

638

RELATED CORRESPONDENCE

Limerick Ecology Action

BOX 761

POTTSTOWN, PA. 19464

(215) 326-9122

50-352-91
50-353-02

August 31, 1984

Re: LEA's Responses to PECO Discovery Request on admitted off-site emergency planning contentions

SEP -4 AIO:44

In the Matter of Philadelphia Electric Company
Docket No. 50-352, Limerick

LOCKING & SE
BRANCH

Dear Mr. Rader,

Limerick Ecology Action hereby submits supplementary information in response to Philadelphia Electric's Interrogatories of June 25, 1984:

- a) Supplementary answers to Specific Interrogatories
- b) Further identification of documents in response to General Interrogatory #3
- c) LEA's answer to Philadelphia Electric Company's proposed stipulation of August 10, 1984
- d) Affidavit of Maureen Mulligan, as requested

In addition, several items identified in LEA's August 6 and August 13, 1984 responses are being included in this filing. They are as follow:

- 1(b) Municipal Survey responses
- 3(b) Notes from conversation with Limerick Twp. EMC
- 4(b) Notes from conversation with Robert Reber, Berks Co. Emergency Services Director
- Additional newsclippings and correspondence as follows:
- 5(a) Chester County Municipalities
- 5(b) Montgomery County Municipalities
- 5(d) School related
- 5(e) Misc.

We believe that this information is responsive to the concerns that you have expressed. Please contact me if you want to discuss this matter further.

Respectfully submitted,

Maureen Mulligan DSB
Maureen Mulligan, Vice President

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PDR ADOCK 05000352
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e

LEA's Supplementary Answers to
Philadelphia Electric Company's Interrogatories of June 25, 1984

DOCKET
CLERK

General Interrogatories #1 and #2: LEA has not been able to contact Dr. Kai Erikson to determine his availability to give testimony on contentions LEA-12, LEA-13, and LEA-15. He is currently a Professor at Yale University and has a Ph.D. in Sociology. No specific discussions about LEA's admitted contentions have taken place, although we do intend to contact him in the near future. 84 SEP 4 10:45

General Interrogatory #3: In addition to the document list we have included in this filing, Mr. Anthony is obtaining a copy of the "Draft General Management Plan" for Valley Forge National Park, Nov. 1981. Pages 25 and 27 provide information relating to park usage and traffic peaks in the park. This information will be provided to you as soon as we receive it from Mr. Anthony.

Also, Upper Merion Township has a study that Mr. Anthony is in the process of obtaining. He believes the title is:

"Upper Merion Township Wide Study"
Phase 1 - Township Overview
Interim Report
July 6, 1984 by Simpson and Curtis, Booz and Allen,
and Hamilton Inc.

Mr. Anthony was not available by telephone today to confirm whether or not he had obtained a copy from Upper Merion Twp. yet, but we do expect to have the information within the near future and will make it available to you.

In addition, Philadelphia Electric Company has indicated that they would like to have affidavits provided by Charles Elliott and Phyllis Zitzer stating that all information they are aware of has been provided to you as part of discovery. My affidavit refers to Mr. Elliott's preliminary conclusions and his intention to provide such an affidavit once he has reviewed this filing. I was unable to obtain Ms. Zitzer's affidavit in time to include in today's filing, although she had similar concerns about wanting to review this filing before preparing the affidavit to insure that I had included everything. I will send in the affidavit that you have requested from her over the weekend.

Specific Interrogatories

1(g). LEA does not believe that the agreements made with bus companies are enforceable and are deficient because they fail to indicate even a minimum number of buses that will be provided.

30: Traffic control along Route 100 between Routes 113 and Exton Mall would be needed to prevent traffic from spontaneous evacuees in Marchwood, Rhonnda, and the Whitford developments from entering Route 100 and impeding the flow of traffic to the emergency worker staging area at Pickering Creek Industrial Park, the Exton Mall Reception Center and the alternative Municipal EOC location at the Exton Library. Information about alternative routes to be used by these residents should be predistributed to avoid traffic congestion in these critical areas.

29: LEA disagrees with the assumptions used in the HMM Evacuation Time Estimate Study involving "dynamic route selection" on pages 2-4 and 5-7. The "Priority Treatment" approach which understates actual impacts of traffic entering the main evacuation routes without traffic control. Also, the alternative routes described on page 6-1 are not part of the plans and no provisions have been made for their use, including traffic control.

32: The HMM Evacuation Time Estimate Study did not consider the transient visitor population at Valley Forge Park.

Please note: The above answers were provided to me by David Stone, an LEA volunteer who has been working on this particular contention. I anticipate LEA designating Mr. Anthony or Mr. Stone to handle this contention in the event that it is litigated. Our Sept. 6 filing will inform you of the status of this.

No further information is available at this time.

