence of a disaster is or threatens to be of sufficient severity and magnitude to warrant coordinated local government action to prevent or alleviate the damage, loss, hardship or suffering threatened or caused thereby.

Also, the Governor may declare a local emergency "...upon petition of the local governing body when he deems that threat or actual occurrence of a disaster to be of sufficient severity and magnitude to warrant coordinated local government action...".

162 §7103 states that the purposes of this part are to "(4) Clarify and strengthen the roles of the Governor, Commonwealth agencies and local government in prevention of, preparation for, response to and recovery from disasters."

163 The general authority of political subdivisions is outlined in §7501. Subsection 7501 (a) authorizes local emergency management organizations in accordance with the plan and program of PEMA, saying,

Each local organization shall have the responsibility for emergency management, response, and recovery within the territorial limits of the political subdivision within which it is organized and, in addition, shall conduct such services outside of its jurisdictional limits as may be required under this part.

Subsection 7501(b) on the declaration of emergencies says,

A local disaster emergency may be declared by the governing body of a political subdivision upon finding a disaster has occurred or is imminent. The governing body of a political subdivision may authorize the mayor or other chief executive officer to declare a local disaster emergency subject to ratification by the governing body. The declaration shall not be continued or renewed for a period in excess of seven days except by or with the consent of the governing body of the political subdivision. . . . The effect of a declaration of a local disaster emergency is to activate the response and recovery aspects of any and all applicable local emergency management plans and to authorize the furnishing of aid and assistance thereunder.

Clearly, the governing body of a political subdivision, even if it chooses to authorize a mayor or other chief officer, such as a township manager, to declare a local emergency and thereby activate the "applicable local emergency plans" still retains the ultimate authority which it can choose to exercise and must exercise for declaration of emergencies in excess of seven days regardless of whether a mayor, for instance, has been previously authorized to declare states of local emergency.

164 §7502, "Local Coordinators of Emergency Management"
under subsection 7502(a) states,

Each local organization of emergency management shall have a coordinator who shall be responsible for the planning, administration and operation of the local organization subject to the direction and control of the executive officer or governing body.

§7504, "Coordination, assistance and mutual aid,"
under subsection 7504(a) states,

Direction of disaster emergency management services is the responsibility of the lowest level affected. When two or more political subdivisions within a county are affected, the county organization shall exercise responsibility for coordination and support to the area of operations. When two or more counties are involved, coordination shall be provided by the agency (PEMA) or by area organizations established by the agency.

Subsection 7504(b) continues,

When all appropriate locally available forces and resources are fully committed by the affected political subdivision, assistance from a higher level of government shall be provided.

Subsection 7504(c) adds,

County and local coordinators of emergency management shall develop mutual aid agreements with adjacent political subdivision for reciprocal emergency assistance. The agreements shall be consistent with the plans and programs of the agency. (PEMA)

But, in subsection 7504(e) the statute requires that

Mutual aid agreements shall be ratified by the governing bodies of the political subdivisions involved.

165 So, in fact, the governing bodies of municipalities retain the authority to approve or disapprove proposed mutual aid agreements under development by local municipal coordinators.

166 §7512 of PL 1332, "Law applicable to local organizations," at subsection 7512(b) states:

No purchase or purchases shall be made, no contract entered into and no expenses incurred by any local organization which involves the payment of more than \$25 out of the treasury of any second class township unless the proposed expenditure has been approved in writing by the township supervisors.

Additionally, subsection 7512(a) states:

Where the jurisdiction of the local organization is coterminous with the political subdivision making an appropriation for the payment of the expenses, the local organization shall be deemed an agency, board or commission of the political subdivision, subject to all of the laws governing the making of contracts or purchases, the employment of persons or otherwise incurring financial obligations which apply to the political subdivision.

Of course, in light of the exigencies of an ongoing emergency situation,

Each political subdivision "... is authorized pursuant to §7301(c) (relating to general authority of Governor) to exercise the powers vested under this section...without regard to time-consuming procedures and formalities prescribed by law (excepting mandatory constitutional requirements) pertaining to the performance of public work, entering into contracts, the incurring of obligations..." §7501(d)

But again it is the political subdivision (which includes municipalities) who "exercise the powers". Subsections 7512(a) and 7512(b) above refer to the set-up of the local emergency organizations prior to emergencies.

167 In view of the specific grant of authority by the Commonwealth to local government to involve and manage emergency planning procedures, it is clear that municipal approval of the workability of its own PEPP is fundamental and mandatory before the county can certify its own plan as adequate and implementable.

168 At the time that the FEMA witnesses testified, there had been no review of any other additional Limerick plans submitted to their office. (Asher TR 20,330) FEMA did not receive for review purposes any of the up to date RERP's offered into evidence as Applicant's Exhibits in this proceeding, prior to receiving the NRC Dec. 26, 1984 letter and attachments (contained in LEA Exhb E-71). FEMA did receive a copy of each of the 3 risk county RERP's one week prior to that. (Asher TR 20,304)

169 In Mr Kinard's opinion, the amount of weight to be given to FEMA's testimony is something for the Board to decide. (Asher TR 20,330) FEMA is not a regulatory agency. They review and evaluate plans based on the criteria of NUREG 0654. (Asher TR 20,319) It is obvious that FEMA has spent a considerable amount of time reviewing various gaps of the Limerick Radiological Emergency Response Plans, at least based on the documents in evidence. (Judge Cole TR 20,328)

170 Mr Asher testified that very possibly many of FEMA's answers would be changed based upon information that is currently available. (Asher TR 20,330) He agreed with Judge Cole that he would consider radiological emergency response plans as moving targets, because the plans are always subject to change. FEMA believes that significant revisions of those plans require a complete review. Insignificant additions to the plans are acceptable after a cursory review of some sort. (Asher TR 20,327-328)

171 Mr. Kinard stated that from the testimony that he heard it is apparent that the process is moving in the direction of the adoption of these plans, although he was unable to provide a more specific answer regarding whether or not based on the testimony he heard, whether he could predict final adoption of radiological emergency response plans for municipalities, school districts, and counties within the Limerick EPZ. (Kinard TP 20,302)

172 Mr. Kinard stated that it is incumbent upon himself as an emergency planner and as a representative of FEMA to obtain information through proper channels relating to the status of planning with respect to the Limerick EPZ. While this response was provided in regard to the status of unmet staffing needs at the municipal level, Mr. Kinard also meant it in a general sense. (Kinard TR 20,308)

173 Mr. Hippert stated that it was his understanding that the draft plans referred to in paragraph 3 of his prefiled testimony on LEA-1 are the same drafts upon which the FEMA testimony in this proceeding is based. (Hippert TR 19,594)

174 FEMA has not received copies of the RERP's received into evidence in this proceeding, although counsel for the Commonwealth has. Mr. Hippert stated that "it is rather a remote question since the Commonwealth will not take any action on plans unless they are submitted to us from the municipalities and the school districts through the counties. We received the latest drafts of the Berks and Montgomery County plans sometime during October and we are reviewing them now." (Hippert TR 19,507)

175 PEMA is not currently conducting a review of these plans (Applicant's Exhibits) because PEMA has not received the plans from the municipalities, school districts or counties, and in some instances they are reluctant to send them to PEMA. Mr. Hippert testified that we didn't know when PEMA would get them. (Hippert TR 19,516-19,518) At the time that Mr. Hippert testified he stated that PEMA had not reviewed the plans to determine whether or not they were adequate and capable of being implemented. (Hippert TR 19,518, TR 19,595-19,596)

176 PEMA has requested FEMA to indicate that its supplemental interim finding is not to be considered as an informal review requested by PEMA. (Comm Exhb E-10) PEMA needs to be very careful within the Commonwealth, and has to walk a very thin line with the counties and municipalities. When PEMA submitted the plans to FEMA and the intervenors in the fall of 1983, they did so with the understanding that the municipalities and school districts were in full accord with the fact that they were being submitted for informal review, and that they had no objections to it. Since that time PEMA has had considerable flack as to why some of these plans were submitted at that time. (Hippert TR 19,511) Mr. Hippert explained, "we are simply trying to walk the fence with the municipalities and the school districts so that they know we have not submitted the plans to FEMA for any type of review." (Hippert TR 19,573)

177 Mr. Hippert testified that because Pennsylvania is a Commonwealth, PEMA walks on a rather tight line with regard to plan review. The plans must come from the municipalities and school districts to the counties and from the counties they are to be transmitted to PEMA for review. That has not been done since the fall of 1983. According to Mr. Hippert, PEMA has not been asked, requested, or anything else by the municipalities or school districts

to review their plans. Without that request, PEMA has no authority to do it. (Hippert TR 19,596) PEMA received the Berks and Montgomery County plans because Mr. Hippert specifically asked for them in preparation for the testimony in this hearing (Hippert TR 19,596)

178 The counties consider that the plans are still in a draft stage and subject to changes, and they are not yet ready to send them to PEMA for review. (Hippert TR 19,519) PEMA has at times asked for the balance of the draft plans, but the counties are reluctant to send the plans in without the approval of the municipalities, the same as PEMA is. Some of the municipalities consider the plans in draft form, not their plans and various other problems that they have mentioned. That is the reason according to Mr. Hippert (Hippert TR 19,597)

179 Since December 1983 PEMA has had numerous letters from school districts and municipalities bringing up the issue of why these plans were submitted in 1983 without their expressed approval. This has also been brought up in public meetings that Mr. Hippert attended. He stated, "When we submitted the plans in 1983, we were under what we now find is the erroneous assumption that they had all been informed what we were doing. So here again, we are being very cautious not to submit anything that has not come through the proper channels." (Hippert TR 19,597-19,598)

180 Mr. Hippert stated that at the time that he testified, PEMA was not in a position to certify whether or not any of the plans that Applicant has identified and submitted into evidence as E-1 through E-61 are adequate and capable of being implemented. (Hippert TR 19,631, Hippert TR 19,636)

181 PEMA has not made any response to the Class A deficiencies identified in the November 20th exercise by FEMA (FEMA Exhb E-5) (Taylor TR 19,523)

102 Mr. Hippert included a series of questions at the beginning of each portion of the PEMA testimony, which are a restatement of what he believes the contention to be. He thinks that the questions included in his testimony would give him a basis of what to look for when he reviews the county plans. He has them written down on another piece of paper, for that matter, and said that he certainly did not intend to throw them in the waste basket. (Hippert TR 19,633-19,634) He acknowledged that some of the questions are unanswered by his testimony. (Hippert TR 19, 634)

103 Mr. Bigelow was appointed Emergency Coordinator for Montgomery County on January 9, 1984. At the time he testified he had served in that position for approximately 10 months. He was subpoenaed as a witness in this proceeding by Philadelphia Electric Company, after the Montgomery County Commissioners declined to present him as part of the Commonwealth panel, unlike the County Coordinators from Berks and Chester Counties. (Bigelow TR 14,152, TR 14,156; Connor TR 12,733). The Montgomery County Office of Emergency Preparedness is comprised of 3 staff and a clerical person. (Bigelow TR 14,174).

104 As of December 3, 1984 he had not discussed Draft 7 of the Montgomery County RERP (Appl. Exhb. E-3) in any regard with the County Commissioners. (Bigelow TR 14,166). He testified that there had been a meeting with the Commissioners regarding the status of the plans and how Mr. Bigelow was working on them. According to Mr. Bigelow, Draft 6 was discussed with the Commissioners in what he referred to as a general briefing. The early part of the meeting involved phase one-type training that had been offered to the municipalities and school districts. At a separate meeting with the Bureau of Corrections, there was a briefing on the status of plans for the State Correctional Institute at Graterford. He could not think of any other specifics of the Montgomery County RERP that he had presented and discussed with the commissioners. (Bigelow TR 14,166-14,168).

185 According to Mr. Bigelow, a lot of the information in the Montgomery County RERP was developed by Energy Consultants, as well as by his staff. He stated that Draft #7 (Appl. Exhb. E-3) was getting to the point where he is going to have a workable plan, although it is not considered a final plan for Montgomery County because it is still being reviewed, and everything is flexible and subject to change. (Bigelow TR 14,169-14,170). Although he stated that in his opinion it is a workable plan, he has not made a recommendation to the Commissioners that they adopt and approve Draft #7 (Appl. Exhb. E-3) because he had not discussed it with his staff. He could not provide an answer whether there were other reasons for not having yet made such a recommendation without discussing the matter with his staff. (Bigelow TR 14,173-14,174).

186 With regard to county plans, none of the three risk or two support (Bucks and Lehigh) County plans has been formally accepted by its respective Board of Commissioners. (Hippert, ff. TR 19,498, page 3, par. 8).

187 Based upon the draft plans submitted to PEMA in the fall of 1983, Mr. Hippert testified that no municipal or school district plans have been accepted, approved or adopted at the local level. Any updated report on the adoption status of these plans must come from the risk counties in their role as coordinator and initial reviewer of the respective municipal and school district plans prior to transmittal by the counties to PEMA. (Hippert ff. TR 19,498, page 3, par. 7).

108 Mary Catherine Lowery, emergency coordinator for Union Township, testified to certain inconsistencies between the master list of data taken from the transportation needs survey and the original survey return forms themselves which she received from Energy Consultants in October 1984. (Lowery TR 18,695-697) She was told by Bob Reber, EMC for Berks County, that there was a plan to do a whole new survey in the next few months but later told by a Mr. Seasholtz of Philadelphia Electric that she shouldn't count on Philadelphia Electric to redo the survey in the near future. (Lowery TR 18,698-700) Union Township has eight volunteers at this point. On the November 20th exercise there were five. Both numbers include the three supervisors. One out of three proposed PECO volunteers is included in this number, the other two didn't show up for training or meetings. (Lowery TR 18,703) At the present time, the Union Township Fire Company of Culptown has been unwilling to identify volunteers or make a commitment to do route alerting, notification of the hearing impaired or traffic control. (Lowery TR 18,707) Ms. Lowery estimates her needs to implement the plan at forty-two. (Lowery TR 18,704) She has told Energy Consultants but Draft 6 doesn't list them. (Lowery TR 18,755) Mr. Seasholtz of Philadelphia Electric is the person designated by PECO to call Ms. Lowery and those in her township. (Lowery TR 18,725) Ms. Lowery and her Board of Supervisors have solicited volunteers through letters to organizations and contacting newspapers. (Lowery TR 18,780)

At the Draft 1 or 2 stage of the Union Township RCRP, Ms. Lowery and the supervisors decided at a meeting to request the inclusion of all of Union Township in the EPZ. But they were told by Energy Consultants that there was a legal problem that if the governor declared a state of emergency that would only cover ten miles from Limerick and that if the township would want to move people beyond ten miles, then it would not be covered by disaster funding. The Supervisors did not want to be responsible for that liability. (Lowery TR 18,764) (see 134)

109

The HMM ETE (Applicants Exhb. E-67) lists in App.6 Transient Recreational Population + Vehicle Estimates Population + Vehicle Demand Totals for French Creek State Park which is indicated as being in Union Township at a distance from 7-8 miles in a west sector from Limerick. The population listed is winter weekday and 3655 summer weekend and the vehicle demand is winter and approx. 1000 total for summer. Hopewell Village National Historical Park is listed as being 9-10 miles from Limerick with a winter weekday population of 1600 people and 640 vehicles, and a summer weekend population of 5000 people and 2000 vehicles. It is also located in Union Township. (Appl. Exhb. E-67, App. 6 page A6-2)

However, the June 1983 Evacuation Plan Map prepared for PEMA and incorporated in Comm. Exhb. E-1 (also identified as LEA Exhb. E-16) shows much of French Creek Park and Hopewell Village to be outside the EPZ.

190

Dr. Michael Giamo is serving his second six year term as a supervisor of Skippack Township. He has just retired from the Philadelphia School System where he was Director of Music for the entire city's two hundred eighty schools. Dr. Giamo was authorized by the Chairman of the Board of Supervisors to testify. (Giamo TR 19,131) LEA-57 is a letter written to the Pennsylvania Management Agency at the request of the Board of Supervisors of Skippack Township dated June 22, 1984. The letter states the Township's concerns. Still of special concern to the Supervisors of Skippack is the up to three thousand residents of the Graterford Penitentiary in the township who would need sixty buses to be evacuated, plus high security. (Giamo TR 19,073)

191

The concern expressed in that letter (LEA-57) about the inability of the township to provide adequate means to provide notice and transportation to transit-dependent is still unresolved at this time. The problem is not limited to the issue of an unmet need for buses or ambulances, but is tied in with the whole evacuation plan, which Skippack Township has "not yet formulated." (Giamo TR 19,086)

192 Dr. Giamo is not satisfied that an unmet need passed on to the County is thereby to be automatically assumed as met. (Giamo TR 19,110)

193 There has been a lack of coordination and dialogue among officials of the various private and public schools and Ursinus College, as well as among the various municipalities and county and state officials with respect to evacuation, traffic and other matters. (Giamo TR 19,113)

194 Dr. Giamo would be relieved if he had confidence that a five hour evacuation time estimate was fact. He was not sure that a sheltering option would alleviate his concerns. (Giamo TR 19,117)

195 It seemed to Dr. Giamo who attended both the July 25, 1984 and November 20, 1984 exercises in Skippack Township that the "same thing was done the second time". Dr. Giamo did not understand what made the first Skippack drill be graded unsatisfactory and the second given complements by PEMA (Giamo TR 19,120) He doesn't know whether the staff is currently in an adequate state of readiness to respond to a radiological emergency. (Giamo TR 19,120) Dr. Giamo believes that experiencing and doing it is a vital part of learning and that the drills should have been more functional "rather than just sit in the hall and listen to this". For instance, traffic control should be practiced. (Giamo TR 19,122) Skippack Township will comply with state law. (Giamo TR 19,128) Because of its confidentiality, Dr. Giamo was not able to discuss the Graterford Prison plan and his related concerns. (Giamo TR 13,138)

196 Dr. Giamo considered the two exercises (July 25 and November 20) to have been training sessions (Giamo TR 19,142) and is apparantly unaware of any regulatory or legal implications others may be trying to draw from his township's participations.

197 The Skippack Fire Company will not provide route alerting at the general emergency state. Dr. Giamo is not sure if the fire police, who are firemen as well, are going to perform the traffic control function, and at what stage of alert. (Giamo TR 19,106)

198 Mr. Edmund Skarbeck is president of the Borough of Pottstown and president of the Council of Area Governments which is a group of Upper Pottsgrove, Lower Pottsgrove, West Pottsgrove, North Coventry Township, and the Borough of Pottstown, which tries to coordinate efforts in working toward common goals within the district.

199 There are some reservations on the Council of Area Governments of how the proposed radiological emergency plans will work because "while we have a group of five different municipalities, everybody has a difference of opinion." According to Mr. Skarbeck, the reservations that probably most people in an elected capacity have, is the dependability of the people you are depending on in an emergency situation. "People that are supposed to be doing the job, whether they are going to be there to do the job or not." (Skarbeck TR 17,774)

200 Once Pottstown Borough Council is to review the technical aspects of their plan, and once council is asked to decide what policy it is going to adopt, Mr. Skarbeck is sure that in close cooperation with school systems and borough officials, the Pottstown Borough Council will seek public input and public review before the proposed plan would be considered for adoption.

201 Borough Council of Pottstown has not yet "been privy to" any draft of any of the six plans that were up for review by the emergency

coordinating team. There has been no indication to Mr. Skarbeck of when the EMC would provide copies and ask for review. (Skarbeck TR 17,770)

202 When asked if a chemical spill were to occur requiring evacuation of Pottstown would he feel he could use the Limerick plan to do that, Mr. Skarbeck replied, "Well, I am sure we could, if we had a workable plan that I am not aware of yet." (Skarbeck TR 17,851)

203 Mr. Carroll Mattingly is the Pottstown transportation officer, and the code enforcement and health officer for the Borough of Pottstown. Mr. Mattingly was a career army man and had experience while stationed in Germany with emergency plans set up for the evacuation of dependants and a hospital. (Mattingly TR 17,816)

204 Mr. Mattingly has, based upon his knowledge of the people that he works with as Pottstown code enforcement and health officer, certain concerns about "some of the vehicles that some people drive and how they would get there." "I do have some concerns about breakdowns and panic on the highways." According to Mr. Mattingly, Pottstown is like the hub of a wheel since it is located directly in the center of North Coventry, West Pottsgrove, Upper Pottsgrove and Lower Pottsgrove. "Some of the routes that are being taken out of Pottstown are the same routes that would be picked up by residents of North Coventry and Upper Pottsgrove, going north on Route 100, and what kind of congested area would come in at a later point up the road, I really don't know how some of these would fit together." "It is not hard to get out of our township, but then you are going to other townships and there are other people who are going through, also. Just regular traffic jams is really what I am concerned with and the human element itself is fear of the unknown and what happens with that." (Mattingly TR 17,830-17,873)

205. The Pottstown transportation officer Mr. Mattingly has calculated that he would need nineteen, and ordered twenty buses for the transport-dependant, probably as a safety factor. The current Draft 6 of the Pottstown plan lists sixteen. (Appl. Exh. E-17 pg. 0-1)

206 In checking out some of those listed as needing transportation assistance from the survey results, Mr. Mattingly makes a distinction between screening those needing an ambulance or needing other help as being mobility impaired, and screening the other transport dependant just needing a bus. "I tried to screen out the people that would actually need ambulance transportation or need assistance. But the other people I didn't really screen that out." (Skarbeck TR 17,792 at 19) A number of Pottstown residents who requested ambulance assistance did not actually require it. (Mattingly TR 17,836) Based upon that, Mr. Mattingly does not however conclude anything about the six hundred five listed as just transport dependent, that is not even listed as needing an ambulance or being mobility impaired. Mattingly says, " I would take on the other hand that there were alot of people who didn't even mail it (the survey) in, that may also need the transportation. So I would just have to take the figure that was supplied to me and work from that and also knowing that there may be other people that would be at these bus stops in the event something did happen, that I may have more, alot more, than what has already been stated." (Mattingly TR 17,837)

207 Unmet needs have been identified in the area of transportation.
Four buses and four ambulances are needed. (Waterman TR 18,082)

208 I would definitely not consider Draft 6 a final plan. (Waterman
TR 18,084)

209 Virgil Templeton is a supervisor of Upper Providence Township.
(Templeton TR 18,058)

210 George Waterman is township manager of Upper Providence Township.
(Waterman TR 18,058)

211 John Yeager is Chairman of the Supervisors in East Pikeland Township.
(Yeager TR 18,004)

212 A general population survey could be redone in all three counties (Hippert TR 19,587-88)(Bradshaw TR 16,952, 17,022-23, 17,348) to further identify any special populations not accounted for in the Fall of '83 survey. (Proposed Finding

213 Mr. Hugh Kelly, Chairman of Supervisor, Douglass Township, testified that he felt it would be difficult to get some persons to evacuate in an emergency based on a statement by a farmer in the EPZ who was concerned about his animals. (Kelly TR 18,657).