Questions on Contention LEA-22

26/27: In the event that Philadelphia addresses the following concerns, we believe that this contention can be resolved without litigation:

- 1) provide the total number of actual farmers in the EPZ to determine the number of units of dosimetry necessary to provide to each County Agent for distribution, including provisions for multiple re-entries and replenishment of supplies to the county agent to insure enough units are available to cover farmers over a time period of several days.
- 2) the definition of "livestock" should include fowl, horses, and sheep. the term "farmer" should include people owning or operating farms, not limited to USDA lists.
- 3) An informational brochure should be regularly mailed to each farmer with livestock explaining their status (as an emergency worker if necessary to tend to animals), their rights, re-entry information and conditions, location and distribution of dosimetry, and information relating to the effects of radiation exposure to humans and animals.

Bus Driver Training Deficiencies

18. Same as for 16 in general terms, except that drivers must be instructed in necessary procedures in the event that they are involved in multiple trips into the EPZ (irregardless of whether they return to evacuate the general public or a special institution).

Bus drivers should be pre-assigned to a particular school and should be familiar with their routes. This is especially important if buses are being brought in to provide assistance from outside the area and drivers are not familiar with local traffic patterns.

Bus drivers need to know how to deal with contaminated individuals and equipment.

22. In general, the willingness of bus drivers to participate will depend on much the same information provided in answers to Interrogatories 4,8, and 21 in this filing.

Pre-identification of assignments and the training matters addressed above are important factors that LEA believes will affect a bus driver's willingness to participate. It is important that all those involved have given informed consent to participate and that they have confidence in the workability of the plans they are to help carry out. Mobilization must be accomplished quickly and efficiently and those involved must have a full understanding of this.

I realize that there are other issues that I stated that I would attempt address in this filing, but due to time constraints, these answers provide all information presently known to LEA that I am aware of. I would be happy to discuss the matter with you more fully at your convenience.

Maureen Mulligan .

Documents--LEA will provide (*)

(*) Evacuation Behavior in Response to Nuclear Power Plant Accidents

Donald Ziegler and James H. Johnson, Jr.
published in Professional Geography, 36(2) 207 215 (copyright 1984
by the Association of American Geographers, May 1984)

Further Actions Needed to Improve Emergency Preparedness ²⁴ Around Nuclear
Power Plants

GAO/RCED-84-43 August 1, 1984 Report to Congress, Government Accounting
Office

Public Protection Strategies for Potential Nuclear Reactor Accidents:
Sheltering Concepts with Existing Public and Private Structures

David Aldrich, David M. Ericson, Jr., and Jay D. Johnson
Prepared for Sandia Laboratories, Albuquerque, New Mexico, Printed 1978
SAND77-1725

Inhalation of Particulate Matter into Buildings

A.F. Cohen and B. L. Cohen, University of Pittsburgh, Nov. 1979
Sandia Laboratories, Albuquerque New Mexico SAND79-2079/NUREG/CR-1151

Protective Action Evaluation, Part 1 and Part 2

The Effectiveness of Sheltering as a Protective Action Against
Nuclear Accidents Involving Gaseous Releases, George Anno/Michael Dore
EPA 520/1-78-001A, April 1978

Final Report on a Social Survey of Three Mile Island Area Residents

Stanley Brunn, James Johnson, Jr., Donald Ziegler
Dept. of Geography, Michigan State University, August 1979

Examination of Off-Site Emergency Protective Measures for Core Melt
Accidents (Sandia Laboratories/M.I.T./Dept. of Engineering)

Please note, we have not yet reviewed most of these documents in order to designate the specific portions which LEA would deem related to the subject matter contained in LEA's admitted off-site emergency planning contentions. (Several have not yet been received, although we have read the abstract or summary portions). We believe that most of these are rather standard documents that Applicant and other interested parties would have access to. In the event that this is not the case, we would be willing to make arrangements for you to review them.

Additional Documents that LEA has identified and is seeking to obtain:

Evacuation from a Nuclear Technological Disaster

Donald Ziegler, Stanley Brunn, and James Johnson
Reprinted from Geographical Review, Vol. 71, No. 1 (Jan. 1981)

Distinguishing Human Responses to Radiological Emergencies

James Johnson and Donald Ziegler
Reprinted from Economic Geography, Vol. 59, #4 (Oct. 1983, pp. 386-402)

Planning for Spontaneous Evacuation During a Radiological Emergency

James Johnson
Reprinted from Nuclear Safety, Vol. 25, No. 2 (March-April 1984)