214 When asked by Applicant if the supervisors from Douglass Township, Mr. Kelly, knew that farmers could re-enter the EPZ to care for their cattle, he responded that he didn't know whether or not any individual is going to do that" and that alot of these farms rely on their children to help with chores. (Kelly TR 18,658).

215 There is an assumption that the USDA farmer lists are being followed up on. PEMA says it is the county's job. (Hippert TR 19,622).

216 PEMA doesn't know to what extent farmers have been trained. (Taylor TR 19,623).

217 Farmers have to identify themselves as farmers to be allowed to re-enter the EPZ. (Reber TR 19,752)(Proposed Finding

218 The USDA list for farmers in Berks County identified 100 farmers (Reber TR 19,757).

219 It was Mr. Deck & Mr. Dunn who worked on the municipal plan development for Energy Consultants (Bradshaw TR 17,287). Mr. Richard Brown is the Chairman of the Lower Providence Board of Supervisors and is a communications technician for American Telegraph and Telephone Company, and is trained in and maintains a telecommunications electronic switching system. He is employed in Pottstown. (Brown TR 18,134). Mr. Harry Miller is the Fire Chief of the Lower Providence Volunteer Fire Company.

220 Mr. Conroe is a trustee of, and an ambulance captain in the Lower Providence Township Squad. He was asked by the Board of Directors of the Lower Providence Community Ambulance to serve as the liaison between the ambulance squad and the township committee working on the plans (Conroe TR 18,138).

221 Lower Providence Township cannot use Fire Company personnel alone to do route alerting since 12 route alerting sectors are designated with 2 persons per sector, and the Fire Company needs 15 people and a field officer just to maintain normal rescue and fire service. (Miller, Tr 18,142)

222 Lower Providence Township has the responsibility of notifying businesses and industry in the township to keep them informed. A local disaster/^{or manmade disaster causes severe disruption} of telephone communications since once the public becomes aware of an emergency, a lot of people start calling one another, and begin to tie up the telephone network to a point where one can no longer draw a dialtone from the local switching center. (Miller TR 18,142).

223 During the time of the Agnes Flood, there were dial tone delays of up to 30 minutes in the area. And that was just high water in Pottstown. There are 3 switching offices in the area, and their equipment was described by Mr. Brown at TR 18,151; Colledgeville, Brimfield Rd. & Pottstown.

224 These telephone problems mean that if someone in the Emergency Operations Center has to use the phone to notify someone, they may have to wait 30 minutes to get a dial tone. This would create a major problem in the implementing of the plan. (Brown TR 18,150).

225 Mr. Rogers, the Lower Providence Emergency Management Coordinator is concerned about the amount of volunteers available at any one time and the number of police available. Presently, Mr. Rogers has indicated that because there were a lot of PECO employee volunteers available at this time, that he can carry out most of the procedures.

226 The Lower Providence Township Chairman, Rick Brown, testified of concerns about the availability of these PECO volunteers "are they just volunteering to move this thing along". (Brown TR 18,153). PECO volunteers are involved in route alerting (Miller, TR 18,156).

227 The ambulance corp of Lower Providence does not have sufficient resources to carry out its assignments to evacuate the non-ambulatory residents of 53 (Conroe TR 18,154). Furthermore, because there is no paying system, ambulance members would have to be notified by telephone, which is difficult under the conditions described of telephone problems.

228 When asked about the County Prison under construction in Lower Providence, Chairman Brown testified that based upon his "knowledge of the problems that Graterford's evacuation plan ran into with local government, I foresee we would have the same problems they ran into, in that no one would let the local officials know what type of evacuation they had planned for the State Penitentiary. And they wanted to know what the plans were, so they could make sure that their plans didn't run into problems with their evacuation routes". And "based on my experience with the County and our problems with the prison, I would say we are going to have a problem with the County's evacuation plan for the county prison." (Brown TR 18,224).

229 Chairman Brown's testimony on PL1332 illuminates the local reality: "they are [mandatory], but a lot of municipalities have not conformed to the law. We also have mandatory guidelines for solid waste which haven't been directed yet. We just don't have the manpower and the staff to do everything that is necessary to do. Solid waste and hazardous waste is one of these things that we have to address along with this. We have some other documents like this, we cannot do everything at once. We are limited in our finances to do all these things". (Brown TR 18.227).

230 Finally, Mr. Brown testified that if the concerns he had mentioned were met (telephone communications, traffic, the county prison, reliability and availability of volunteers, and transportation) that he would not hesitate to recommend adoption of a workable Lower Providence Emergency Plan. (Brown TR 18,228).

231 The part of Valley Forge Park in Lower Providence Township includes a walk-through area along the river, some paths, and a couple of monuments. The Peter Camiel estate there has been purchased by the National Park Service, and includes the house. There are other houses there possibly with renters. The major use of the Lower Providence part of Valley Forge National Park area is recreational - boating, canoeing, hiking. There are some picnic areas. "It is quite a vast area." (Brown Tr 18,168 and TR 18,209). Although Mr. Brown testified that Lower Providence Township would anticipate that anyone in the township for whatever reason would be the township's responsibility, based upon his knowledge of the development of the township plan to date, he does not know whether the Valley Forge Park aspects in Lower Providence have been addressed. (Brown TR 18,172).

232 Lower Providence Township will not approve a plan not believed to be workable. One of the problems Chairman Brown would consider in determining this, is the evacuation route which evacuates the entire township into King of Prussia, which has one of the worst traffic problems or congestion problems in the surrounding area.

233 The evacuation route goes into King of Prussia, and then takes the Turnpike east to Neshaminy (Bucks County). "At work hours that whole area is congested and it is hard to get through that area. (Brown, TR 18,173).

234 The coordination of special facility plans for Eagleville Hospital, St. Gabriel's Hall, and the new 500 bed Montgomery County Prison with the township plan is another problem Chairman Brown wants addressed before adoption. (Brown TR 18,174).

235 The Lower Providence Township would need to use the phone to contact special facilities in the township, plus schools who do not have radio equipment and personnel. (Brown TR 18,195).

236 The contacting of more than the on duty ambulance team is a problem and would rely on the one telephone in the station. (Conroe Tr 18,202).

237 Chairman Brown testified he couldn't read the maps in Appendix 11 of the ETE (Appl. Exhb. E-67) "you need a magnifying glass to read this". (Brown (TR 18,213)).

238 The queueing indicated on map A-11-6 T=180 min. Summer Fair Weather Conditions (Appl. Exhb. E-67) for the Rt. 363 County-line Pottstown Expressway area, appeared to Chairman Brown to be the type of back-up experienced in Lower Providence Township in morning rush hour, before the expressway was opened. "To the same degree, it apparently goes back up Audubon Road to Park Avenue." (Brown TR 18,216). And based upon his experience in day-to-day traffic, Chairman Brown testified that the indicated queueing was of a magnitude too small to indicate accurately evacuation flows which he assumes to be greater than in day-to-day traffic. Both the Applicant's Counsel and Chairman Brown apparently agreed with the following ambiguous question, though for opposite reasons: "You [one] couldn't necessarily compare commuter traffic with evacuation traffic because those flows of traffic wouldn't necessarily have the same origin or destination, isn't that correct?" "That's correct." (Brown TR, 18,218).

239 There is a problem with sending everybody on a designated route out of Lower Providence Township into a bottleneck and they can't go any further, then they are going to back up into the boundaries of the township (which is the EPZ boundary).

240 Chairman Brown is considering a proposal to divide Lower Providence up into sectors and then send people in directions other than directing the whole township into King of Prussia to get onto the Turnpike.

241 Mr. Conroe, the ambulance captain who works in King of Prussia, is of the opinion that evacuating traffic in King of Prussia would cause a gridlock. (Conroe TR 18,178).

242 Chairman Brown was not informed by Mr. Bigelow in his discussions with him regarding transportation that might be provided by the county to Lower Providence in a radiological emergency, that the King of Prussia Plaza had been designated as a transportation staging area where vehicles coming in to assist were supposed to receive their assignments. (Brown TR 18,180). In view, of Mr. Brown's concerns, this omission is significant.

243 Lower Providence is the largest township in the Emergency Planning Zone (Miller TR 18,190). The route alerting sectors are smaller than average but the population is larger. It is in the view of the Fire Chief questionable whether the stand-by PECO volunteers would show up to route alert with loud speakers from private vehicles. (Miller TR 18,190).

244 It was Amity Township's feeling following the July 25th exercise that they would like to add additional staff positions to their organization. A comparison of figures on Table 2-A (Bradshaw, ff. TR 17,191, pg. 5-7) with the chart identified as LEA Exhb. E-37 dated August 27, 1984 show an increase from 14 to 24 staff positions for Amity Township. It is Mr. Bradshaw's testimony that any changes between the 2 tables regarding the number required for municipal emergency operation staff, reflect such a municipal request. (Bradshaw TR 17,225).

245 Mr. Bradshaw derives his knowledge of the number of staff designated in the current draft Schuylkill Township plan, which is not the Appl. Exhb. E-34 Draft 6 plan in evidence in this proceeding, but a "Draft 6 Revised" Schuylkill plan directly from Ron Deck. Mr. Bradshaw did not know from whom Mr. Deck got this information "probably Mr. Vutz?" (Bradshaw TR 17,217).

246 Although South Coventry has not formally transmitted a plan to Mr. Campbell of Chester County, the May 1984 Draft 5 of the South Coventry Plan Applicant's Exhb. E-35 has been submitted as an exhibit in this proceeding because "it is a municipal plan which Energy Consultants has assisted in developing". Mr. Bradshaw doesn't know whether South Coventry had any input into Draft 5 or Draft 4. (Bradshaw TR 17,219).

247 Mr. McGill, the Bucks County Emergency Coordinator cannot approve and adopt the Bucks County Support Plan. Mr. Bradshaw bases his testimony that Bucks County intends to fulfill its support county role on discussion with Mr. McGill, the November 16, 1984 letter from Bucks County and discussions Mr. Bradshaw has had with PECO Vice President, Vince Boyer, relating to Mr. Bradshaw, Mr. Boyer's discussions with John Patten, the Director of PEMA. (Bradshaw TR 17,232).

249 Schuylkill Township (and Phoenixville, indirectly) is in the position of having Valley Forge Park as a sort of cushion between these still largely rural and small-town areas and the huge developments which have included a large generation of traffic in the Valley Forge-King of Prussia region and the Route 202 corridor. Consequently, the Schuylkill Township-Phoenixville area roads are of relatively low capacity and badly overcrowded. County officials and in some cases Courts of the Commonwealth have sympathetically considered this condition during the past few years when it came to decisions involving possible large developments and adding to the traffic on existing roads. (John Lukacs, ff. TR 14,774, page 2)

249 Dr. Vutz, township supervisor and emergency management director of Schuylkill Township participated in both the July 25, 1984 and November 20, 1984 drills, as did his township. (Vutz, TR 14,485)
It takes on the order of several hours to clear Schuylkill Township roads after a snow storm. Part of the Schuylkill Township situation in normal snowstorms is aggravated by the fact that main roads are done by PennDOT and PennDOT typically will come in a day after the snow storm. (Vutz TR 14,519)

250 Valley Forge National Park possibly will provide traffic control at other locations, possibly Routes 23 and 363, if requested by the counties involved. (Fewlass TR 14,567)

251 Valley Forge National Park has agreed to man the intersection of Route 23 and Route 252 and direct traffic in the event of a Limerick evacuation. The Park personnel manning that point will allow park traffic that has been notified at the alert stage to proceed on 23 west or 252 south if that can be done without causing tie-ups or additional problems. (Fewlass TR 14,697)

252 On a normal day, Valley Forge Park usually has three field park rangers and a dispatcher. They would be the primary people to be used for alerting park visitors in various areas of the park. The park has a permanent staff of 50 people who could be utilized for either traffic control or for notifying people. "The majority of them are maintenance personnel, some office personnel, some interpreters, and some rangers." (Fewlass TR 14,698)

253 On February 10, 1984 Mr. Fewlass was contacted for the first and only time by John Cunnington of (717) 236-0031 who identified himself as a consultant working for the Limerick Nuclear Plant. At that time Chief Fewlass was asked what park facilities lay on that side of the river, and what development was proposed by the park within that area. Mr. Cunnington also asked if there were any potential shelters in the area. (Fewlass TR 14,695)

254 Mr. Feters testified that in his opinion there is no possible way you can empty the municipalities using Route 100 south and empty the Marsh Creek Park at the same time. (Feters TR 14,717)

255 There are 3 bad times on Route 100 south in Upper Uwchlan-Uwchlan Township. One is the morning when people are going to work. The other is evening when they are coming home. And the third is in the summer with the Marsh Creek State Park traffic, with people coming and going with their boats and so forth. When there is a snow storm the area is paralyzed and traffic cannot move. (Note: Mr. Feters does the snow removal for the township.) (Feters TR 14,718) Rain and oil film on the road from trucks is another problem.

256 The Village of Eagle is a 35 mile-per-hour speed zone and is where Route 100 intersects with Little Conestoga Road, which serves as the park entrance. The roads make a sort of funnel right in the middle of the village. Byers Road intersects there. This village is 3/4 to 7/8 mile from the turnpike entrance. (Feters TR 14,720)

257 Mr. Feters, although a school bus contractor, will not provide buses for evacuation within the EPZ because: It was not fair to ask his drivers, many of whom have families living in the EPZ, to go to another school district and haul students when they

would be more concerned with their own families and children at home. That is why he has not called a meeting for this. (Fetters TR 14,714) Mr. Fetters operates 28 buses which cover a portion of the Downingtown School District on a day-to-day basis. It is questionable in Mr. Fetters's judgment whether his bus drivers would go into a situation to evacuate students with their own families back at home to worry about. Eighty percent of Mr. Fetters's 37 drivers live within the EPZ. (Fetters TR 14,742)

258 Mr. Fetters testified that he was concerned how buses were going to be able to move children if traffic snarls were to develop. Route 100 is the main artery leading into and out of the Pickering Valley Elementary School, and Route 100 already is a traffic problem. "We have a difficult time now just taking the students to school and bringing them home. If the parents will stay away from the school and leave the buses to do their job."

259 One and one-half miles of solid southbound traffic on Route 100 happens on a routine basis during morning rush hours. (Fetters TR 14,748) A new red light at the Turnpike exit has made the problem worse. (14,748) The traffic extends to the intersection of 100 and 113. (TR 14,7655)

260 Mr. Fetters testified that roads in Upper Uwchlan Township which Penn Dot takes care of don't get plowed for two days. "I don't know where they get to. They have a problem." (Fetters TR 14,750)

261 Mr. Feters testified that in his opinion there is no possible way you can empty the municipalities using Route 100 south and empty the Marsh Creek Park at the same time. (Feters TR 14,717)

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264 Mr. Feters, although a school bus contractor, will not provide buses for evacuation within the EPZ because: It was not fair to ask his drivers, many of whom have families living in the EPZ, to go to another school district and haul students.

265 Steve Grenz, Vice-Chairman of the Uwchlan Township Board of Supervisors, testified to a concern the Township EMC Mr. Minihan had relayed to him concerning traffic. He considered that Routes 100 and Route 113 were bad enough during rush hour and based upon that Mr. Grenz doesn't know whether the Uwchlan Plan is capable of being implemented, in reference to that kind of total emergency. "I would doubt that a 2 lane highway could handle something like that." (Grenz, trans 17963)

266 Mr. Grenz anticipates that based upon his knowledge of people in the Township that in an evacuation that traffic from outside the EPZ in Uwchlan Township would be on the routes and contribute to the amount of vehicles on the road. (Grenz trans 17941)

267 In reviewing the draft Uwchlan RERP Vice-Chairman Grenz and the other Supervisors would take a close look at the roads and intersections and consider the volume of traffic traveling on these roads. Some of the people the people that are in the zone will have to use the roads outside the EPZ to leave where they live. The Traffic Engineering Plan LEA EXH-45 contains the kind of information that they will consider. It is the official traffic plan for the township (see Resolution LEA EXH E-45) (Grenz, 17929)

268 Mr. Kelly has a concern as to whether police officers will be able to control traffic at traffic control points (TR 18,650), and testified that the Douglass Twp. Police Chief to some extent shares this concern. Mr. Kelly has personally witnessed a situation (TR 18,651) where an individual ignored a policeman's whistle and direction and drove right into flood waters. (TR 18,652)

269 Mr. Kelly sees a need to have traffic volume figures which would show the amount of traffic anticipated at traffic control points over a given period of time during an evacuation. (TR 18,649-18,650)

270 Supervisor Mr. Hugh Kelly feels that it is necessary to do another general population survey to obtain more information on the transport-dependent population in Douglass Township. (Kelly TR 18,575).

SCHUYLKILL TOWNSHIP

271 Dr. Norman Vutz is a Township Supervisor of Schuylkill Township, which is governed by a 5-man Board of Supervisors (Vutz, TR 14,432) Dr. Vutz has been appointed by the Board as Emergency Management Coordinator, and also as the Assistant Road Committee Chairman. As Assistant Road Master, Dr. Vutz has a very intimate knowledge of local roads, including the 26 miles of state maintained legislative routes "threaded through" the approximately 26 miles of township roads. (Vutz, TR 14,432-14,433)

272 Dr. Vutz has a PhD in Nuclear Science from Carnegie-Mellon University and has worked in the Atomic Energy Division of both Babcock & Wilcox (1961-1963) and Westinghouse Electric Company (summer of 1960). (LEA Exhb. E-19, page 2, entered at 14,431). As a doctoral candidate, Norman Vutz taught graduate level courses from 1964-1966 at Carnegie Institute in modern physics, reactor analysis, experiments in nuclear neutron physics, and servomechanisms and controls. (TR 14,430 page 17 and LEA Exhb. E-19) Dr. Vutz is presently employed as Senior Engineer with a consulting engineering firm specializing in transportation. (TR 14,425) and LEA Exhb. E-19 and has worked with computer simulations (TR 14,461).

273 Dr. Vutz made a written critique of Draft 2 in 1983 and which was distributed to Energy Consultants and PECO. As a result missing maps and phone numbers were fixed, but Energy Consultants made no structural change in the plans from Draft 2 to Draft 6. (Vutz TR 14,516)

274 In every instance with Energy Consultants personnel, they have made a general statement that "you know, we would be pleased to change the plan." And it is such a general offer that it is hard to pick up and run with it other than rewriting the plan and telling them to reissue it.

275 In correspondence from the county there is a general closing sentence in there like "appreciate comments on any and all things." But there have been no agenda-driven discussions relating to training, relating to traffic, relating to resources like that. (Vutz TR 14,516)

276 At this point, Dr. Vutz has to say that he is not satisfied. "We haven't gotten down to brass tacks yet on alot of these detailed areas." (Vutz TR 14,517)

277 A couple of extra traffic control points would not eliminate Dr. Vutz's traffic concerns. They make the system slightly less critical. There is no one magic solution to make it suddenly flow very smoothly. (Vutz TR 14,517)

278 I think traffic control would tend to make an orderly flow of traffic. "In an evacuation scenario I believe a presence of municipal persons, foremen and so on who appear to know what they are doing would serve to put alot of peace of mind in people and establish an atmospheric situation that is under control rather than "every man for himself."
(Vurz TR 14,511)

279 Dr. Vutz got the impression from wording in the report, and press treatment of the ETE evacuation times, that the HMM simulation itself was attempting to analyze a snowstorm of more than one to two inches of snow.

280 It is Dr. Vutz's conviction that the bottom line is that the responsibility for responding rests upon the municipalitles. And the municipalitles are many little groupings in the EPZ area, each pursuing activities on its own. (Vutz TR 14,538)

281 It is Dr. Vutz's "hunch" based upon his detailed knowledge of local roads and conditions, that it would take more than six hours to evacuate under adverse, not "worst case", conditions. He of course doesn't have his own independent traffic study to bear that out, but he believes it would be prudent to base planning on something a little worse than just a freezing rain condition "because we get that quite frequently." (Vutz TR 14,548)

282 Based upon his engineering experience, Dr. Vutz testified that design for the worst case could be prudent and reasonable depending on the criticality of the system. In railway signaling there is a fail-safe approach. That is different from an aircraft industry approach.

283 Dr. Vutz, although an especially qualified and interested emergency coordinator and public official, was never given the opportunity for input and review at the HMM Time Estimate Study (Appl. Exh. E-67) in the course of the planning process. Subsequent to the study's release he was not sent a copy by the Applicant for his use in developing a workable Schuylkill municipal plan. When given a copy of the HMM Evacuation Time Estimate Study a few weeks before the ASLB off-site hearings, Mr. Vutz was hampered in his use of the document by certain unclear abbreviations and illegible maps which make the ETE a less than adequate for even a highly technically trained local official as Dr. Vutz, who has worked with computer simulations, even transportation computer simulation, although primarily rail oriented.

284 Dr. Vutz had had a several hour briefing session with Chester County coordinator Tim Campbell subsequent to the July 15, 1984 drill and had expressed concerns in writing as early as June 1983 on Draft 2.
(Vutz TR 14,537)

285 Police Chief Marchiegano of Schuylkill Township tells Dr. Vutz "Tell me what you want done and we will try to do it for you." He is looking for some specific guidance, and it goes beyond just "send seven men out to stand in seven locations." (Vutz TR 14,549)

286 Dr. Vutz had reviewed both NuReg 0654, and the HMM ETE, though of course from the practical viewpoint of _____ and public official rather than from an academic, legal, or professional consultants point of view, and thus his testimony is of great value to this Board. It is only to be regretted that the unique qualifications of this witness were not better utilized by the municipal and county planning process.

287 Dr. Vutz's recollection from NuReg 0654 was that one purpose of the ETE is to provide material that is useful to decision makers responsible for coordinating an evacuation and to help them come up with implementable plans. (Vutz TR 14,546)

288 Dr. Vutz never asserted that an ETE study should be based upon a worst case meteorology, but simply indicated that he was interested in winter storm conditions worse than that of a 30% capacity reduction. Such storms can happen one to several times a year in Schuylkill Township, and involve an increase of travel times from three to six times normal. (i.e. from 10 minutes to 30 minutes or one hour) (Vutz TR 14,534)

289 Mr. Whitlock has a concern about the availability of personnel who may volunteer ahead of time, but would leave in an actual radiological emergency (Whitlock, TR 18,482). He wants to find some way to get a commitment from them so that they will be there when needed. He extends this concern to finding EOC staff (TR 18,482).

290 Mr. Whitlock testified that the responsibility falls on the elected officials of the township for the health and welfare of school populations while they are within the municipality. (TR 18,465). At TR 18,390 he indicates a township population of 1500 people and 1500-2000 students.

291 Based upon his experience on a number of occasions of sending out a mail survey related to other activities within South Coventry and Northern Chester County, Mr. Whitlock testified that a 10% return is a good return on a mailout, and a 13-15% return would be an excellent return. (TR 18,383). He thinks that a door-to-door type survey would be more correct and accurate to use in disaster planning. (TR 18,384).

292 Phoenixville has a problem with Routes 23 and 29 on a day-to-day basis, including back-ups during rush hour times of day. (August, TR 18,886).

293 There are substantial numbers of Phoenixville residents who don't have cars who rely on public transportation and taxis. (August, TR 18,890)

294 It is the position of Bonnie August, president of Borough Council in Phoenixville that another census or survey of borough residents should be taken, in order to more accurately establish the numbers of transport dependent and those requiring other assistance, prior to the adoption of any RERP draft. (August, TR 18,914, lines 13-18).

295 The Emergency Management Coordinator of Douglass Township, Montgomery County, sees a need for his municipal and local school system plans to "dove tail." (Kelly 18,545).

296 Effective at the beginning of 1985, the Douglass Township Board of Supervisors has replaced their previous Emergency Management Coordinator with a Mr. Zern in order to have the EMC report more directly to the Board. (TR 18,541-18,542).

297 "Well, I understand that they are supposedly to swallow the magic potion and go back and take care of their cows, etc. Whether or not an individual is going to do that, I don't know. A lot of these various farms are family operations and they rely on their children, etc., to help them with their chores. " (Kelly, TR 18,657-18,658).

298 Although the 605 people who are transport dependent is the only number that Mr. Mattingly has now to work with, he is of the opinion, "I would just have to take the figure that was supplied to me and work from that and also knowing that there may be other people that would be at these bus stops in the event something did happen, that I may even have more, a lot more, than what has already been stated," (Mattingly TR 17,837 lines 1-9)

299 In reviewing and considering the draft RERP for Pottstown, Pottstown Borough Council will depend on the people assigned to certain offices: police, fire, transportation, communication, public works and ambulance, along with the Emergency Management Coordinator. (Skatbeck TR 17,835) It is the intention of Pottstown Borough Council to "work toward the development and adoption of a workable plan" for the Borough (TR 17,835)

300 Mr. Mattingly has experience with respect to traffic flow in zoning matters and such issues as whether or not a road is suitable for the amount of traffic that is to be going over it, whether the crown is right, etc. and whether the stop signs are there or whatever. (TR 17,831)

301 Mr. Mattingly, Pottstown Transportation Officer has never seen or reviewed the evacuation time estimate study prepared by HMM Associates. (TR 17,831 line 5)

302 Bonnie August: "Borough Council is having a problem with the towing ordinance with the Police Department. There is controversy as to who was to receive all the towing from accidents that occur.
(August TR 18,885)

303 "I'm concerned that there aren't enough vehicles (buses, ambulances, any way to evacuate people) to take care of the residents in Phoenixville. I live in a neighborhood that's low income and many rely on public transportation. " Also, we no longer have a train system in Phoenixville. (August TR 18,880)

304 Also, there are not enough taxis or the people have to wait a long time until they're picked up. (August TR 18,890 and TR 18,891)

305 I wrote a letter to the NRC because I didn't want the Borough of Phoenixville to be graded in a drill that I didn't know what the outcome was going to be because the council had not reviewed the plan that they were working under at the time. (August TR 18,897)

306 Council voted not to enter into the July 25th drill because the Council didn't have a decision as to the workability of the plan. They hadn't reviewed it and they didn't feel prepared to enter into a drill at that time. (August TR 18,899)

307 Councilman Gray expressed concerns about the evacuation of Routes 23 and 29. He works for PennDot and he feels that those two routes can't handle traffic. (August TR 18,909 and 18,910)

308 Before the evacuation plan like this can be adopted, we need an alternate adequate means of evacuation other than Routes 23 and 29. (August TR 18,913)

309 Both Routes 23 and 29 go through the Borough of Phoenixville. And, at given times of the day, quite often, they are backed up with traffic. The Chester-Montgomery link was something planned in the early 1970's to take the traffic burden off of Route 29 and alleviate some of the traffic, but it doesn't exist right now. (August TR 18,959 and TR 18,958)

310 Sheltering as defined in the Phoenixville Plan, simply, means to stay at home. Many people will choose to simply stay at home. (August TR 18,900 and TR 18,901)

311 There presently is not a workable evacuation plan for Borough Council to adopt. So far the Council has not been able to decide on a meeting date to discuss the evacuation plans. (August TR 18,907 and TR 18,908)

3/2 Mr. Bartle, chairman of the Montgomery County Board of Commissioners, testified that he has not set a date for review and a vote on adoption on the Draft 7 Montgomery County plan (Applicants Exh. E-3) "because we don't know whether this is the final plan or not." (Bartle TR 18,597) At some point, the EMC Mr. Bigelow is going to "make a recommendation to us, and we will listen to him and to all the other input which we have received from the various people who have given us."

3/3 When asked if he would "place considerable reliance upon Mr. Bigelow's judgment as to the adequacy of the emergency planning measures?", Chairman Bartle testified, "Mr. Bigelow is an employee of Montgomery County. Mr. Bigelow is in a position where he is making recommendations to the Commissioners. I will use my own good common sense and judgment in the end to determine what I do." (Bartle TR 18,620)

3/4 As to emergency procedures, Mr. Bartle has stated publicly several times that he "has little faith" in the effective implementation of any evacuation plan. He stands by that statement and describes this context, "My feeling is to evacuate 60,000 people (sic) safely and effectively on a cold, snowy December morning would be very, very difficult and I have little faith that all of those people would get out effectively and cleared from the area. Now as the situation improves, in my judgment, common sense says that if you have more time, you may only have an unusual event and you have to evacuate - maybe it's a site

emergency, maybe it's an alert. If it's a nice warm summer day you are going to get more out safely, you are going to have a better situation to effectuate an evacuation." (Bartle TR 18,587-588)

3/5 A letter was sent by Commissioner Bartle dated October 25, 1984 (LEA Exh. E-55) addressed to Robert Anthony with a cc copy sent to Mr. Anthony Loben, Executive Director of the Montgomery County Planning Commission: (Bartle TR 18,585)

"When the plant was first proposed in the mid 1960's, the County petitioned the then Atomic Energy Commission (AEC) for permission to intervene. Permission was granted and the County attended thirty-three (33) days of public hearings during the 1970's. The County presented evidence, cross-examined witnesses and made a strong plea to prevent the construction of Limerick. The County also employed the Franklin Institute as a consultant to study the impact of the plant and its findings were presented to the AEC.

"The AEC eventually ruled in favor of the applicant and construction was permitted over the opposition of the County and Congressman Coughlin.

"The County also intervened and presented testimony before the Pennsylvania Utility Commission (PUC) recommending that a Certificate of Necessity not be granted to the Philadelphia Electric Company. The PUC, however, did grant the certificate. The County also became involved in the Delaware Valley Basin Commission studies and hearings concerning the water supply for the Limerick Plant operation.

"The County pursued every available administrative procedure to prevent the construction of Limerick, but the governmental bodies responsible for the decision decreed that the plant could be built. The Nuclear Regulatory Commission, (NRC) has preempted all other governmental bodies in the control and licensing of Nuclear Power Plants. They employ experts in the field for the purpose of making decisions in that area. It is incumbent upon the NRC to properly monitor the construction and operation of the Limerick Plant." (Bartle, TR 18,680) (admitted in full)

At TR 18,587 line 16, TR 18,592 and at TR 18,615 at 21 Commissioner Bartle underestimates the number of Montgomery County residents who would be evacuated in a winter scenario. According to Applicants Exhibit E-67 pg. 3-21 Analysis Area II indicates 153,184 people for Montgomery County EPZ Winter Weekday, and 124,496 people for Winter Weeknight. The Winter Weekday population for the entire EPZ 255,284 pop. Obviously the increase could only increase Chairman Bartle's concerns. (Admitted in full TR 18,680)

316. Mr. Bartle was asked at TR 18,609 "Can you indicate, Sir, whether you will ask Mr. Bigelow for a recommendation on whether the plan is workable or not?", and he answered, "I don't know yet what I am going to ask Mr. Bigelow. You are asking me a hypothetical question, I think. I try not to answer hypothetical questions." (Bartle TR 18,602)

317. Commissioner Bartle was not aware of any of the traffic control arrangements in the plan as it pertains to Upper Merion Township. (Bartle TR 18,609)

The draft Chester and Montgomery County and School District RERP's are deficient in that there is insufficient information available to reasonably assure that there will be enough buses to evacuate the schools, both public and private, in one lift.

318. PEMA's written testimony stated that in Mr. Hippert's opinion, this contention is structured around the basic question: Have arrangements been made to ensure that sufficient buses will be readily available to evacuate the schools within the EPZ? Ancillary questions are then posed as follows:

1. What assurance is there that designated bus companies will actually provide the buses needed?
2. Are letters of agreement with bus companies definitive in setting forth the obligations of each party and can the agreements be enforced?
3. Do the plans have to include preassignment of buses to specific schools?
4. Will the normal or emergency-related bus requirements of school districts outside the EPZ impede the availability of buses needed for evacuation?
5. What procedures are, or should be, in place to ensure that designated buses from outside the area of normal school bus resources can be timely and effectively utilized?
6. Does Chester County have written agreements with bus companies to provide buses needed for evacuation of school children?

(Hippert, ff. TR 19,498, pages 7 and 8) (Also Hippert TR 19,633-19,634).

319. In Mr. Asher's professional opinion, letters of agreement should indicate the number of buses to be provided, although he acknowledged that NUREG 0654 Rev. 1 did not require that. (Asher TR 20,163, 20,196). Mr. Asher said that NUREG 0654 did not set forth a proper format for letters of agreement. (Asher TR 20,271). Although he would evaluate the adequacy of bus provider letters of agreement according to the criteria of NUREG 0654, Rev. 1 and 10 CFR S 50.47, to a degree he would also evaluate them according to his professional opinion. He stated "If it becomes a very open question as to whether or not there is a capability of sufficient bus resources to adequately address the proposal in the plans for a one lift effort, then I think that I might have some questions." (Asher TR 20,273)

320. The FEMA review process has become somewhat more sophisticated than it was in the earlier days of this undertaking. NUREG 0654 is a guidance document for evaluation. In the context of NUREG 0654, Mr. Asher stated "what we are looking at is the skeleton of what would be necessary in a plan and it would be within the professional judgement of the reviewers to kind of flesh it out." (Asher TR 20,276) We (FEMA) are progressing with those standards as set forth in NUREG 0654 subject to the interpretation by the reviewer based on his professional knowledge. (Asher TR 20,277) There is no implication that FEMA Region III is applying different standards to evaluate the Limerick plans. (Asher TR 20,276) Mr Asher testified that where he had taken certain positions based on his personal opinion, he was doing so based on his professional emergency planning expertise. (Asher TR 20,305)

321. In rendering a decision on the adequacy of evacuation plans in Pennsylvania, FEMA may go what some might consider to be above and beyond the guidance of NUREG 0654 because of the one-lift principle required for school evacuation. (Asher TR 20,321) He was unable to provide any information how the one-lift principle would be applied to the evaluation of the Susquehanna or Beaver

Valley evacuation plans because FEMA had not yet completed its formal Part 350 review of those plans. (Asher TR 20,321-322) Mr Asher testified that in his professional opinion, the procedure for a one-lift evacuation of schools provides reasonable assurance that adequate protective measures can be taken to protect that segment of the population. (TR 20,325)

322. Mr Asher stated that the absence of the mentioning of specific numbers of buses in bus provider agreements would not preclude FEMA from making a finding as to the adequacy for the planning standard. (Asher TR 20,297.) However, he felt that letters of agreement should specify the number of buses so that FEMA would have a complete understanding as to the availability of the resources needed to provide a one-lift evacuation of school children. The one-lift standard is unique to Pennsylvania. It is the only state in FEMA Region III where it is necessary to remove school children in a one-lift evacuation. (Asher TR 20,306-307)

323. Mr. Hippert testified that PEMA knows what the unmet bus needs are. Chester County is in the process of negotiating with SEPTA, and PEMA is also in the process of negotiating for additional buses. Berks and Montgomery Counties say they have enough buses. The big problem is Chester County, which PEMA is working on in two directions. (Hippert TR 19,545-19,546).

324. Information regarding unmet needs is supplied to PEMA directly by the counties involved, not by Energy Consultants. In PEMA's opinion, if Chester County says it needs 134 buses, they need 134 buses. Montgomery County has requested a 10% reserve, because Mr. Biglow felt that it was the expedient thing to do. Chester County has not requested reserve buses. (Hippert TR 19,546-19,547).

325. PEMA would work with PennDOT and negotiate further if necessary with SEPTA to see if any buses needed for Chester County unmet bus needs could be obtained one way or another. (Hippert TR 19,550). Mr. Hippert was unable to provide any information about the source of the 100 buses he testified that Chester County was in the process of obtaining, except for the fact that SEPTA is obviously one of the bus companies they are negotiating with. When asked if he had any knowledge of whether or not SEPTA could provide the entire 134 buses that has been identified as an unmet need in Chester County, he said, "I have no reason to believe that they can or can't provide that many buses based on their fleet." (Hippert TR 19,551).

326. Mr. Hippert stated that SEPTA was the logical source for buses to fill unmet needs because of the geographic area involved, rather than going to Schuylkill or Luzerne County or something like that. SEPTA is the closest place for buses and it has a rather large fleet. (Hippert TR 19,553).

327. Negotiations are not actually ongoing between PennDOT and SEPTA. PennDOT and PEMA attorneys are revising the agreement that SEPTA wanted Chester County to sign to see if they can get the language more in line with what they believe would be acceptable to PEMA and the Commonwealth. Once that is finished, PEMA will meet with SEPTA and see if they can resolve the problem. The tentative agreement that was put out by SEPTA was unsatisfactory not only to Chester County, but also to the Commonwealth. The agreement was too restrictive and covered what Mr. Hippert described as a multitude of sins. (Hippert TR 19,555).

328. Mr. Hippert testified that if Chester County completed written agreements for 100 buses, its unmet needs would be reduced to 24. (Hippert update to testimony made on 1/22/85.

Mr. Hippert was unable to say whether or not any written agreements have been consummated, but was aware that Mr. Campbell was working on them. Mr. Hippert was not personally aware of any bus company, other than SEPTA, with which Chester County is negotiating for the provision of buses for evacuation purposes. (Hippert TR 19,549).

329. PEMA did not receive copies of letters of agreements with bus providers in the copy of the draft plan received from Mr. Bigelow. Mr. Hippert stated that on the basis of the testimony he heard, that it was his understanding that Mr. Bigelow had obtained agreements with a great many bus companies or bus providers. The ones they don't have are still in the negotiation stage. (Hippert TR 19,547).

330. It is PEMA's position that should an evacuation become necessary, arrangements must be in place to insure that the action can be taken in a timely manner by using one lift rather than by multiple bus trips. (Hippert TR 19,545).

331. Mr. Asher stated that he had been shown copies of the 6 letters of agreement with bus providers (LEA Exhbs E-63 - E-68) obtained by Chester County the day before he testified, and that he was present in the hearing room during Mr. Campbell's testimony. Mr. Asher also testified that he was not aware if the six agreements were for the provision of buses for school evacuation, and that he had not reviewed the details of the agreements. (Asher TR 20,198)

332. Mr. Asher stated that in his professional opinion, the Chester County letters of agreement should indicate the number of buses to be obtained from the provider, although he did believe that the letters meet the requirements of NUREG 0654, Rev. 1. (Asher TR 20,199)

333. Montgomery County is the only one of all the risk counties in the Commonwealth of Pennsylvania that has asked for a reserve backup of buses. This is the first time that PEMA has even seen that request from any county. (Hippert TR 19,550).

334. Mr. Hippert has not been provided any information regarding the status of letters of agreement with a number of private bus companies in Montgomery County; including the Ashbourne Transportation Company, Carol Lines, the Huntington Valley Transportation Company, the Levy School Bus Company, the Romano School Bus Service, and the James Sacks Bus Company. The only information that PEMA has regarding the status of letters of agreements with bus providers, over and above what is in the draft Montgomery County RERP, is information received at the hearings. (Hippert TR 19,548).

335. Mr. Asher testified that FEMA had not been provided with a copy of the Montgomery County bus provider letter of agreement identified as LEA Exhb E-12 or anything similar to it prior to testifying on Jan. 25, 1984. (Asher TR 20,192)

336. In reference to questions about the adequacy of LEA Exhb E-12 to provide reasonable assurance that a specified number of buses and drivers will be provided, Mr. Asher stated it was his professional opinion that in order to accomplish evacuation in one lift, he believed that the letter of agreement should mention a specific number of buses to be provided. (Asher TR 20,196)

337. Mr. Bigelow did not personally prepare Annex I, the Transportation portion of the Montgomery County RERP, although he had a great deal of input into it because he did most of the leg work out with the transportation providers.
(Bigelow TR 14,175-14,176)

338. According to Mr. Bigelow most, if not all, of the bus provider information contained in Annex I, Appendix I-2, Tab 3 was gathered over several months and was prepared prior to the first of July, 1984. When Mr. Bigelow testified on Dec. 3, 1984 he stated that the information was "as current as when it was taken." To the best of his knowledge, he testified that the information contained in Tab 3 of the Montgomery County Draft #7 RERP (Appl. Exhb. E-3) was still accurate.
(Bigelow TR 14,176-14,177).

339. Mr. Bigelow requested Energy Consultants to delete the "Limerick Assignment" information contained in Tab 3 of Annex I, Appendix I-2 (Appl. Exhb. E-3) so that people would not be "harassing" school districts who said they would be very happy to help the county if they had an emergency (Bigelow TR 14,179). He referred to copies that were missing this information as "neutered" copies. (Bigelow TR 14,177). He stated that a few months back during a meeting, he was discussing transportation arrangements with people in the Perkiomen Valley School District who wanted to know how buses would come in to their school, and how the county knew that it would have sufficient bus resources from the outside. He gave them an example how the information was penciled in, although the assignments were just roughed out, and not in concrete. He gave them the information they wanted, although in this particular situation, the 11 buses that they needed would be coming from a particular school district outside the EPZ. When the information got out, an individual tried to call the superintendent of the school outside the EPZ to see if he knew specifically that he was going to send a bus and a driver to a particular private school. (Bigelow TR 14,178-14,179).

340 During the hearing, he tried to ask a representative of Limerick Ecology Action whether or not LEA had a "neutered" copy or one that contained Limerick assignment information. The Board did not permit Mr. Bigelow's question to be answered. He seemed disturbed that the parties to this proceeding had received copies of Draft #7 of the Montgomery County RERP (Appl. Exhb. E-3) containing the assignment information. (TR 14,179-14,180).

341 Mr. Bigelow testified that a member of his staff met with 29 out of the 33 bus providers listed in Tab 3, Appendix I-2, Annex I (Appl. Exhb E-3) although he could not recall which 4 were not included. He stated that he personally met with at least 20 of the bus providers. He stated that the bus providers were told what the county wanted, when they wanted it for, asked for their support, and obtained the raw data contained in Tab 3. Mr. Bigelow testified that the information collected at the meetings with bus providers was not obtained solely for Limerick. However, he added that since Limerick was a site specific in Montgomery County, it was included as an ad-on, just to insure that there was no question that the County was including Limerick, as well as any other possible emergency in Montgomery County. (Bigelow TR 14,184-14,185).

342 The transportation providers listed in Tab 3 have not been informed that they have been given a Limerick assignment. According to Mr. Bigelow, any transportation resources from outside the EPZ would go to one of the three transportation staging areas and would be informed of their specific duty as it would pertain to Limerick. (Bigelow TR 14,186).

343 Mr. Bigelow's subsequent comment supports the concerns raised by contentions LEA-11 and LEA-15.
"And of course, the people who are going to provide the transportation have not asked nor have we indicated to them

specifically where they will be going because all the information we have gained on transportation is for emergencies in Montgomery County, including Limerick."
(Bigelow TR 14,179, lines 2-6)

344. Mr. Bigelow testified that he would consider any bus reserve to be 'adequate' if he knew that he was meeting all his needs. He said that 'adequate' reserve could be any number, but that he had not put a figure on it. (Bigelow TR 14,191). When Draft #7 of the Montgomery County RERP (Appl. Exhb. E-3) was transmitted to PEMA, Mr. Bigelow indicated in the plan that Montgomery County would like to have an "extra reserve, just in case." He picked a figure that was 10% of the number of buses needed, without any consideration of any reserves. He stated that he had made the reserve request because there is always the possibility that you could have more than one emergency at the same time and to give PEMA some thought as to the fact that yes, Montgomery County had its needs, but then again, they would like PEMA to come up with some additional backup for them. (Bigelow TR 14,192-14,193). When asked what concerns he considered that led him to choose 10% as the reserve figure, he replied,
"That was a figure off the wall."
(Bigelow TR 14,193).

345. When asked if it was correct that he testified that he had enough buses for an evacuation that might be necessary in Montgomery County, Mr. Bigelow answered, "That changes almost every day. You have buses in and buses out. But the information that we have compiled, if that were to hold true and the requirement remain the same, yes we would have sufficient. Based on that kind of data, we would also have a reserve within the County." (Bigelow TR 14,191).

346. Commissioner Banning does not believe that the current language of the letters of agreement between Montgomery County and bus providers is adequate. The letters should reflect what has been done to ascertain what drivers would be available, and to state what degree of participation the school district reasonably thinks it should be. (Banning TR 17,669-17,670)

347. There are 33 proposed letters of agreement in Montgomery County with bus providers who may be called upon to give assistance if an evacuation is called for. Approximately 21 of them have been executed, although there is some question about the status of the agreement with the North Penn School District. (Bigelow TR 14,366).

348. Some of the letters of agreement which have not yet been executed relate to buses whose availability is mandatory in order for the plan to be workable. (Bigelow TR 14,366).

349. If there is an inability to reach agreement with those bus providers whose buses are necessary for the plan to be adequate and implementable, Mr. Bigelow does not feel that there would be an inadequate number of buses available because he believes that in an emergency, people will respond as they always have, to the best of their capability with or without an agreement. However, he was unaware if any of the bus companies with whom letters of agreement are still being negotiated have ever responded with buses in the context of evacuation after accidents at nuclear facilities. Nonetheless, he testified that he thought they would respond "to the best of their ability". He interpreted this to mean "whatever they had available that was available to us. When I went out to these bus companies I went out for any and all emergencies in Montgomery County. Would they help us if we had a problem and the answer normally is 'Yes, we would to whatever extent we can.'" (Bigelow TR 14,366-14,367).

350. Commissioner Banning wrote to the school district bus providers, because she had been contacted by a member of the school board of one of the school districts who had concerns about their obligations under the agreement. (Banning TR 17,598-17,599, TR 17,660) Charles A. Scott, the Superintendent of Schools at the Upper Merion Area School District, wrote a letter to Commissioner Banning dated November 20, 1984. He stated that he had been informed by Mr. Mowry and Mr. de Prefontaine that they had made a verbal agreement to supply drivers on a voluntary basis for assistance in the event of a radiological emergency at the Limerick Generating Station. His letter states, "They gave Mr. Bigelow the names of people to call in our school district in the event of an emergency. We did not guarantee anything. We merely said we would assist if drivers did volunteer to do this. Your letter is the first communication we have had from anyone indicating what our assignment would be in terms of location and number of vehicles required." (Banning ff. TR 17,752, Upper Merion Area School District attachments).

351. Mr. Matson, the director of transportation for the Lower Merion Area School District, stated November 19, 1984 the following:

"On April 2, 1984, Mr. Bigelow forwarded a "letter of understanding" and requested that the board of school directors execute same, thereby agreeing to "provide busses and drivers to the maximum extent possible, etc.." On April 30, 1984, Dr. James B. Pugh, Superintendent of Schools, in a letter addressed to Mr. Bigelow, indicated that "At its meeting on April 23, 1984, the Lower Merion Board of School Directors

took action and indicated its willingness to cooperate with the Montgomery County Office of Emergency Preparedness in the event of a man-made or natural disaster. Specifically, the Board of School Directors agreed to provide school busses and drivers to the degree possible for use during an emergency." Dr. Pugh's letter also indicated that "the "Board of School Directors did not, however, find the 'letter of understanding' acceptable and, therefore, did not approve it."

In summary, and in response to your letter of November 15, 1984 addressed to Dr. Pugh, the Board of School Directors of the Lower Merion School District while agreeing to "assist to the degree possible", has not made a "commitment" to supply the amount of busses indicated in your letter of November 15, 1984, nor has the Board "guaranteed" drivers for the busses requested."

(Banning ff. TP 17,752, attachment from Mr.

Matson, dated November 19, 1984).

352. Richard Shupp, business administrator for the School District of Springfield Township, sent a letter to Commissioner Banning on December 10, 1984 in response to her letters dated November 15 and December 4, 1984. (LEA Exhb. E-34)

"You ask if we "guarantee" nine school busses and nine bus drivers to go to the schools indicated in your letter. This is the first time that we have been informed that our busses have specific assignments. Nevertheless, in the event need to evacuate children from the Limerick area, Springfield would make every reasonable effort to fulfill its commitment.

"I am sure you understand that no one can absolutely "guarantee" that drivers and busses will be available under an extreme emergency situation. It normally would take us 45 minutes to one hour of travel time to reach the schools indicated. If the roads are congested because of the "emergency", then there would be no guarantee that our vehicles could reach their assigned destination. If there is an adequate warning period and the roads are relatively clear, we will make every attempt to complete our obligation."

353. W. Jacobs, Secretary of the Board of School Directors of the North Penn School District, sent a letter to Commissioner Banning on November 20, 1984.

"In reference to your letter addressed to our Superintendent regarding provision of busses and drivers for Limerick Evacuation, I am responding with the only information we have on file which is ... North Penn's approved agreements were to act as hosts for Perkiomen Valley School District in the event of a nuclear accident at Limerick, as well as to offer use of district facilities as mass care shelters in the event of any disaster. This was the extent of our signed agreement."

3.54. Dr. Bruce Kowalski, Superintendent of the Wissahickon School District, sent a letter to Commissioner Banning on November 28, 1984.

"The Board of Education of the Wissahickon School District participated in the survey for emergency evacuation in Montgomery County as a part of the emergency preparedness plan. At that time, there was considerable discussion by the Board regarding its willingness to provide busses and/or drivers in the case of a nuclear accident. Since the emergency preparedness plan covers all types of emergency evacuations, including fire, flood, earthquakes, etc., the Board ultimately decided to pledge its resources to assist the population of Montgomery County.

"The possibility of a nuclear accident and the implication for the use of our busses was the basis for considerable disagreement. The Board's action to participate in the plan was based on the assumption that the evacuation plan was a draft and would be returned for final approval to school district agencies. Since no separate vote was taken, I cannot speak in terms of a board decision. However, a strong consensus emerged that in the case of a nuclear emergency our busses would be made available and our drivers would be contacted. The board does not believe, however, that it has the authority to order any of its employees to drive a bus into an area of nuclear hazard.

355. Pottstown School District will not be responsible for evacuation needs including transportation for the non-public schools in the area. (Feich TR 14,930 and 14,933) The Pottstown School District will provide only back-up notification for the non-public schools in their area. (Feich TR 14,930-31)

356. Pottstown School District has available three ten passenger vans and one station wagon to transport 400 children. CMD Services is contracted to provide five buses, and four out of five of these make double runs. (Feich TR 14,922) The students are mostly walkers. (Feich TR 14,950)

357. Only the van drivers are employees of the District, totalling three drivers, all of whom service the Elementary School along with one station wagon driver. (Feich TP 14,923)

358. Mr. Bigelow, the Montgomery County Emergency Coordinator, is aware of his role coordinating all transportation for Pottstown as well as the non-public schools. (Feich TR 14,933)

359. Dr. Feich reported his school district's needs to the county during the drill and specifically asked if there would have been buses available that day for evacuation, since that information was never transmitted to him, he wanted to know that. Applicant's Exhb. E-57, page A-3-23, Resources Required for evacuation reflects the status of school district unmet needs as reported to the county. (Feich TR 14,940)

360. Dr. Feich was unaware that the assignment for those 15 buses, as reflected in Applicant's Exhb. E-57, was the Wissachickon School District. Mr. Bigelow would not

361. Dr. Feich was unaware that the assignment for those 15 buses, as reflected in Applicant's Exhb. E-57, was the Wissahickon School District. Mr. Bigelow would not release assignment information when asked to provide it. (Feich TR 14,943)

362. Dr. Feich plans to request that Mr. Bigelow inform him who the bus providers would be for the Pottstown School District. He plans to make the request for the same reason he plans to get the letter from the host school. Before the plan is adopted he will want to know where the buses are coming from before he presents it. (Feich TR 14,946)

363. Dr. Feich testified that it was essential that he obtain copies of letters of understanding indicating the minimum number of buses to be provided by bus providers before any plan is approved by Pottstown School District. Dr. Feich based his request on the one-lift principle. (Feich TR 14,949-52)

364. Pottstown School District unmet needs for evacuation are 51 buses, which does not include private schools. (Feich TR 14,992)

365. Forty three buses are under contract for the Owen J. Roberts School District this year with the Gross Bus Company. Dr. Claypool did not assume that forty-three buses would be made available during a radiological emergency based on the fact that some of the drivers may not get back to their buses. Whenever the alert situation occurs, our parents are telling is that they are coming to the schools. That is our main concern that we will be able to get them to our schools. (Claypool TR 15,926)

366. Dr. Claypool stated that in his opinion that there will develop an instantaneous response by parents at the alert stage with resulting traffic congestion, which would prevent school buses from getting to the school. (Claypool TR 15,927) I think that there will be congestion along Route 100 and 23. (Claypool TR 15,929)

367. Unmet needs for buses for Phonexville School System are 17. (15051) Dr. Murray believes that for an evacuation plan to be adequate and workable, it is necessary to request written letters of agreement or letter of understanding regarding the provision of buses for such an emergency. He stated that he wants, in writing, "the assurance that we would have the buses which Gross does not have in the event of a total evacuation". This was his answer when asked if he would accept the word of the County that they would assure such buses (it was established that drivers are the responsibility of Mr. Gross from the Gross Bus Company). (Murray, Tr. 15083-15084)

368. Robert C. Wert, Deputy General Manager of the Southeastern Pennsylvania Transportation Authority (SEPTA) stated that the terms of the proposed agreement forwarded by SEPTA to Montgomery County raised several areas of concern. First of all, compensation is one of them. SEPTA has very little ability to fund an undertaking of this nature on its own. Another is the availability of operators. SEPTA is of the opinion that this is an activity that we would have to ask volunteers to participate in. SEPTA would be hard pressed, at this point, to commit a specific number of vehicles from a specific location because of the various service needs that they have throughout the day, and how those fluctuate. SEPTA doesn't have vehicles sitting in a depot waiting to be called upon. (Wert, TR 16,577)

SEPTA does not have a fleet of buses available to drive to some location and that is sitting in a garage. (Wert, TR 16,574)

369. SEPTA has not taken the approach of guaranteeing any specific number of vehicles in the draft agreement. They are saying they will supply what they have available when the time comes, assuming that they are being compensated for it. SEPTA has no way of knowing exactly what the size of the fleet's availability would be at that time. (TR 16,578)

Mr. Wert had not had any discussions with any of the drivers or their union regarding their involvement in providing this kind of service in the event of a radiological emergency

at Limerick. (Wert, TR 16,578) In the event that there were insufficient driver volunteers that normally operate the buses, SEPTA would not likely look for volunteers elsewhere. (Wert, TR 16,579) If we didn't have enough volunteers, SEPTA couldn't operate the vehicles. (Wert, TR 16,581)

370. If an emergency occurred right now at any nuclear station in Pennsylvania, the Governor could commandeer buses after he declared a state of disaster emergency. But Mr. Hippert testified that he thought there was a misconception about the National Guard. The National Guard does not have that many bus drivers, and it is going to take a while to get the National Guard into the EPZ. (Hippert TR 19,588-19,589).

The draft Montgomery, Chester, and Berks County RERP's and the School District RERP's are not capable of being implemented because there is not 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.

371. PEMA's written testimony stated that in Mr. Hippert's opinion, the thrust of this contention is based upon the question: Will there be sufficient teachers and school staff available to ensure the safety of school children in the event sheltering or evacuation should be required? Supporting questions are:

1. What basis is there for presuming that teachers or school staff will stay on duty during a radiological emergency? How will collective bargaining agreements impact upon this presumption?
2. What is the basis for the apparent assumption in the plans that school buildings are adequate for sheltering as a protective action?
3. Are ongoing training programs an effective means of informing teachers and staff concerning the nature and scope of a potential radiological emergency?
4. Can the capability to implement school district plans only be demonstrated by conducting unannounced evacuation and sheltering drills?

(Hippert, ff. TR 19,498, pages 13 and 14) (Also Hippert TR 19,633-19,634).

372. FEMA's current knowledge of risk school district evacuation plans is based on those plans listed in the attachment to LEA Exhb E-1, and is discussed in FEMA Exhbs E-6 and E-7. (Asher TR20,160)

373. FEMA did not send observers to schools during the Nov. 20, 1984 Supplemental Limerick Exercise because they were informed that what had been proposed would not take place and therefore it would be of no value for FEMA to provide a service. (Asher TR 20,161)

374. FEMA has requested a meaningful demonstration of the risk school district's capabilities to evacuate their students. (FEMA Exhb E-8. Asher TR 20,162) That would be the only way we would have an opportunity to determine whether or not each of the school districts did have the capability. (Asher TR 20,163)

375. It has been FEMA's policy to observe a random sampling of evacuation of a school or a class in a particular school district and then to be able to observe or at least to be made knowledgeable of the availability of transportation needs. We would expect to be provided with letters of agreement that would show there was sufficient capability in the way of transportation to provide what was in the plans, which we now understand to be a one lift effort. (Asher TR 20,163)

376. Mr. Asher stated that a remedial table top exercise would not work for the purposes of satisfying FEMA's request for a meaningful demonstration of the various school districts' capabilities to implement their plans. (Asher TR 20,261)
A table top exercise is designed primarily to address those concerns FEMA may have observed as a result of a full participation exercise. (Asher TR 20,331)

377. FEMA is aware of the testimony from Dr. Claypool, Superintendent of the Owen J. Roberts School District, and Timothy Campbell, Chester County DES that states there are certain unmet school staffing needs in that school district that have been passed onto the county. (Kinard TR 20,200). Mr. Asher stated that he has no documentation that the identified unmet needs have been resolved at this time. (Asher TR 20,201)

378. FEMA is unaware whether or not any unmet needs regarding school staff requirements have been passed on to Montgomery County from the Methacton School District. (Kinard TR 20,201)

379. In situations where a school district has identified what it considers to be valid unmet needs regarding staff requirements necessary to implement its RERP, FEMA would need to receive some knowledge as to the progress being made to resolve the unmet needs in order to make a determination that there is reasonable assurance that the plan can be implemented. (Asher TR 20,201). No such information has yet been provided to FEMA from PEMA regarding progress being made to resolve the unmet needs at the Owen J. Roberts School District. (Asher TR 20,202)

380. PEMA does not believe that it is a feasible solution to report an alleged lack of teachers or staff as an unmet need and expect it to be filled by personnel from outside the EPZ. (Hippert, ff. TR 19,498 page 14, par. 6). Mr. Hippert further stated, "I don't see any way that PEMA could possibly meet the needs, or anyone else in this state outside of the EPZ. You cannot man the National Guard that fast; you cannot move anyone that fast." (Hippert TR 19,556-19,557). The time element and problems involved in relying on such an alternative would indeed hinder, and in all likelihood preclude, a prompt and safe evacuation of school children. (Hippert, ff. TR 19,498 page 14, par. 6). Mr. Hippert seriously questioned whether or not the county could supply personnel if called upon to supply additional personnel for school staff unmet needs. (Hippert TR 19,557).

381. Some of the risk school district superintendents and the host school superintendents cannot seem to agree on having the host school provide supervisory personnel because the host schools will not accept the responsibility. Mr. Hippert was unaware if any of the host school agreements that have been negotiated include the provision of supervisory personnel once evacuated students reach the host school. (Hippert TR 19,559).

382. Dr. Price, the Superintendent of the Souderton Area School District, has told his staff that he will only use school staff who volunteer to participate in a radiological emergency, and he has not yet asked for volunteers. At this point, it has not been determined whether there are any unmet staffing needs. There has been no determination of how many students live within the Limerick EPZ. He suspects that some of the teachers will decline to volunteer. (Dr. Price TR 14,422, 14,457). The teachers who have volunteered will have concerns, also. Perhaps not at first, but if the situation becomes worse, their concerns could grow. (Dr. Price TR 15,456).

383. Dr. Price had no knowledge whether bus drivers have received training, or whether they had even been informed of any particular responsibility in the event of a radiological emergency. (Dr. Price TR 15,415).

384. No training sessions have yet been scheduled for school staff at the Salford Hills Elementary School. (Dr. Price TR 15,426). Dr. Price thinks that it is absolutely necessary and that he would look into that kind of training, in addition to looking into what other kinds of training are available. Dr. Price believes that training will need to deal with some of the human aspects, and he would certainly want training of that nature. He was unsure whether that is available through Energy Consultants or the county. (Dr. Price TR 15,428).

385. The situation for teachers, although they are still supervising children, will be somewhat different, as Ms. Greaser stated. Dr. Price does see a different kind of need on the part of the teachers. He does think that they will have some emotional needs that need to be met. They will have anxiety, they will have concerns. Dr. Price thinks that his teachers will need some training in that. (Dr. Price TR 15,429-15,430).

386. "Training is not the end all of a solution, and training can never anticipate every kind of an emergency." Training will help, but that it would not completely solve the problem. (Dr. Price TR 15,547).

387 Certification by the State of Pennsylvania does not have anything to do with a teacher's ability to respond to an emergency situation. Simply because a person has a teaching certificate and is presumably able to teach an academic subject does not mean that that teacher will respond adequately in a life or death or an emergency situation. "I don't think any of us can make a comparison between a radiological emergency and any other emergency." (Dr. Price TR 15,444-445, TR 14,422). Even Dr. Price stated that he had a concern about the responsibility placed on him. "My principals who will be at their schools will have concerns about their own families and the children under their care." (Dr. Price TR 15,456).

388. Dr. Price said he would hope that a teacher's responsibility in a radiological emergency would not be that different from a teacher's normal duties, except for the fact that he has no way of knowing what the human reactions will be. He doesn't believe that his school has ever had an emergency that was comparable to the kind of thing that we would be planning for here. (Dr. Price TR 14,448, TR 14,431).

389. Dr. Price thinks that mechanically the Souderton Area School District RERP can work, but that there is no way he can be sure until it gives it a try. He has some reservations about the human aspects of the plan. For example, he had concerns about panic on the part of parents and what they might do. He said that he doesn't have enough experienced people at the school as well as inadequate arrangements for traffic control. (Dr. Price TR 15,424, 15,431).

390. Barbara Greaser is president of the Souderton Area Education Association and a teacher at the Indian Valley Junior High School. (Greaser, ff TR 15,330 at page 1)

391. Ms. Greaser testified that for many teachers their own families are their highest priority and that some teachers, whose own children are in schools even closer to the Limerick plant, have almost "sworn" to leave and pick up their children first. (Greaser, TR 15,332 and 15,373) She cites an example of one teacher who flatly states he will take care of his own young children first. (Greaser, TR 15,359-60)

392. Ms. Greaser noted that during the November 20, 1984 drill none of the teachers know what was going on, (TP 15,341) and expressed the need for teacher training (TR 15,345), especially in view of the "emotional situation". (TR 15,346 and 15,395)

393. In a radiological accident involving schools, the staff function would be to move any car to block access to the school. (Bradshaw, Tr. 13040)
394. Energy Consultants has no evidence that there is willingness on the part of both bus drivers and teacher staff to participate in a radiological event. (Bradshaw, Tr. 13047) (Proposed Finding)
395. The degree of willingness of the teachers staff to stay in a radiological event is dependent upon the adequacy of the corresponding municipal plan. (Bradshaw, Tr. 13062-13064)
396. Since none of the 43 municipal plans in the EPZ have been promulgated, EC has presented no evidence that would establish teacher/staff willingness to remain in a radiological event. (Bradshaw, Tr. 13062)
397. None of the Energy Consultants panel have worked with the local municipalities in the drafting, implementation and revisions of their plans, but have a general familiarity with the planning process. (Bradshaw, Tr. 13064)
398. Dr. William A. Welliver is the Superintendent of the Spring-Ford Area School District (Welliver, Tr. 15493)
399. There is insufficient information regarding sheltering in the Spring-Ford Area School District Plan. Dr. Welliver would like to see more details regarding procedures spelled out in the plans.

400. When the contractor has buses outside of the school district, on field trips, the normal complement of buses at the usual transportation times aren't available.
(Welliver, Tr. 15555)
401. Service from district personnel (bus drivers) for district purposes is anticipated, but a willingness is not anticipated; especially if asked to return to the area to provide services to other than the school district.
(Welliver, Tr. 15519)
402. In order to feel sufficiently assured that the Springfield School District would receive required transportation assistance, 8 more buses need to be made available to the school district. If the private schools are included, then 30 to 33 buses are needed. (Welliver, Tr. 15521)
403. The results of the bus driver survey issued last spring to 40 individuals (bus or van drivers) were 13 indicated they were willing to serve, 8 indicated they were undecided; 13 didn't respond and 6 said no. (Welliver, Tr. 15523)
404. The school staff survey results were: the Limerick Elementary School (33 staff members) - 2 indicated they would not participate in evacuation procedures; 20 were undecided; 11 would participate. The Oaks Elementary School (25 staff members) - 4 said no; 15 were undecided; 6 undecided. The

Royersford Elementary School (17 participated) - 6 said no; 8 undecided; 3 yes. The Spring City Elementary School (18 staff) - 2 said no; 8 were undecided; 8 said yes. The Middle School (54 staff) - 27 said no; 16 were undecided; 11 said yes. The High School (61 staff) - 14 said no; 26 were undecided; 21 said yes. At the district level (13 staff) - 3 said no; 2 were undecided, 8 said yes. (Welliver, Tr 15525-15526)

405. The vehicles (buses) may be parked at the Colonial School District and may be available for use but it's uncertain whether the drivers would be available. (Welliver, Tr. 15540)

406. Dr. Warner testified that he had delegated responsibility to Jim Brown for RERP development and that a Committee was formed to review development of the RERP for the Methacton School District in July 1984, at the insistence of the Superintendent, Dr. Warner, and because of the concern of the Board of Education over the development of the plan. (Warner, Tr. 15612) Dr. Warner testified that a recommendation to the School Board from him to adopt the plan would probably depend on "how we can meet the unmet needs, and whether in fact I agree with the unmet needs." (Warner, Tr. 15679)

407. The Evacuation Committee surveyed the bus drivers and school staff to find out what level their staff would respond. (Warner, Tr. 15646) The results of the survey were reported to Dr. Warner by Mr. Brown. (Warner, Tr. 15646) Dr. Warner received a copy of the November 16, 1984 letter that Mr. Brown sent to Mr. Bigelow, Director of the Montgomery County Office of Emergency Preparedness, reporting unmet needs. (Marked as LEA Exhb. E-18) Mr. Brown was authorized to communicate on the school district's behalf with the County Office of Emergency Preparedness regarding the identification of unmet needs. (Warner, Tr. 15632) Dr. Warner testified that if unmet needs were to be reported to the County DEP, Mr. Brown would be the appropriate representative of the school district to communicate those unmet needs. (Warner, Tr. 15635) Counsel for the Applicant constantly objected to any questions or answers concerning unmet needs as revealed by the school district's surveys, maintaining that Dr. Warner was not directly involved in the surveys. (Tr. 15649) Nonetheless, Dr. Warner stated that he would rely upon any recommendation made to him by Mr. Brown regarding the status of those unmet needs. (Warner, Tr. 15653) Dr. Warner said that no plans have been made for any mechanism to fill a need for more bus drivers, should they be insufficient. (Warner, Tr. 15654) Dr. Warner stated that he was unaware whether the bus driver need is critical or not, in the sense that not all the drivers were surveyed. (Warner, Tr. 15687)

408. Dr. Warner said that he had not discussed follow-up surveys with Jim Brown, but that he would like to see a higher response "so that we can get more accurate data from the staff" and "would certainly discuss the method" with Mr. Brown. (Warner, Tr. 15654)

409. Moreland Bollinger, Jr. is President of the Owen J. Roberts Teachers Association, the teacher's union. (Bollinger TR 16,087-88 and TR 16,096)
He is also a teacher at the high school.

410. The task force to study the evacuation plans for Owen J. Roberts School District submitted two questionnaires to our staff. (Bollinger TR 16,098)

411. Conversations with most of the eighty teachers who attended an in-service day on evacuation plans said that a "major concern for family members during the emergency" and the fact that the staff wants to be able to take care of family responsibilities and "they want no committment other than that" of their families. (Bollinger TR 16,102, 16,124 and 16,132)

412. When asked about training at Owen J. Roberts, Mr. Bollinger said that one in-service training day to inform teachers about the emergency plan. (Bollinger TR 16,103-4) No specific rules were stated at in-service day regarding roles and responsibilities or sheltering. (Bollinger TR 16,104-16,105)

413. As a staff speaking for the Teachers Association, Mr. Bollinger does not know what staff's role is in an evacuation or sheltering scenario. (Bollinger TR 16,105)

Phoenixville Area School District

414. Dr. Murray has not surveyed his teachers yet regarding their willingness to stay with students during an evacuation. He sites that the reason for this being questions as to the legality of this in relation to collective bargaining agreements. He specifically sites a letter sent to all union presidents by Donald F. Morabido, Regional Field Director, Pennsylvania State Education Assoc., in which he advises them that any action in which they would be asked to supervise buses during a radiological emergency would be considered a part of the collective bargaining agreement and therefore bargainable. "In other words, my district - and I am aware of some others - is a little slow to take that action until we get a ruling on by whose authority teachers can be assigned to do this without going through and opening up a contract." (Murray, Tr. 15052-15054)
415. Concerning unmet needs, Murray sites, "What we have on paper is one thing, what actually takes place is another thing. We don't have 17 buses, we don't have assurance teachers will cooperate, we don't have assurance bus drivers will cooperate. (Murray, Tr. 15132) He further sites that he thinks he can solve everything that has to be solved on paper, but the real concern lies with the actual situation. That is, if there would be site emergency, an actual evacuation, he feels what what would be on paper and what would actually take place could be different. (Murray, Tr. 15131)
416. Dr. Murray when asked if he expected to have more than 64 teachers supervising an evacuation, responded that the number could possibly be less. His reason being since he has not gotten a legal ruling

417. concerning collective bargaining from the teachers union, and since teachers would tend to take advice from their unions, he could not say exactly how many teachers would cooperate in participating in an evacuation. (Murray, Tr. 15118-15119)

418. Regarding the ECI orientation program at Phonexville School system, when asked if he thought that the school staff understood their responsibility as contained in the Radiological Emergency Response Plan as a result of that orientation, Dr. Murray answered that he did not think that the teacher's responsibilities were gone into very much. His understanding was that the orientation dealt with the actual plan itself, for example, different kinds of alerts.
(Murray, Tr. 15078-15079)

419. When asked if he had made a request in writing asking for a ruling regarding collective bargaining and teacher's responsibilities during a radiological emergency, he answered that he had written to Tim Campbell on Nov. 1, 1984 and stated, "Could your department obtain a legal opinion or ruling from either the Pa. Dept. of Education or the Governor's Office concerning the "right" of school districts to assign teachers to chaperone during evacuations?" He had received no response at the time of the hearing from Campbell.
(Murray, Tr. 15054)

420 In regards to teacher's concerns about getting to their families, during a radiological emergency, Dr. Murray sited that these concerns involved the condition of highways going in and out of Phonexville. He said teachers were concerned about getting back into the EPZ if Routes 29 & 23 were designated as one way out (these concerns were of the teachers getting back into the EPZ after they had supervised their students on buses out of the risk area). He sited that the two-lane highways are "twisty, windy types of roads" "a mass exodus (which) might make the roads next to impassable". (Murray, Tr. 15126-15129)

421. Regarding teacher's concerns about re-entering the EPZ to get their families after they had chaperoned their students out, Dr. Murray was asked if he thought such a concern might have an impact on the teacher's willingness to stay in the event of a radiological em-rgency. Dr. Murray answered that he thought that this would indeed influence the decision on the part of some individuals. (Murray, Tr. 15092)

422. Parents' responsibility to get their children first permeates the community in the Owen J Roberts School District. Given the status of our unmet needs, the major question that must be answered in the plan is will be parents invading the schools to get their children. (Claypool TR 15,902)

423. "Statutes do not nest any authority in local public schools or the Department of Education to control conduct of teachers or other staff of private or non-public schools." (Worman, ff. TR 19,329 testimony unnumbered page before biographical summary, Worman TR 19,367-19,368).

424. Dr. Worman is not aware of any provisions in licensing requirements for non-public schools that would apply to teacher or staff of non-public schools. (Hassell TR 19,370). Worman is not familiar with Contractual agreements with non-public schools either. (Hassell TR 19,370).

425. Dr. Claypool has informed the Chester County Department of Emergency Services that it is quite clear that citizens have every intention of coming directly to the school facilities in order to pick up their children in the event of an emergency. In no way will the Owen J. Roberts School administration prevent parents from picking up their children. Therefore, Dr. Claypool has determined that in addition to school employees, a total of twenty-two (22) traffic controllers is an absolute must at their educational centers. (LEA Exhb. E-29)

426. The sufficiency of school staff beyond the school day to carry out the responsibilities presented in the in-service training day is a concern to the teachers union president of Owen J. Roberts. (Bollinger TR 16,107).

427. There is no contract language within Owen J. Roberts that would require staff to be available after the working day. (Bollinger TR 16,108).

428. The difference between field trips at school and evacuating would be at higher emotional levels on the part of the students, especially the younger ones. (Bollinger TR 16,110).

429. It is important to pre-identify teacher volunteers to participate in an emergency scenario as a result of an accident at the Limerick nuclear power plant. (Bollinger TR 16,114)

430. Teachers from Owen J. Roberts who attended in-service day on evacuation planning were afraid that if school staff's own children were subjected to the same type of plan with no more organization than the one they knew about, they were going to take control of their own children. (Bollinger TR 16,124).

431. If there was an emergency at Limerick, people would be fearful of their lives, fearful of their parents' lives or whoever they are not near. This information came from teachers who were in the evacuation area of Three Mile Island. (Bollinger Tr 16,128).

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.

445. PEMA's written testimony stated that in Mr. Hippert's opinion, like LEA-11, this contention deals with the availability of sufficient buses to effect an evacuation of the school children but becomes more definitive by raising the question: Even if sufficient buses are available, will there be enough drivers to man them? Follow-on questions are:

1. Are there letters of agreement with the bus companies to provide drivers as well as buses?
2. Do employment or union contracts authorize or conversely prohibit, the utilization of bus drivers to evacuate school children during a radiological emergency? If authorized, have the drivers been pre-identified?
3. Are bus drivers aware that some of them may be needed after the evacuation to transport the children from host schools to mass care centers?
4. Have considerations been given to the possibility that drivers living within the EPZ may give a higher priority to evacuating their own families than to transporting school children out of the EPZ? What is to preclude this from happening?
5. Has the possibility of drivers being required to make multiple trips to effect the evacuation been addressed in the ongoing training programs?

446. Mr. Asher testified that he believed that bus drivers should be informed of their role and responsibility if called upon to provide service in the event of a radiological emergency at Limerick. He was unaware of whether or not bus drivers have been informed of this responsibility at the time he testified on Jan. 25, 1985. He further stated that anyone who is obligated to take a risk should be informed. (Asher TR 20,209-20,210)

447. Mr. Asher stated that he was not positive that bus drivers would be taking a risk driving into the EPZ during a radiological emergency at Limerick. In his opinion, if they proceeded according to the plan, they should be outside the EPZ before there is a risk. However, based on his knowledge of the plans at the time that he testified, he stated that he did not believe that there was reasonable assurance that this would be the case. (Asher TR 20,210)

448. Mr. Kinard stated that NUREG 0654, Rev. 1, Planning Standard O could be reasonably interpreted to mean those who may be called upon to assist in an emergency, which would include school bus drivers, should receive some type of radiological emergency response training. (Kinard TR 20,281)

449. Mr. Kinard testified that if the training offered to bus drivers is based upon the training modules FEMA has been provided, that it is reasonable to expect that they would have a clear understanding of their role. He was unwilling to comment if the same would be true in the event that bus drivers did not receive such training, because it would be speculative, in his opinion. (Kinard TR 20,211)

450 Mr. Asher acknowledged that the statement that "the history of human response to emergencies shows a willingness by individuals to perform their duties", (FEMA, ff. TR 20,150 at page 26, answer 6) referred to emergency response in general, and did not refer particularly to radiological emergency conditions. (Asher TR 20,213)

451 Mr. Hippert was not aware of any of the details of the proposed arrangements with SEPTA with regard to the provision of bus drivers, other than the testimony of Mr. Thompson, Vice Chairman of SEPTA where he testified that if you are going to furnish a bus, you are going to furnish a driver. Mr. Hippert agreed that that reasoning made a lot of sense to him, although he was not directly aware of whether or not SEPTA can indeed provide those drivers. (Hippert TR 19,556).

452. Although Mr. Hippert's written testimony states that, "In making arrangements to fill reported unmet needs PEMA will ensure that procedures are established to provide a driver for each bus being made available" (Hippert, ff. TR 19,498 page 24, par. 20), he acknowledged that PEMA had not completed all the arrangements for meeting the unmet needs. He added that obviously, when these arrangements are completed, there would be a driver for each bus; otherwise the bus would be useless. However, when asked what assurances PEMA could provide regarding the sufficiency of bus drivers, he answered, "No more than what had been testified to by many, many people in these hearings." (Hippert TR 19,566).

453. When again asked by the representative of LEA what procedures had been developed or were in place to ensure that PEMA would be able to respond to an unmet need for bus drivers, Mr. Hippert stated, "You are assuming that buses will be furnished without drivers....Mr. Thompson made a very logical statement the other day that no one is going to give us a bus worth anywhere from \$50,000.00 to \$150,000.00 without a driver. That just doesn't make sense. I think if we are going to get buses, we are going to get drivers to go with them." (Hippert TR 19,556). He went on to add that he supposed that PEMA could ask some of the bus companies outside of the EPZ if they had drivers available, or that if there was enough time that there could possibly be some drivers available from the National Guard, but it takes a while to mobilize the National Guard. He also stated that in some of the school districts there might also be some individuals that are authorized to drive buses. However, Mr. Hippert testified that none of these specific procedures were being investigated or were under development to determine if additional bus drivers would be available. (Hippert TR 19,567). Even though he later testified that he felt that the bus shortage can be resolved, this record does not present sufficient evidence for the Board to make the same assumption about the provisions of buses or bus drivers at this time.

454. Mr. Hippert testified that he was not suggesting that PEMA wouldn't need some kind of backup drivers somewhere, but that basically, in his opinion, the drivers would come with the buses. However, he acknowledged that no one in PEMA had had any discussions with bus providers that might be called upon to assist in the event of an evacuation of the Limerick EPZ regarding the availability of bus drivers. He added that PEMA intended to make it a very definite point in its discussions with SEPTA but had not done so yet, and that the discussions with SEPTA are the only negotiations PEMA has had for Limerick buses. (Hippert TR 19,609).

455. Roger Tauss is the President and Chief Executive Officer of the Transport Workers Union Local No. 234, which is the union for all city transit and Frontier in suburban transit mechanisms of the SEPTA system. (Tauss TR 16,736). He has been a member since employed by SEPTA in June of 1975, and previous to being president he served three years as Chairman, which is like a chief steward position. Members of his union are employed by SEPTA. They cover the City Transit Division in the Frontier Division. (Tauss TR 16,737-16,738). The Red Arrow Division tends to cover Delaware County. Frontier is located in Montgomery County, and tends to cover Montgomery and Bucks Counties. Everyone in the Frontier division, the drivers and the mechanics, are members of Transport Workers Union Local No. 234. (Tauss TP 16,738).

456. The Transport Workers Union Local No. 234 has never had a communication from SEPTA regarding any proposed agreement or matters pertaining to the provision of SEPTA busses and SEPTA drivers to be called upon in the event of a radiological emergency at the Limerick Generating Station. (Tauss TR 16,739).

457. Although he had received a copy of the cover letter attached to the proposed agreement as part of a response to his inquiry about this matter provided by Mr. Bigelow, he had not seen a copy of the proposed agreement itself prior to the day he testified. (Tauss TR 16,740). At Mr. Taus's direction, Mr.

Ropers, a business agent of TWU Local No. 234, had sent a letter to Mr. Bigelow Montgomery County, asking them what was going on. Mr. Tauss described Mr. Bigelow's response as basically saying that it was none of their business, but he was sure when the appropriate time came, SEPTA would let them know what they were supposed to do. (Tauss TP 16,741).

458. Mr. Tauss had not made any attempt to discuss the matter with SEPTA because he did not think that there was a need at the time. He had that opinion because he did not believe his operators would go into an area such as the EPZ, in a nuclear emergency. He also testified that as president, he would instruct them not to do so. That being the case, it was his opinion that there was very little need to communicate with SEPTA on the matter. Mr. Tauss stated that it was his responsibility as president of the union to protect the bus drivers and their employment, and he would not want to put them in a situation where SEPTA would order them into a situation and they would feel obligated to refuse and then get fired. (Tauss TR 16,742). Mr. Ropers, went to the Frontier Division garage and spoke directly to a number of drivers at the request of Mr. Tauss. (Tauss TP 16,743). Mr. Tauss stated that everyone he spoke to, and everyone that Mr. Ropers spoke to, communicated the fact that there was no way they were going to go into the EPZ. (Tauss TR 16,748).

459. Mr. Tauss stated that he believed that SEPTA was obligated to discuss any proposed agreement with the Montgomery County Office

of Emergency Preparedness for the provision of busses and drivers with him in his capacity as president of the union. (Tauss TR 16,750-16751). In the event that none of the gathered volunteered if asked by SEPTA to go into the EPZ during a radiological emergency at Limerick, Mr. Tauss testified that there was no procedure that would allow non-union employees to take over the responsibility for driving the SEPTA busses into the EPZ. Mr. Tauss said his opinion, which had been sustained by arbitrators, was that only authorized drivers for the SEPTA busses would be members of his union, specifically relating to the Frontier Division. His statement was based on a collective bargaining agreement, which recognizes the Transport Workers Union Local No. 234 as the sole bargaining agents for certain work within the unit. (Tauss TR 16,752-16,753).

460. Mr. Tauss had no knowledge of any proposed agreement with the Chester County Department of Emergency Services for the provision of busses and drivers in the event of a radiological emergency at Limerick. (Tauss TR 16,754). In the event that other members of Transport Workers Union Local No. 234, other than the Frontier Division drivers, were called upon to drive busses into the EPZ to assist in evacuation, Mr. Tauss would have the same concerns. It was his opinion that to obtain approximately a hundred busses for use in Chester County, that it would be necessary to call on the City Division busses as well. As a result he briefly went to the Germantown Depot and spoke to twenty-five or more drivers. A number of the drivers told him that

they wouldn't go, and a number of them said that in that situation, they would drop their bus, even if it was in Germantown, to get their family and leave. Mr. Tauss testified that in his opinion there would not be any manpower available to go into Chester County or Montgomery County from the city. He believed that there was a possibility SEPTA would have a crisis on its hands just handling the abandoned busses in Philadelphia if the situation were to arise. (Tauss TR 16,755-16,756). Mr. Tauss stated that TWU Local No. 234 would have no problem with any kind of preparation training programs that were offered. But they would make it clear that this would not mean in any way that their drivers should be expected to actually utilize the training by going into an area in a nuclear emergency. The union would make clear it's position that the drivers would not be allowed to go into the EPZ in a nuclear emergency. However, Mr. Tauss would not stand in the way of training, because training does not endanger the lives of his bus drivers. (Tauss TR 16,759). Mr. Tauss expressed concern about bus drivers being asked to "volunteer" to drive into the EPZ in the event of a radiological emergency. Just because it has the form of volunteering, he stated that it doesn't mean that it's free of compulsion. As a result, his position would be that the bus drivers could not go into the EPZ. He would not want to put his operators in the position where SEPTA could pressure them to "volunteer" when that is not their role to do so. He did not believe that SEPTA would have the drivers nor the vehicles available to provide an estimated one hundred busses. (Tauss TR 16,760). There are approximately

forty-seven drivers employed at the Frontier Division, the Germantown garage has about two hundred sixty drivers, and the Callowhill Depot has about four hundred to four hundred fifty drivers; all of which are members of Transport Workers Union Local No. 234. (Tauss TR 16,762). Mr. Tauss did not believe that his drivers had ever been called upon to provide any other kind of emergency service under any kind of a situation that would be comparable to a radiological emergency at the Limerick Generating Station. (Tauss TR 16,763).

461. Mr. Tauss testified that the drivers that he spoke to did not think that radioactivity was going to stop at ten miles. Mr. Tauss stated that his decision not to allow the drivers into the EPZ was based on discussions he had with them, his understanding of what they wanted and what they felt they needed. He said that he thought if there were genuine volunteers that wanted to go into the EPZ, and that there would be no pressure involved in the situation, then it would be up to them individually. That is not the situation that he found when he interviewed drivers. (Tauss TP 16,779). Mr. Tauss personally spoke with about thirty bus drivers at the Frontier Garage and also at the Germantown Depot. Each of those individuals categorically stated that they would not participate in a emergency scenario where they were asked to drive their busses as volunteers into the Limerick Emergency Planning Zone. (Tauss TR 16,782)

462. Mr. Tauss stated that from what he had heard, he believed that SEPTA did not plan to provide any busses, that they were simply going through the motions. He stated that one day when he was in the hearing room waiting to be a wit he heard some testimony, that seemed to indicate that there was a concern about the availability of bus drivers within some of the bus providers that had been requested to provide assistance. He stated it was his opinion that there was a need to distinguish testimony coming from drivers or from union officials, as opposed to someone like Mr. Wert, the deputy manager for SEPTA, who in his opinion is a lawyer, who knows nothing about the operations, and doesn't even deal with the operations side of things. Mr. Tauss said he would have similar concerns about the testimony from school district superintendants regarding the availability of their school bus drivers in the event of a radiological emergency at Limerick. He would expect those people to know nothing about what their individual drivers would do. He stated, "There is no sense of the panic that this kind of a situation would create." (Tauss TR 16,806-16,807).

463. When Mr. Tauss spoke with the SEPTA bus drivers, he went out and presented a completely neutral front. It was the drivers themselves that he spoke to that raised the concerns he described in his testimony. (Tauss TR 16,807).

464. Mr. Tauss stated that he had never seen a situation where people would act contrary to what the union suggested. (Tauss TR 16,811). Mr. Tauss believes that he is a qualified expert in the field of transportation. He knows what it would take to evacuate in terms of vehicles, an area like this. (Tauss TR 16,812). If an agreement is arrived at between Montgomery County and SEPTA, Mr. Tauss stated that he might be willing at that time to conduct some sort of survey on his own of the union members to see who might be willing to volunteer as drivers to assist in the event of a radiological emergency, although he certainly would not want SEPTA to be part of the process. Nonetheless, he did not believe that a certain percentage of his union members would volunteer to be drivers. (Tauss TR 16,814-16,815).

465. At the request of Dr. Claypool and the Owen J. Roberts Board of School Directors, the Gross Bus Company drivers were surveyed to determine their willingness to participate in the event of a radiological emergency. (Claypool TR 15,869). Dr. Claypool was personally aware of the results, which are contained in his May 1, 1984 letter to the Chester County Department of Emergency Services. (LEA Exhb. E-29, Claypool TR 15,870) The following information is contained there, under the heading:

BUS DRIVERS

The initial survey indicated that twenty-five (25) of our district drivers will drive a school bus during a radiological emergency. However, many of these drivers did preface their statement stating that their families would come first, and they must be assured that their particular children will be taken care of. Knowing Murphy's Law in emergency situations, I believe that the twenty-five (25) figure more realistically would be a maximum of eighteen (18) .

Therefore, I conclude that our unmet driver needs to be thirty-seven (37) drivers. If you are successful in acquiring twenty-five buses and twenty-five (25) drivers from outside our area, there is still a need of twelve (12) additional drivers. Please identify where these drivers will come from.

466. 55 buses are needed to have a one lift evacuation of the 3200 to 3400 students in the Owen J. Roberts School District. Approximately 43 buses are currently under contracts that the school has with the Gross Bus Company. Although Mr. Gross sent a June 30, 1983 letter (Appl. Exhb. E-72) to Dr. Claypool pledging his support to provide a sufficient number of buses and drivers, Dr. Claypool received a second communication from Mr. Gross on July 11, raising concerns whether or not he could provide sufficient employees, and asking him to review a letter being sent to Chester County. Mr. Gross then called Dr. Claypool to discuss his concerns about liability and possible impoundment of contaminated equipment. At that point, Mr. Gross had questions as to whether or not his employees would participate in the event of an evacuation. That was the last communication that Dr. Claypool had with Mr. Gross. (Claypool TR 15,863-15,868).

467. Mr. Bigelow wrote a letter to schools thanking them for filling out the transportation provider survey form. (See LEA Exhb. E-5). Although the letter stated that a 90 minute training program covering possible emergencies at the Limerick Generating Station was being offered to those companies that request it, Mr. Bigelow agreed that the letter failed to inform the school district that it might actually have a Limerick assignment. (Bigelow TR 14,187). Mr. Bigelow testified that there had not been any requests from bus providers outside the EPZ to avail themselves of such orientation or training. When asked if this surprised him, he responded:

"With this plan nothing surprises me."

(Bigelow TR 14,188).

Mr. Bigelow stated that he would simply want the people to drive a bus, and that if they would like to know more about the plan, it is available to them. He said that the transportation people from each bus provider outside the EPZ had been informed that their drivers may have concerns, and that if there were any concerns, a simple orientation program could be provided. At that particular time, in fact, until a week before he testified, Mr. Bigelow had had no request inside or outside the EPZ regarding any bus drivers. (Bigelow TR 14,189). Nonetheless, Mr. Bigelow was unaware whether or not the bus providers had had such discussions with their drivers, and he had not intended to ask them if they had. (Bigelow TR 14,190). When asked what assurance he had that the drivers would be available, his only reply was that he had no assurance that they won't. (Bigelow TR 14,190-14,191). While this may be good enough for Mr. Bigelow, it does not provide sufficient basis for this Board to make a determination that there is reasonable assurance that protective measures can and will be taken to protect the public, in light of the evidence presented in this proceeding).

468. Montgomery County Commissioner Rita C. Banning stated that she was particularly concerned about provisions for transportation to evacuate the schools, as well as the general public. She requested information from Mr. Bigelow to document the status of arrangements and agreements for busses and drivers in the event that an evacuation is ordered due to a radiological emergency. On November 15, 1984, Commissioner Banning sent a letter to the school district bus providers listed in Annex I, Appendix I-2 of the Montgomery County plan, to obtain additional information regarding the status of agreements between the school districts and the counties. She expressed concern about the fact that the county plan does not include reliable letters of agreement to document the arrangements with support organizations and resource providers. The response that she received from Mr. Bigelow and the School district bus providers raised further questions about proper authorization of such "letters of understanding" and showed confusion or disagreement as to what the understanding was. Furthermore, the bus providers have not been informed by the County Office of Emergency Preparedness that they indeed have a specific "Limerick assignment" for which their drivers might be expected to volunteer. (Banning, ff.TR 17,752)

Commissioner Banning attached a number of letters from various school districts, which she received in response to her November 15, 1984 letter.

469. Dr. William Welliver, Superintendant of the Spring-Ford Area School District, wrote a letter to Commissioner Banning dated November 19, 1984...

"Your letter of November 15, 1984 refers to an agreement between this school district and the County to provide busses, vans and other vehicles and drivers for the evacuation of Montgomery County school children. I am unaware of the existance of such an agreement. If such an agreement has been executed and is on file, I suspect that exists without proper authorization....

"The issue of whether drivers will assume responsibilities, contractual or otherwise, in the event of an emergency is not resolved with any degree of certainty."

"A contract form was submitted to my office several months ago which indicated that the school district would provide access to drivers and vehicles to the extend of its ability. I declined to execute the agreement because it did not appear to establish any useful or dependable obligations on behalf of either party. I do not wish to give the impression that the district would not look favorably on committing its facilities for general evacuation purposes after the needs of the school population have been adequately addressed. However, it is quite likely beyond the authority of the school district to make a similar committment on behalf of the personnel who are regularly employed to drive district vans for district purposes."

470. Richard Shupp, business administrator for the School District of Springfield Township, sent a letter to Commissioner Banning on December 10, 1984 in response to her letters dated November 15 and December 4, 1984. (LEA Exhb. E-34)

"You ask if we "guarantee" nine school busses and nine bus drivers to go to the schools indicated in your letter. This is the first time that we have been informed that our busses have specific assignments. Nevertheless, in the event need to evacuate children from the Limerick area, Springfield would make every reasonable effort to fulfill its commitment.

"I am sure you understand that no one can absolutely "guarantee" that drivers and busses will be available under an extreme emergency situation. It normally would take us 45 minutes to one hour of travel time to reach the schools indicated. If the roads are congested because of the "emergency", then there would be no guarantee that our vehicles could reach their assigned destination. If there is an adequate warning period and the roads are relatively clear, we will make every attempt to complete our obligation."

476. Dr. William Wescott, Superintendent of the Perkiomen Valley School District, wrote to Commissioner Banning on November 20, 1984. His letter is also attached to Commissioner Banning's testimony (Banning, ff. TP 17,752) and was also admitted into evidence as stipulated testimony at His letter states ...

"Your second question indicated, by implication, that we were guaranteeing drivers for these vehicles. Nowhere in our plan did we ever indicate that there will be a guarantee of drivers. Our drivers have had the in-service training and we expect them to respond; but, I would never place myself in the position of guaranteeing that all drivers would show up in an actual emergency situation. I don't think that anyone could make such a guarantee."

"In the drill that we participated in on November 20th, one of the items that we wanted to test was the availability of drivers. With our vehicles, we also deal with two contractors who supply busses. In total, there are fifty-two drivers involved. All of them are part time and have other jobs or home responsibilities. In the drill on November 20th, we attempted to reach all fifty-two drivers. Fourteen (14) drivers could not be reached by telephone and three (3) refused to participate in an evacuation exercise."

"The drill did point out, however, that we would be short of drivers. This means that we must plan some alternative strategies to assure adequate driver coverage."

472. Dr. James B. Pugh is Superintendent of Lower Merion School District.

"The Board is unwilling to sign the suggested agreement because they are unimpressed with the language of the agreement especially Paragraph 3 indicating either party could rescind at any time." (Three attorneys on School Board disapprove the terms.) (Pugh TR 16,364,6,9,16,20)

"School board is also concerned with the fact that buses could be provided but no drivers. " (Pugh TR 16,365)

Dr. Pugh feels that these procedures were specifically directed toward emergencies at Limerick. (Pugh TR 16,370)

473. Dr. Thomas Davis is the Superintendent at Springfield Township School District. He said,

"Bus drivers could refuse to participate and since they are part timers it would take time to get them to the garage and get buses to indicated destinations." (Davis TR 16,665)

"It is not part of the bus drivers' job description to provide evacuation assistance in the event of a radiological emergency at Limerick." (Davis TR 16,658)

There must 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.

Specifically,

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.

473.1 Robert Bradshaw, project manager Emergency Management Services, Department of Energy Consultants, has admitted that there is a lack of response from particular day care facilities. (Bradshaw TR 13,191) (LEA Exhb. E-44) "Only facilities with a need would have responded." (Bradshaw TR 13, 191) He has further testified that if there was no response to the survey that there was no need. (Bradshaw TR 13,191) He has further stated that the most current and accurate information as contained in Draft 6 of the County plan contains information that is based on those people responding to a public survey that was sent out in the fall of 1983 versus the estimate from the 1980 census to show the unmet needs. (Bradshaw TR 13,198) Only to the extent that day care centers, nursery schools and other pre-school facilities responded to the needs survey were they incorporated into the municipal and county plans. (Bradshaw TR 13,200)

474 No letter was sent informing day care, pre-school and nursery schools that if they didn't respond to the survey buses would not be provided. (Bradshaw TR 13,207)

475 Energy Consultants has no knowledge of any follow-up done on a municipal level to determine whether surveys were received. (Bradshaw TR 13,198)

476 The only response to the general needs survey from a school was from Camphill Village/Kimberton Farm in Chester County (Campbell TR 19,899) and none were noted from the other counties, therefore no day care, nursery or pre-school facilities responded to the general population survey sent out in the Fall of 1983.

477 Windshield surveys consist basically of persons noting, while they are driving through an area, items of interest such as identifying day care centers. (Campbell TR 20,038)

478 Bradshaw of Energy Consultants admits there was a lack of response from particular day care, nursery and pre-school facilities and the Board finds Energy Consultants erroneously concluded that there were no special needs. (Bradshaw TR 13,191; Bradshaw TR 13,239-40)

479 It is appropriate to discuss, according to the Board's order regarding the admissability of reworded and respecified admitted LEA contentions (Sept. 24, 1984) the general transportation survey as being insufficient to determine the needs of the pre-school facilities. "The section gives no hint that unmet needs might be filled from outside the institution. Nor is it clear to us that the general survey covered these institutions. Therefore, we do not rule out item 2 under LEA-12." (Board's Memorandum and Order Ruling on Reworded and Respecified Offsite Emergency Planning Contentions, p.12)

480 Mr. Tim Campbell is the Chester County Emergency Management Coordinator. (Campbell TR 19,849-50) believes workable plans must be developed for pre-schoolers .(Campbell Tr. 19,909)

Mr. Campbell lends credence to the importance of planning for day care by referring to the day care population in Chester County as an "identifiable, fairly sizable group." (Campbell TR 20,076)

481 South Coventry has decided that the survey for the general population sent to resident in the EOZ is inadequate for their township and wants a "door-to-door survey which would be more correct and have a truer nature." (Whitlock TR 18,382)

482 A survey to the general population that is sent only to residents receiving utility bills in their name (Campbell TR 19,998; Bigelow 14,135) with a heading of "Dear Resident" (LEA Exhb. E-44) does not sufficiently identify day care, nursery and pre-school facilities in the EPZ.

This survey further states to complete this form for your household. (Appl. LEA Exhb. E-64)

483 Pre-school, day care and nursery school facilities would not necessarily expect the directors of these facilities to respond to a survey for the general population addressed "Dear Resident". (LEA Exhb. E-44) Possibly those that might respond would be those located in a private dwelling and operated by a resident which is a unique set of circumstances. "Those operated in a school, in a church, may not have received one." (Campbell TR 19,899)

484 There is a problem with identifying unlicensed day care, pre-school and nursery school facilities. (Campbell TR 19,999) (Bigelow TR 14,134)

485 The reliance on the general population survey to identify transportation problems for households in the EPZ dated August 1, 1983 (LEA Exhb. E-44) (Bigelow TR 14,135; Reber TR 19,813-14; Bradshaw TR 12,761) is clearly inadequate to meet the general and specific needs of the municipalities in the EPZ. (Whitlock Tr 18,383 and 18,384; Mattingly TR 17,822-23; Troisi TR 15,815-16; August TR 18,881; Lowery TR 18,695)

486 Ms. Elaine Troisi, pre-school director of the Little People's PreSchool had surveys attached to her testimony. They were admitted to show that she relied on the contents of the seven pre-school facilities she received surveys from when writing her pre-filed testimony. (Judge Hoyt TR 15,788)

487 Supervisor Mr. Hugh Kelly feels that it is necessary to do another general population survey to obtain more information on the transport-dependent population in Douglass Township. (Kelly TR 18,575).

488 Mrs. Troisi received a general public survey form at her home in Chester County. As director of Little People's PreSchool, she did not receive a general survey form or one she would use for the school. (Troisi TR 15,815) She expected there would be a different survey for the pre-school. (Troisi TR 15,818-19)

489 Mr. Richard Whitlock, chairman of the supervisors of South Coventry Township, questioned the accuracy of identifying transportation dependent persons through the general public survey distributed throughout the emergency planning zone because the survey was distributed to those households that utility bills were in their names. (Campbell TR 19,998) (Bigelow TR 14,135) "Many of the residents in our municipality didn't receive a survey form." (Whitlock TR 18,382)

490 South Coventry Township wants a "door-to-door" survey which would be more correct and would have a truer nature." (Whitlock TR 18,384)

491 There is a concern that the survey must be accurate and comprehensive. The survey is to be used as a tool to identify both the general population and the pre-school aged children. There is presently no adequate assurance that this sensitive population is completely covered in the general survey for the population in the Emergency Planning Zone.

492 When asked by Judge Cole if Energy Consultants was satisfied with the way day care, nursery or pre-school facilities were identified to detect any needs these facilities might have, he said yes, but the survey wouldn't stand alone. (Bradshaw TR 13,758)

493 Even if pre-schools, nursery schools or day care centers are listed in the various plans on both the municipal and county level, this measure alone did not provide adequate assurance that the needs are all met or if passed on that they are satisfied.

494 No pre-school transportation needs have been passed on to Pottstown Borough because Mr. Mattingly, transportation officer for emergency planning in Pottstown Borough was "under the impression that day care centers, the institutions and high rise facilities and some of the homes would all be taken care of separately. I would not have anything to do with their evacuation at all." (Mattingly TR 17,822)

495 The assumption was made by Mr. Mattingly that day care, pre-school and nursery school facilities would report to a collecting point and be picked up and taken out from there. (Mattingly TR 17,823)

496 The people that run the day care, nursery, and pre-school centers are responsible for transportation and developing a workable plan (Bigelow TR 14,137), yet two out of three witnesses who testified on this issue said this was a concern to them. (Troisi TR 15,809) (Seidel TR 16,847-48)

497 Nowhere are day care centers, nursery and pre-schools listed in the municipal plans draft 6 by name. There is no way to determine whether pre-school transportation needs have been incorporated in the public school needs survey numbers as reflected in Attachment G of the municipal plans. (Appl. Exhb. E-6 through E-48)

498 There has been no contact with any member of the Berks County emergency management staff and school staff responsibility when planning for the pre-school facilities. (Reber TR 19,739)

499 There is no assurance that townships and boroughs are cognizant of their role in assisting day care directors.

500 PEMA states that once a day care RERP is completed it will be distributed by the facility to any faculty staff at the day care center, the Department of Public Welfare Regional Office, the municipality involved, the county involved, and the host facility. Any review by the municipality that I referred to, was not a formal review, but rather simply a check to see that the appropriate blanks had been filled in and that a letter had been written to the parents and so forth.

(Hippert TR 19,630)

501 Advice being communicated to the day care, nursery and pre-school facilities would "Primarily be through the public alert system, the emergency broadcast system and depending on what arrangements are made at the local level through telephone contacts with the municipal EOC should the day care center still be open at that point. Hopefully, they'd close at the alert stage." (Campbell TR 20,086)

502 Ms. Troisi requested a set plan of notification for her school to assure her children and staff were protected. (Troisi TR 15,808)

503 No public information brochure has been sent out informing residents, including those residents who are directing day care, pre-school and nursery school facilities, of the planning process. (Bradshaw TR 13,264) The proposed lack of knowledge of the planning process on the part of these pre-school witnesses (Appl. Proposed Finding 294-312) is indicative of more general need for training and information. Energy Consultants believes public information provides necessary orientation. (Bradshaw 13,215)

504 The Board requires that the public information brochure under development should be reviewed by PEMA and FEMA for adequacy and distributed to the public within the EPZ, being sure to distribute not only to residences with electric utilities in their name and households, but to the entire EPZ population, including special needs facilities.

505 There is no formal review training or communication command or accountability at the municipal, county, state or federal level of a consistent or mandated nature, therefore approximately 2,000 children in the EPZ will not be adequately protected in an emergency. (Troisi ff. TR 15,780 at p.1) (Appl. Exhb. E-1, E-2, E-3) The number of children is an estimate based on the seven facilities with known population averaged, times the 60 facilities identified in the three risk county plans, and divided by the average enrollment plus 444 children at Upattinas. (Hurst TR 16,555)

506 Although not admitted for the truth of the matter (Hoyt TR 15,788) this population represents only 7 facilities out of the 60 total identified in the three risk county plans. (Appl. Exhb. E-1, Appendix N-9-1; Appl. Exhb. E-2, Appendix N-1-3 and N-1-4; and Appl. Exhb. E-3, Appendix N-5-1 and N-5-2)

She has relied on these surveys and her follow-up phone calls when preparing her pre-filed testimony. (Hassell TR 15,788)

507 Draft 6 shows that there are five pre-school, day care or nursery facilities in Berks County, twenty-two in Chester County and thirty-three in Montgomery County. (Bradshaw TR 13,229-13,230)

508 Department of Education is responsible for including nonprofit State registered or licensed private schools in school district plans. (Annex E App 11, E-11-2 #5) and that maintaining procedures for response to a radiological accident are understood and accepted by school/institution administrators. (Annex E- Basic Plan, E-17 number 7 (a)).

509 There are no hard numbers to adequately determine how many pre-school, day care and nursery school children are within the general population in each borough and municipality because neither individual or county plans list the numbers in facilities separately from other transportation needy.

510 FEMA states that staffing deficiencies exist at the municipal level. There is no assurance that day care needs can be met at a municipal level. The counties of Chester and Montgomery are passing on unmet bus needs to PEMA. (Campbell TR 19,549)

511 It is commonly agreed on that the municipality where the day care, nursery or pre-school is located is responsible to ensure there is a workable plan for this special group as part of their municipal population being planned for. (Hippert TR 19,563; FEMA

512 Staffing deficiencies and availability would affect the ability of the municipalities to assist day care facilities in locating the necessary transportation and host facility resources. (Whitlock TR 18,449; Lowery TR 18,754; Giamo TR 19,077)

513 Staff tends to view radiological events differently from medical emergencies. (Troisi TR 15,822) Directors from three out of three pre-schools have staff who will not remain at the school because they have children within the EPZ (Seidel TR 16,853 and TR 16,846) (Hurst TR 16,551) (Troisi TR 15,804 and 15,822) and feel their families' needs have to be a priority. (Seidel TR 16,853 and 16,846) (Hurst TR 16,551) (Troisi TR 15,804 and 15,822) There is no assurance on the staff's part that their children are protected because of lack of information given parents, staff and the community, lack of municipal assistance (Seidel TR 16,847-48), no contact has been made. (Troisi TR 15,807) (Seidel TR 16,845)

514 Directors of private schools do not feel they could keep staff from leaving school and might leave themselves during a radiological event at Limerick. (Hurst TR 16,552) (Seidel TR 16,847)

515 No studies have been done on teacher/pre-school staff response with regard to Limerick Nuclear Generating Station. (Bradshaw TR 13,223)

516 No directors of any pre-school, nursery or day care facilities were contacted to determine if staff would remain in a radiological event if they had children of their own inside the EPZ (Bradshaw TR 13,223) in order to assess staffing needs.

517 Staff wouldn't transport children from pre-school facility to host facility. (Troisi TR 15,804-05) (Seidel TR 16,847)

518 FEMA states that NUREG-0654, planning standard "O" and 10CFR 50.47 (b)(15) mandates that there be training for those who may be called upon to assist in the event of an emergency. Nowhere in the record does anyone show intent to train or hold orientation meetings with pre-school, nursery or day care staff--with the exception of Upattinas School Open Community Corp. which is listed as a private school in the Downingtown School District plan. (Hurst TR 16,559)

519 FEMA may make a random check for some of these plans as they are developed for day care, nursery and pre-school facilities. We will not review each one, but we could make a spot check of them." (Hippert TR 19,564)

520 Based on a review of the county and municipal RERP's as passed on by FEMA, FEMA is not assured that children in day care, nursery and pre-school facilities are protected. (Update to FEMA's pre-filed testimony on the admitted LEA contentions p. 14)

521 Although it has been documented by FEMA (Update to FEMA's pre-filed testimony of the admitted LEA contentions p. 14) that no planning standard exists in NUREG 0654 or 10CFR 50.47, FEMA believes participation and commitment of staff of very young children is essential to the workability of the plan. (Update to FEMA's pre-filed testimony on the admitted LEA contentions p. 17)

522 There is general agreement among the Federal and Pennsylvania Emergency Management Agencies and the counties within the Emergency Planning Zone that the needs of facilities such as day care and nursery schools are the responsibility of the municipality that the facility is located in. (Bigelow TR 14,134) Staffing deficiencies at the municipal level have not been resolved at this point. (Kinard TR 20,165) There is no assurance that day care, pre-school and nursery needs can be met at a municipal level.

523 The Board would have to rule that it would be illogical to conclude that the day care population is protected should there be a radiological emergency based on the fact that the facilities didn't respond and then making the assumption that these facilities that know little or nothing about their plans had no unmet needs. (Appl. Proposed Findings 294-312) (Bradshaw TR 13,191; Reber TR 19,826)

524 Once it is decided that a review process is to take place, the responsibility to determine whether the submitted pre-school, nursery or day care facilities are adequate is necessary to ensure protection of this sensitive population.

525 The Applicant hasn't made any progress to show that the planning process is moving along. Municipal plans are not signed.

526 There is no assurance that this special population is protected because of the contradictory information and inconsistencies in the planning and reviewing process from county to county.

527 Directors of facilities need more assurance that a listing in a plan, which does not accurately reflect the number of children at the facility that would be part of the general municipal population, are protected by any political subdivision.

528 Director of Upattinas School, Sandra Hurst, would be included in the Downingtown Area School District (Hurst TR 16,559) since the school has other children besides pre-school children.

529 When asked by Applicant if any of Ms. Hurst's concerns expressed in her pre-filed testimony were satisfied as a result of being listed as a revision to section "O" of the Downingtown School District, she replied, "no, it does not." (Hurst TR 16,559)

530 When asked if the municipal plans which you have reviewed contained adequate provisions for protection of day care, nursery and pre-school facilities, FEMA said the necessary arrangements have not been included. (FEMA TR 20,179)

531 Berks County emergency coordinator was not aware of any responsibility fixed for reviewing plans from day care, nursery or pre-school facilities, (Reber TR 19,741) or find out if the facilities have completed their plans. (Reber TR 19,742)

532 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. (FEMA, ff. TR 20,150, page 37).

533 Mrs. Elaine Troisi, director of the Little People's PreSchool of the Pughtown Baptist Church, made it clear that she did not know who or where to turn to for transportation assistance. (Troisi TR 15,818 & 15,819)

534 Reasonable assurance of a guarantee for protection for pre-school transportation needs should be in the form of a written commitment. (Troisi TR 15,828)

535 Arranging for host facilities and transportation for pre-school, nursery and day care facilities is a difficult task especially for private centers. Troisi states that although she would comply with whatever information was disseminated to her, "there is an onus of responsibility that is far beyond my capacity to meet." (Troisi TR 15,809)

536 In some cases directors of private schools in particular are not able to find transportation and host facilities on their own. (Troisi TR 15,809)

537 Ms. Seidel, one of three witnesses testifying on LEA Exhibit E-13, was concerned about transportation being provided. (Seidel TR 16,847-48) Upon contacting Mr. Harwood, Emergency Management Coordinator for Pottstown Borough to report transportation needs with her bus provider, she was told to call her provider and once her plan was together to come to Borough Hall for a review. "And that was the extent of his assistance." (Seidel TR 16,847-48)

538 Chester County has identified only one case of transportation needy within the county at the time of Mr. Campbell's testimony. They are letting PEMA know if bus needs change (Campbell TR 19,915) which could increase the number of bus needs Chester County is passing on to PEMA.

539 PEMA has no knowledge of whether or not directors of day care, pre-school or nursery schools have located host facilities or not. (Hippert TR 19,608) This information would be available on a county level.

540 Even though PEMA is not aware of any significant problems in efforts by day care directors to identify host facilities (Hippert TR 19,618) there is also no check on the planning process built in the system.

541 Directors desire more communication, visits to facilities. (Seidel TR 16,848) Up to this point these facilities have had little or no contact from emergency planning personnel. (Troisi TR 15,807)

542 Applicant (Proposed Findings 294-312) states that the three preschool witnesses "knew little of the overall planning process for their particular facilities." Instead of dismissing these witnesses for their lack of knowledge, the Board finds that training is as necessary for staff working with pre-school children as it is for the staff working with other school populations.

543 Training on sheltering scenarios, planning concepts, assigned responsibilities and the emergency planning process (Wenger TR 13,015-16 and 13,098) (Appl. Exhb. p.14 & pp. 23-25) has not been provided to pre-school staff and directors. This demonstrates that the Applicant erred when it concluded that training for school staff is complete. (Applicant's Proposed Finding 228) Teachers have not been fully informed of the contents of plans for pre-schools. (Seidel TR 16,853 & 16,846) (Troisi TR 15,804 & 15,822) (Hurst TR 16,551)

544 Applicant (Applicant's Proposed Finding 304) incorrectly identified only one concern regarding parents expressed by Ms. Ilona Seidel of the Pottstown Day Care Center. She also identified a problem with staff willingness to remain in the event of a radiological emergency. Ten staff out of seventeen are presently unwilling to remain. (Seidel TR 16,846) Out of the seven remaining she has not yet determined what percentage of these staff walk to work rather than drive. (Seidel TR 16,847 & 16, 849)

545 The majority of the staff at the Pottstown Day Care Center are parents of children in the EPZ whose parental responsibility takes precedence over their staff responsibility at the school. (Seidel TR 16,853)

546 Energy Consultants has not offered any training to pre-schools, nursery or day care facilities (Bradshaw TR 13,207) although they have said that training is good for everyone involved. (Bradshaw TR 13,214-15) It is the NRC staff's view that training is relevant to exploring the basis for participation and commitment of school staff. (Hassel TR 13,213)

Training should be made available to all pre-school staff.

547 Listing day care, nursery and pre-school facilities in the various plans does not provide adequate assurance that responsible staff and directors of facilities will know what to do in a radiological emergency. PEMA can't provide for staffing needs. (Hippert TR 19,555-56)

548. Each organization shall provide training of individuals responsible for the planning effort.

Each organization shall assure the training of appropriate individuals. (NUREG 0654, p. 49, Public Education and Information)

Information should be made available to the public in case of an accident.

Each organization shall provide a coordinated periodic (at least annually) dissemination of information to the public regarding how they will be notified and what their actions should be in an emergency. (NUREG 0654, I paras (a)(b)(c))

In view of the above discussed deficiencies, it is recommended that the following remedial actions be taken to insure that pre-school age children are adequately protected:

Pre-school facilities of all types with enrollment of fifteen pre-schoolers or more should be granted the same planning standards as set forth in the regulations for private and public schools.

549 The deficiencies include:

(1) The general population survey of the Fall of 1983 did not adequately identify day care facilities, pre-school and nursery schools, only residents.

(2) Because there is no formal review process, confusion and inconsistency of response personnel roles exist at every political subdivision.

(3) There are no letters of agreement with host facilities and transportation providers to reassure the directors of the facilities and their staff that they are going to be adequately protected, thereby there is an added reluctance on the part of the staff of these facilities regarding their willingness to participate in a radiological event at Limerick. Furthermore, no staff training is required at this time for these facilities.

(4) Also documented throughout this contention and LEA's proposed findings (Deferred Contention #1 and #2) are significant municipal unmet needs, particularly in the areas of staffing for a 24 hour period and lack of adoption and reasonable assurance that municipal plans in the Emergency Planning Zone are implementable at this time.

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.

- 550 Bernard Wolf - Director of Camphill Special School for Retarded Children (Wolf, Tr. 16244)
- 551 Wolf has not received confirmation that buses are available for evacuating the students and staff. (Wolf, Tr. 16245)
- 552 No confirmation on using Deitrich Corner Fire Company as a relocation site. (Wolf, Tr. 16245)
- 553 Wolf has written to county administrator to inform him that the school is unequipped to handle emergency at Limerick and have not received a response from the county. All relocation sites are within the plume zone - all emergency evacuation sites are closer to Limerick than the school. The plan of the schools was not developed with Limerick in mind. Chester County Department of Emergency Services is informed that plan is not applicable to a Limerick emergency. (Wolf, Tr. 16250)

555(A) Wolf states he cannot be responsible at this point in time for evacuating his population in the event of an accident at the Limerick power plant. The school plan is subject to inspection by Department of Public Welfare on a yearly basis and has passed. "I believe we have met the legal mandate and have made an honest show of where we can no longer deal with the situation. (Wolf, Tr. 16252)

555(B) The schools emergency plan provides for parents to pick up children up within 36 hours and is not adequate for an emergency at Limerick. (Wolf, Tr. 16254)

555(C) It has not been established as to whether or not school staff will remain with students. (Wolf, Tr. 16255)

555(D) A total evacuation could only be accomplished by Camphill vehicles by making multiple trips. (Wolf, Tr. 16257)

555(E) There is no understanding that finding transportation was Mr. Wolf's primary responsibility. He was told that either Energy Consultants or East Nantmeal Township Emergency Coordinator or Chester County DES would work it out. (Wolf, Tr. 16295)

- 554 There have been no discussions with officials regarding procedures that would provide additional supervisory assistance in case of radiological emergency. (Wolf, Tr. 16299)
- 555 There has been no further discussions with anyone and Mr. Wolf is waiting for something in writing that addresses some of their questions. (Wolf, Tr. 16306)
- 556 Andrew Dill is faculty Chairman of the Kimberton Farms School. (Dill, Tr. 16311-16313)
- 557 There are not sufficient vehicles available for the implementation of the proposed evacuation plan, nor are there drivers or supervisory personnel available to meet needs. (Dill, Tr. 16317-16318)
- 558 There are approximately 260 students and the need is for at least 3 - 72 passenger buses and these needs are not met. (Dill, Tr. 16324)
- 559 The staff members have discussed whether they would remain with the students in an emergency and the general feeling was that they did not know how they would react. (Dill Tr. 16330)

- 560 The session with Energy Consultants was an overview of nuclear power and was not a training session on how to respond in a radiological emergency. (Dill, Tr. 16336-37)
- 561 There has been no effort to identify what buildings are safe for sheltering and no food service. There has been nothing done with regard to sheltering or planning for sheltering. (Dill, Tr. 16338)
- 562 There has been no response from Energy Consultants or Chester County or East Vincent Township concerning the need for additional adult supervisors. (Dill, Tr. 16343-44)
- 563 Helen Zipperlen is Director of Camphill Village Kimberton Hills, West Vincent Township, Chester County, a farm community of about 120 people, of whom about 28 are children, and about 50 are mentally retarded adults. (Zipperlen, ff TR 16,070 at p.1)
- 564 Mrs. Zipperlen states she does not know how to insure the safety of the village (Zipperlen, Tr. 16,036). She does not expect that the staff will cooperate in a radiological emergency. (Zipperlen, Tr. 16055) Mrs. Zipperlen has received only verbal assurances that buses will arrive at her facility (Zipperlen, Tr. 16061). The training sessions on sheltering were only attended by one member of the staff at Camphill (Zipperlen, Tr. 16067). (Zipperlen, ff, Tr. 16070, pages 2,3) Mrs. Zipperlen states there is no way of knowing how long it will take to implement an evacuation, because people are distributed over 400 acres, and out of reach of telephones, and that all staff are volunteers and all have refused to attend meetings on sheltering (Zipperlen, ff, Tr. 16070, pages 2,3)

LEA-22

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.

PEMA's written testimony stated that in Mr. Hippert's opinion, for this contention the issue is: Have farmers who reenter the EPZ as emergency workers after an evacuation to tend livestock received adequate training and will sufficient dosimetry be available? Follow-on questions are:

1. Have the actual number of farmers who would be in this category been identified?
2. Will sufficient dosimetry be available to allow for multiple reentries?
3. What does the definition of "livestock" include?
4. Will an informational brochure be issued to farmers? If so, when and how often?
5. In addition to ongoing training, will refresher training be offered to farmers on a regular basis?

(Hippert, ff. TR 19,498, page 25) (Also Hippert TR 19,333-19,334).

565 As a Management Analyst and the Emergency Management Coordinator for the Pennsylvania Department of Agriculture, Robert Furrer has been responsible for emergency response planning in the Department since 1976. Within this responsibility, he is involved in the revision of Annex E, Fixed Nuclear Facility Incidents of the Commonwealth Disaster Operations Plan in Agriculture Department areas of interest.

566 The Pennsylvania Department of Agriculture does not have on hand data regarding actual numbers of farmers in the Limerick plume EPZ who may require dosimetry and KI. Such information is developed at the county level. The state emergency plan's use of the terms "livestock" and "farmer" is no more restrictive than the commonly accepted dictionary definitions. Webster's Seventh New Collegiate Dictionary defines "livestock" as "animals kept or raised for use or pleasure; esp: farm animals kept for use and profit." "Farmer" means "a person who cultivates land or crops or raises livestock." The Department has no data as to the question of whether so-called "USDA" lists would be used to limit registration of farmers. (FEMA ff TR 19,409)

567 It is difficult to identify farmers. One must use a combination of lists. The State has several lists of certain types of farmers, and there is a basic list by township and county. But that does not include all the people just raising a few animals. A farmer with a large herd of cattle might want to have himself and his hired hands registered as emergency workers for that farm. He might want to have himself, his wife, his daughter, or his sons. There is nothing to preclude that in any of the guidance the Department of Agriculture has put out. (FEMA ff TR 19,421)

568 County Agriculture Extension Services in Pennsylvania don't maintain the State's list of dairy and hog farmers. They have no copy, only the master list that the Commonwealth maintains. (Furrer TR 19,437).

569 The County USDA has the responsibility to compile a list of farmers. Only preliminary lists are available and could use some additional work. (Hippert TR 19,623)

570 In Annex E- State Disasters Operations Plan p. E-15 Number 3(c) the Dept. of Agriculture is responsible for maintaining a site-specific, current list and/or map of the location of dairy herds within the ingestion exposure pathway. There is no evidence that this task is completed for Limerick.

571 PEMA has been advised by the Pa. Dept. of Health that 10,500 units of KI are being purchased from Carter Wallace (CW). The shelf life of KI expires in 1987, but we do believe that the shelf life can be extended. In addition to the tablet form, the Dept. of Health has also ordered 364 units from a company called Roxanne. It takes about 6 weeks for the liquid material to be delivered. It has a shelf life until January 1, 1986. The liquid KI is for nursing homes and hospitals where the tablet form of KI is for emergency workers. (Hippert, Tr. 29422)

572 Even though Mr. Hippert has testified that these "identified" supplies (Hippert, Tr. 20422) are being negotiated, it has not yet been determined when they will arrive (Hippert, Tr. 20423).

573 Part of the process for allowing farmers to re-enter the Emergency Planning Zone is a verification by the county agricultural agent of their status as a farm person or employee. "The agricultural agent would have to utilize the list available from the emergency board, plus other information such as potentially contacting the municipal staffs at the relocation EOC point to verify a particular name as being known as a member of the farming community." (Campbell, Tr. 20054)

574 The County Doesn't have any other information available to it, other than the USDA list, to identify persons who might be classified as farmers, who might want to regain re-entry to the emergency planning zone in the event of a radiological emergency at Limerick. We depended on the list developed by the USDA Director. We identified a total of 100 in the Berks County portion of the EPZ, and we did contact all of those people. (Reber, Tr. 19752)

575 There is an assumption that the USDA farmer lists are being followed up on. PEMA says it is the county's job. (Hippert TR 19,622).

576 At this time, there is no general distribution for the brochure for farmers for the Limerick EPZ. (Bradshaw TR 13,705)

578 Furrer, who supervised the writing of the brochure for farmers at TMI (Furrer TR 19,428, 19,429) was uncertain if final authorization for the developing and distributing of the Limerick brochure had been authorized. (Furrer TR 19,429-19,430)

579 The Department of Health is making the arrangements for KI and liquid KI. They are working with the two suppliers to see what they can do because of the question of shelf life. The Department of Health has agreed to buy the KI needed for Limerick including anything needed for Penn Hurst or Graterford. (Hippert TR 19,580).

580 I know to a certain extent it is. The list, it is my understanding, could use some additional work on it, but preliminary lists have been made up. They have to be made up so that we could consider how much dosimetry needed to be purchased. (TAYLOR, Tr. 19622)

581 Farmers have to identify themselves as farmers to be allowed to re-enter the EPZ. (Reber TR 19,752)(Proposed Finding

582 The USDA list for farmers in Berks County identified 100 farmers (Reber TR 19,757).

583 The figure of 25 farmers that have taken advantage of the training, is the total number of attendees at both training sessions held. (Reber, Tr. 19751)

584 It was unknown to the Department of Agriculture Emergency Management Coordinator as to whether the County Extension Services employees or agents provided an estimate of farmers within their EPZ areas to County planners so that sufficient supplies of dosimetry/KI could be purchased. (Furrer TR 19,431-19,432-19,436)

585 When asked by Applicant if the supervisors from Douglass Township, Mr. Kelly, knew that farmers could re-enter the EPZ to care for their cattle, he responded that he didn't know whether or not any individual is going to do that" and that alot of these farms rely on their children to help with chores. (Kelly TR 18,658).

586 The determination of the number of units to be available was based on one farmer per farm needing dosimetry and KI. (Reber TR 19,757) The hundred units of dosimetry and KI are also the same 100 that are to be used for emergency workers. (Reber Tr. 19421)

587 The additional dosimetry on reserve in Berks County of one hundred units must be used for emergency workers as well. (Reber 19,757)

588 PEMA doesn't know to what extent farmers have been trained. (Taylor TR 19,623).

589 No farmer brochure has gone out in the Emergency Planning Zone around Lin-
erick to educate farmers in the use of KI and dosimetry or care of their livestock,
The Dept. of Agriculture EMC had not seen or reviewed the training module for farmers in the EPZ. (Furrer, Tr. 19425 - 19426)

590 The training of farmers in Berks Emergency Planning Zone was principally in the use of dosimetry. It was principally for their own protection when they re-entered the EPZ. The care of livestock or food and water protection was not covered. No information was provided with regard to protective measures to take for the protection of animals. (Reber Tr. 19755)

591 Mr. Furrer had not seen Energy Consultant's training module for farmers for a radiological emergency.

592 In a response to a question: "Would farmers be restricted from entering the Emergency Planning Zone if not listed on the county list of farmers?", Mr. Furrer testified, "That is not within the jurisdiction of the Agriculture Department, and I really don't know." But I would like to say the intention of the Department is there's no artificial constraints on who says he's a farmer."

The list, it is my understanding, could use some additional work on it, but preliminary lists have been made up. They have to be made up so that we could consider how much dosimetry needed to be purchased. (Furrer, Tr. 12622)

593 PEMA has been advised by the Pa. Dept. of Health that 10,500 units of KI are being purchased from Carter Wallace (CW). The shelf life of KI expires in 1987, but we do believe that the shelf life can be extended. In addition to the tablet form, the Dept. of Health has also ordered 364 units from a company called Roxanne. It takes about 6 weeks for the liquid material to be delivered. It has a shelf life until January 1, 1986. The liquid KI is for nursing homes and hospitals where the tablet form of KI is for emergency workers. (Hippert, Tr. 20422)

The Draft County and Municipal REPPs are 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 there is no assurance of adequate capability to conduct route alerting.

There is no evidence of fire companies maintaining rosters on the availability or turn over in fire personnel responsible for municipal route alerting as Energy Consultants suggested in their testimony.

(Bradshaw TR 13,655) Maintaining a roster of individuals generally does not assure that route alerting functions during a radiological event will be performed. (Bradshaw TR 13,655)

(a) There is no assurance in the County or Municipal RERPs that the National Guard will have time to mobilize to carry out the responsibilities with regard to towing and providing emergency fuel supplies along state roads.

(b) There is no assurance provided in the Municipal or County REPPs 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.

594 When the Colonel was asked if he would have any difficulties with the National Guard carrying out their responsibilities regarding towing and providing fuel he responded "I don't think that is a primary mission for us, necessarily." (Klynoot TR 19,671-19,672)

595 One of the roles of the National Guard in an evacuation scenario for the Limerick Nuclear Power Plant is to assist with the removal of vehicles. This is done as a back up to municipal services. (Klynoot TR 19,648).

596 When Col. Klynoot was asked to what extent could the National Guard replace, not just support, the municipal and PECO volunteers in a radiological emergency at Limerick, he responded, "I find that difficult to answer." (Klynoot TR 19,648)

597 The primary responsibility for towing does not rest with the Pennsylvania Army National Guard. (Klynoot TR 19,654).
"However, if we were called upon to move vehicles out of the way, we would be able to do that, I think." (Klynoot TR 19,654).

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"However, if we were called upon to move vehicles out of the way, we would be able to do that, I think." (Klynoot TR 19,654).

601 The National Guard doesn't have many bus drivers. It would take them awhile to arrive in the EPZ. (Hippert TR 19,589).

602 It would take approximately six hours to assemble and two additional hours to get to the Berks County EPZ with some revisions possible.

(Klynoot TR 19,655-19,666) Snow could cause further delays. They would deploy units as they became available. (Klynoot TR 19,666)

603 The National Guard doesn't have many bus drivers. It would take them awhile to arrive in the EPZ. (Hippert TR 19,589).

604 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. (FEMA, ff, Tr. 20,150 p. 40 J(b))

605 PennDot is responsible for providing for the clearance of obstacles to traffic flow on main evacuation routes. This includes snow and wrecked or stalled vehicles. This effort may be augmented by National Guard when available. (Annex E- Basic Plan- E-20 22 (c)).

606 In coordination with the National Guard, emergency fuel distribution points on main evacuation routes must be maintained by PennDot. (Annex E- Basic Plan, p. E-29 22 (d))

607 "The Department of Transportation is not actually a towing-type organization. We have very little tow equipment. When we have a vehicle that needs to be towed, our primary method of accomplishing this is to go to the State Police who have agreements with local garages". (Farrell, Tr. 20114)

608 "Our responsibilities are state highways, okay. That is what we work on. Local highways are the responsibility of the local municipalities. Now, as far as insurance purposes or anything else are concerned, we would have no problem working on a local highway. We could do that. Of course, that is not our mission. That is not our job. No." (Farrell, Tr. 20116)

609 The district engineer from Philadelphia area is the responsible person to deploy snow vehicles. (Farrell 20,102) Farrell and Starasinic would not be responsible for contacting the local districts to deploy snow vehicles. (Farrell 20,102) No witness testified from District 60, which is the Philadelphia area district, that would cover snow removal in the Limerick area, (Farrell 20,102) who could be responsible for deploying snow vehicles. There is no proof in this record that could guarantee reasonable assurance that there are sufficient resources available to provide snow removal.

610 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. (FEMA, ff, Tr. 20,150 p. 40 J(b))

611 There are no contracts with the municipalities that shows that there are sufficient road clearance and snow removal resources available and they are not incorporated into the plan. (Bradshaw TR 13,706- 13,707)

612 Witnesses for PennDot were not aware of how many municipalities or boroughs that they had either primary or secondary responsibility for snow removal in an emergency at Limerick. (Starasinic TR 20,110)

613 PennDot has primary responsibility for towing in all but one municipality in the EPZ which is Lower Frederick Township. (Appl. Exhs. E-6 through E-47 excluding E-10)

614 Traffic congestion from evacuating residents would affect the ability of PennDot to remove snow, if any, in an evacuation scenario. (Starasinic TR 20,113)

615 South Coventry Township would have to hire tow trucks. (Whitlock TR 18,400)

616 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. (FEMA, ff, Tr. 20,150 p. 41)

617 Letters of agreement for towing services are being sought in Upper Providence Township. (Waterman TR 18,079).

LEA-2

The unadopted RERPs fail to provide reasonable assurance that each principal response organization has sufficient staff to respond to and to augment its initial response on a 24-hour continual basis, or that the assigned staff can respond in a prompt manner in case of a radiological emergency at Limerick.

618 According to FEMA Region III policy, FEMA will not evaluate substitute page changes updating staffing changes, such as those contained in the attachments to FEMA Exhb E-3 unless the information is transmitted to them through the proper channels by PEM or the NRC under the provisions of the MOU. (Asher TR 20,322-20,323)

619 The attachments to FEMA Exhb E-3 represent pages from 18 different municipal plans which were entered into evidence in this proceeding by the Applicant, representing updates in staffing which occurred during November, December, and early January. (Bradshaw TR 20,338) There are updated pages from 19 municipal plans attached to FEMA Exhb E-3. (Judge Hoyt TR 20,342-344)

620 The information was provided to Energy Consultants in writing and verbally over the telephone by the emergency planners of those municipalities. Mr. Bradshaw was unsure if the changes had been transmitted by the municipalities to the county offices of emergency preparedness. (Bradshaw TR,20,338-20,341) Using the example of Schuylkill Township, Mr. Bradshaw did not believe that it would be a routine matter for Mr. Vutz to forward that sort of updated information to Mr. Campbell, apart from a complete plan review. (Bradshaw TR 20,341)

The Emergency Response Organizations (including federal, state, and local governments and support organizations) have failed to fully document the existence of appropriate letters of agreement with support organizations and agencies. Thus, there is no reasonable assurance that the emergency plans can be implemented.

621 There have been some questions raised by the solicitors involved in the negotiations for a host school agreement between Pottsgrove School District and Southern Lehigh. PEMA attempted to resolve these concerns by letter, which they thought that they had. However, the people involved, including the County Emergency Coordinators, want more detail than that and they have asked that a meeting be set up with those involved to go over with PEMA the problems that they have. (Hippert TR 19,629).

622 Mr. Hippert testified that the host school agreement between the Pottsgrove School District and Southern Lehigh has definitely not been consummated, and that the Owen J. Roberts host school agreement was still under negotiation. He was uncertain whether or not Methacton School District had yet completed a host school agreement. (Hippert TR 19,559).

LEA-3

The Montgomery County RERP fails to provide reasonable assurance that the public will be adequately protected in that the Bucks County Support Plan, which is essential to the workability of the MontCo RERP, may not be approved. The present Board of Commissioners have little knowledge of the contents and implications of the Support Plan. There is no assurance that the County will assume the responsibilities assigned to it in the Support Plan, rather than use County resources to help Bucks County people first. The Montgomery County Plan relies on the Support Plan in at least these ways:

1. facilities for relocation and mass care of evacuees
2. augmentation of emergency workers, including use of county resources, on a continuous 24 hour basis.
3. see attachment "Excerpts and comments on the Bucks County Draft Evacuation Plan" for additional areas of support and interface.

It is contended that without the approval of Bucks County Support Plan, the MontCo RERP is unworkable as it now stands.

BASIS: 10 CFR 50.47 (b) (1), NUREG 0654, Criteria A.3, Criteria C.4, Criteria A.4

623 The Bucks County Commissioners have repeatedly expressed serious reservations about Bucks' ability to fulfill its role as a support county in letters to PEMA (LEA Exhb. E-53), and FEMA (LEA Exhb. E-60, in discussion with PEMA (LEA Exhb. E-61), and as evidenced by testimony by the Bucks County Chief Clerk/Administrator Mr. Reiser and the Bucks County Director of Emergency Services, Mr. McGill.

624 From meetings with Bucks County citizens (LEA Exhb. E-60, p.1) and from resolutions and communications received from eight Bucks County municipalities (Reiser TR 18,278), the Bucks Co. Commissioners believe that probable spontaneous evacuation in Bucks and Philadelphia Counties would seriously impair the county's ability to shelter 24,400 Montgomery County evacuees. (Reiser TR 18,355) (Hippert TR 19,535) (McGill TR 20,373 line 20)

625 The Bucks County Commissioners believe that their first responsibility under PL 1332 is to Bucks County citizens (LEA Exhb. E-60, p.2) (LEA Exhb. E-53, p.1) and seek assistance from the Applicant (LEA Exhb. E-53), and PEMA and FEMA (LEA Exhb. E-60) in quantifying the probable extent and impact of spontaneous evacuation in order to ensure the safety of Bucks County residents and visitors.

626 Although PEMA's Mr. Hippert, based upon a November 7, 1984 meeting between PEMA's Mr. Patten and Bucks County Commission Carl Fonash, believes that Bucks County would not refuse to cooperate in the event of an accident at Limerick (Hippert, TR ff TR 19,498 at p.5), a letter from Bucks County Commission Carl Fonash dated November 16, 1984 (nine days following that meeting) says,

"...it is manifestly impossible for Bucks County to provide any basis or expectation for believing that facilities and personnel will be in place, or can be put in place, to accomodate twenty-five thousand shelter-seeking evacuees, either as to reception or support facilities, as contemplated in the draft plan which was prepared for the County's consideration by PECO consultants."

627 And while the draft Memorandum of Understanding between PEMA and Bucks County, based on the meeting of November 7, 1984 and prepared by Mr. Patten of PEMA (LEA Exhb. E-61) outlines the conditions under which Bucks County support could be provided, the Bucks County Commissioners have not taken any action to sign or ratify that MOU (McGill TR 20,381), and are not expected to do so in the near future (McGill TR 20,397).

628 Additionally, the proposed MOU conditions Bucks County's work in planning for adequate support of evacuees on

- a) the Bucks County Commissioners satisfaction that the Montgomery County RERP is feasible, capable of implementation and will not adversely impact upon the safety of persons residing or working within Bucks County,
- b) that sufficient traffic control points are established to ensure that a concurrent evacuation of Bucks County would not be unduly impeded, and
- c) that the Bucks County Commissioners deem the Bucks County support plan to be viable and adequate.

(LEA Exhb. E-61, p.1)

629 There is no evidence before the Board that these conditions for ongoing planning by Bucks County have been met to the satisfaction of the Bucks County Commissioners.

630 That support planning has not gone forward in Bucks County in Bucks County is evidenced by the lack of any substantial change in

content between the "Draft 4" Bucks County Support Plan dated October 1983 and the purported "final" (Bradshaw TR 17,234) draft dated October 1984 (Appl. Exhb. E-4) showing any refinements. Mr. Charles McGill, Bucks County's Director of Emergency Services, says(at TR 20,373), "we find very, very limited changes in the "final" draft. Nothing to affect the plan in any manner."

631 Although Mr. McGill acknowledges that "if an accident were to occur at Limerick tomorrow"(TR 20,368) "in order to cooperate in a manner in which we should with our neighboring counties, I can see no other plan that I could possibly use," (TR 20,369) he also points out that, "...at the present time, the plan as submitted to Bucks County is not acceptable to the county commissioners." (TR 20,369)

632 Mr. McGill, additionally, has concerns such as the separation of those people at the mass care center who are possibly contaminated from those who are not contaminated (McGill TR 20,387), such concerns not yet being reflected in the written support plan.

633 Mr. McGill also points out the Applicant's Exhibit E-4, characterized as a "final" draft by Energy Consultants (Bradshaw TR 17,234) and dated October 1984 had never been sent to him by Energy Consultants or the Applicant, and that he first received a copy of it (from a third party) only 15 days previous to his testimony on January 29, 1985. (TR 20,370).

LEA-14(a)

The School District RERP's and the Chester, Berks, and Montgomery County RERP's are deficient because there are inadequate provisions of 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.

PEMA's written testimony stated that in Mr. Hippert's opinion, this contention raises the specific question: Why do not school districts and Berks, Chester, and Montgomery County plans include provisions for issuing dosimetry and KI to school bus drivers, teachers, and school staff. Accompanying questions are:

1. Will all school buses be required to pass through the transportation staging area before reporting to schools being evacuated? If not, how will the drivers obtain dosimetry and KI?
2. How many units of dosimetry/KI will be available at the transportation staging areas for Berks, Chester, and Montgomery Counties and what was the basis for determining that this amount would be adequate?
3. Since sheltering could be recommended shouldn't teachers and school staff be issued dosimetry and trained in its use?

(Hippert, ff. TR 19,498, pages 18 and 19) (Also Hippert TR 19,333-19,334).

642 Margaret Reilly is Chief Division of Environmental Radiation, Bureau of Radiation, Department of Environmental Resources. Her responsibilities include the routine surveillance of nuclear power stations in Pennsylvania, and planning for the radiological assessment of accidents at their facilities. (Reilly, ff. TR 19,381 Professional Qualifications)

643 In general, buildings in this Limerick areas climate pretty much turn over the air inside them so that by two hours you begin to have, in effect, the radioactive plume inside. This can happen before two hours if the building leaks, depending on the type of plume and the type of building. (Reilly 19,346)

644 These considerations are not a subject of discussion for those making emergency planning protective decisions because sheltering is a last resort, "It is an option that one uses for want of something better." (Reilly TR 19,346)

645 Basements would be an improvement. Other characteristics such as the degree of weather stripping, the effective thickness of walls would make a building more suitable. The lack of a basement does not make a building "inadequate" for sheltering because one of the functions of shelter is use as a protective action when you have nothing else. (Reilly TR 19,386)

646 A winter worthy house or commercial structure with a basement in the northeastern United States should, according to NUREG/1131, "Examination of Offsite Radiological Emergency Protective Measures for Nuclear Reactor Accidents Involving Core Melt", on the average provide a dose reduction factor (DRF) of 0.5 against airborne radioactivity and 0.08 against ground shine. These values may be compared with a DRF against airborne radioactivity of 0.75 and against ground shine of 0.33 for houses in the southwest.

647 In addition, sheltered individuals will inhale roughly 35% less than those outside during cloud passage. With tight construction and reduced ventilation rates, larger reductions are possible.

(Reilly ff. TR 19381)

648 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.

649 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.

650 The school's notion of the best place to shelter is something that ought to be addressed beforehand. In that case you would not have to make it up at the time of the event. (Reilly ff TR 19,381)

651 A building which is winter worthy, that is, tight and offers some shielding, is better than nothing at all. And that is the role of shelter.

652 The State of Pennsylvania has no information on the dose protection value of automobiles. Evacuation is preferable to sheltering in instances where people are indeed exposed to some extent in the plume in the effort to avoid the much larger consequence later had they stayed. Under those circumstances where projected doses aren't really high enough to drive you into evacuation, perhaps through prudence or in a convenient situation one could recommend shelter.

653 In general, the doses were expected to approach protective action guides, and "everything was go" then evacuation is preferrable, because evacuation os the best way of avoiding dose. (reilly TR 19,388)

654 After a sheltering scenario, evacuation may or may not be advisable, depending in projected dose. (Reilly TR 19,393)

LEA-14(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.

PEMA's written testimony stated that in Mr. Hippert's opinion for the second part of this contention the question is: Have the school bus drivers, teachers, and school staff received adequate training to enable them to respond effectively in the event of a radiological emergency? What is the basis for this determination? Follow-on questions are:

1. Have they been trained to deal with contaminated individuals and equipment?
2. Have they been advised as to the hazards of radiation exposure and the use of equipment to ensure their safety?
3. Do teachers and staff know what areas of the school building or complex are to be used for sheltering?
5. Are bus drivers familiar with the routes they are to use?

(Hippert, ff. TR 19,498, pages 21 and 22) (Also Hippert TR 19,333-19,334).

655 ' Mr. Taylor stated that training given to school staff and bus drivers particularly school personnel does to some extent discuss what they might do to handle children who show some kind of reaction due to increased stress. (Hippert TR 19,621).

656 Mr. Hippert stated that he believes strip maps will be made available to buses who are unfamiliar with the routes they will be assigned to travel. He states that that is a standard procedure for all nuclear power plants in Pennsylvania, and that there is no reason to believe that that will not be followed for Limerick. (Hippert TR 19,621).

657 Bus drivers haven't given their committment to drive in a radiological event at Limerick. (Bradshaw TR 13,685)

658 Energy Consultants accepts the possible scenario that bus drivers and in some cases school staff would reenter the EPZ and could be issued KI and dosimetry. (Bradshaw TR 13,699)

659 There is no evidence to show that there are available trained staff that are capable of providing dosimetry and KI training located at the transportation staging area. There is no provision in the plan that would account for trained staff to be stationed and available to train people in the use of KI and dosimetry at the staging area. (Bradshaw TR 13,702)

660 Winter worthy was defined by Ms. Reilly as "it is a place where I would prefer to spend a day like today. It beats a chicken coop." (Reilly TR 19,387)

661 No weatherization documents were used to determine the definition of winter worthy. (Reilly TR 19,388)

662 Dr. Price had no knowledge whether bus drivers have received training, or whether they had even been informed of any particular responsibility in the event of a radiological emergency. (Dr. Price TR 15,415).

663 No training sessions have yet been scheduled for school staff at the Salford Hills Elementary School. (Dr. Price TR 15,426). Dr. Price thinks that it is absolutely necessary and that he would look into that kind of training, in addition to looking into what other kinds of training are available. Dr. Price believes that training will need to deal with some of the human aspects, and he would certainly want training of that nature. He was unsure whether that is available through Energy Consultants or the county. (Dr. Price TR 15,428).

664 The situation for teachers, although they are still supervising children, will be somewhat different, as Ms. Greaser stated. Dr. Price does see a different kind of need on the part of the teachers. He does think that they will have some emotional needs that need to be met. They will have anxiety, they will have concerns. Dr. Price thinks that his teachers will need some training in that. (Dr. Price TR 15,429-15,430).

665 "Training is not the end all of a solution, and training can never anticipate every kind of an emergency." Training will help, but that it would not completely solve the problem. (Dr. Price TR 15,547).

666 Methacton, Souderton and Great Valley School District didn't receive any training, nor did they accept or schedule any training from us. Three out of thirteen school districts have received no training. (Wenger TR 13,633- 13,634)

667 . FEMA is not aware of the extent to which bus driver training has been completed. (Kinard TR 20,205). FEMA has been provided lesson plans by PEMA, one of which is for bus drivers, and has found it to be for the most part, comprehensive in nature. Mr. Kinard was not able to provide an accurate guess or a ballpark figure regarding his knowledge of the extent to which bus driver training had been completed. (Kinard TR 20,209)

668 Mr Asher stated that he was not sure whether bus drivers had been trained in their roles and responsibilities during a radiological emergency. (Asher TR 20,296)

669 There is insufficient information regarding sheltering in the Springfield Area School District plan. Dr. Welliver would like to see more details regarding procedures spelled out in the plans. These recommendations are being made to Energy Consultants. (Welliver TR 15,579)

670 A concern was expressed about the suitability of the Second Avenue Elementary School building for sheltering. There is alot of glass, entrances and exits and it is a one-story building. (Murray TR 15,122)

CERTIFICATE OF SERVICE

I hereby certify that Limerick Ecology Action's Proposed Findings of Fact and Conclusions of Law have been served upon the following parties on the service list below by on this 7th day of March, 1985 by deposit in the United States Mail, Mail, postage prepaid, except for those marked (*) who were hand served.

(*) Judge Helen Hoyt, Chairwoman Administrative Judge U.S. Nuclear Regulatory Commission Washington, DC 20555	(*) Ann P. Hodgdon, Esq. Office of the Executive Legal Director U.S. Nuclear Regulatory Commission Washington, DC 20555
(*) Dr. Richard F. Cole Administrative Judge U.S. Nuclear Regulatory Commission Washington, DC 20555	(*) Benjamin Vogler, Esq. Office of the Executive Legal Director U.S. Nuclear Regulatory Commission Washington, DC 20555
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