EVACUATION BEHAVIOR IN RESPONSE TO NUCLEAR POWER PLANT ACCIDENTS*

DOCKETED
USNRC

Donald J. Zeigler
Old Dominion University

and

James H. Johnson, Jr.
University of California at Los Angeles

01 SEP -4 10:45

A telephone survey of 2,595 households on Long Island, NY provides a data base for analyzing potential spatial behaviors in response to an accident at the Shoreham Nuclear Power Station in Suffolk County. These intended behaviors approximated the actual behaviors of Three Mile Island area residents during the general emergency at that plant in 1979. Using evacuations from natural and other technological hazards as a basis for comparison, we conclude that evacuations in response to nuclear power plant accidents are likely to be characterized by an extreme over-response to limited protective measures. This phenomenon should be considered in behaviorally based radiological emergency response planning. Key Words: evacuation shadow phenomenon, evacuation behavior, evacuation quarters, evacuation planning, Shoreham Nuclear Power Station, TMI accident

The accident at the Three Mile Island [TMI] nuclear generating station in March 1979 presented social scientists with their first opportunity to study actual evacuation behavior during a radiological emergency and to compare it with the known parameters of evacuation behavior in response to natural and other technological disasters. Within one month of the TMI accident we served on a team of geographers which surveyed south central Pennsylvania residents to determine how they responded to a limited evacuation advisory [3, 4]. More recently we participated in the design of a social survey of Long Island, NY residents who were asked how they were likely to behave in the event of a general emergency at the Shoreham Nuclear Power Station in Suffolk County, 60 mi (96 km) east of New York City. The purpose of the Shoreham survey was to provide a behavioral data base on which to build a workable emergency response plan that would protect the public from exposure to ionizing radiation during an accident at the plant. Our purpose in the present study is to ascertain whether the results of the Shoreham survey support our hypotheses (1) that human spatial behaviors during nuclear emergencies are fundamentally different from behaviors during other emergencies and (2) that these differences must be taken into consideration in planning for possible nuclear power plant accidents. The TMI experience is used as a basis for comparison.

Evacuation planning at TMI took place during the accident, not before. Prior to 1979, a major reactor accident with off-site consequences was assumed to be a highly unlikely event [27]. Emergency plans were required only for the site itself and the surrounding 2-3 mile low population zone. After the TMI accident the Nuclear Regulatory Commission (NRC) issued new regulations requiring that off-site emergency plans be approved by the Federal Emergency Management Agency (FEMA) and the NRC before a plant such as Shoreham may be licensed [28, 29]. These upgraded regulations purportedly build upon the lessons learned from TMI to insure that "adequate protective measures can and will be undertaken in the event of [another] radiological emergency" [28, p. 55402]. Evacuation planning is now required for a generic 10-mi (16 km) plume exposure pathway emergency planning zone (EPZ) around all nuclear power plant sites. No evacuation plans are required for the more distant 10-50 mi (16-81 km) area known as the ingestion exposure emergency planning zone because "the probability of large doses [of radiation] drops off substantially at about 10 miles from the reactor" [27, p. 1-37]. The decision to limit evacuation planning to the 10-mi (16 km) EPZ ignores the recommendations of studies which analyzed the evacuation behavior of south central Pennsylvania residents and which identified a set of behavioral responses different in many respects from other experiences with evacuation [2, 3, 4, 7, 12, 13, 1].

Conceptual Overview

Knowledge of evacuation behavior, whether in response to natural or technological threats, is "crucial for the successful design and implementation of community emergency plans" [33].

* We would like to acknowledge the funding provided for this study by the County of Suffolk, NY, Peter F. Cohalan, County Executive.

What is known about evacuation behavior comes primarily from studies of natural disasters [8, 25, 31, 32, 33] and, more recently, non-nuclear technological ones [24, 35]. Only in response to the accident at TMI was it possible to amass an empirical data base on evacuation behavior during a nuclear emergency [2, 3, 7, 12, 41]. While there are always situational contingencies influencing the success or failure of mass evacuations, spatial behaviors during non-nuclear emergencies tend to manifest some general patterns: individuals and families seem to evacuate only when confronted with direct sensory evidence or explicit warning messages convincing enough to persuade them that they are in the hazard zone of a life- or limb-threatening disaster agent. Most often, the problem which materializes during mass evacuations is one of trying to convince those who see no reason to evacuate that they need to leave their homes for reasons of personal safety. When evacuees do leave, they flee as family units, travel not much farther than the edge of the hazard zone, and take refuge with family and friends rather than in public shelters.

Evidence from the nuclear technological disaster at TMI suggests several dimensions of evacuation behavior that may be unique to nuclear accidents. In contrast to the model outlined above, response to the Pennsylvania Governor's limited evacuation advisory reflected a decided over-response among local residents, not the under-response anticipated from previous evacuation studies. That is, what was intended to be a limited evacuation turned into one of mammoth proportions. Zeigler, Brunn, and Johnson identified this process as the evacuation shadow phenomenon: "the tendency of an official evacuation advisory to cause departure from a much larger area than was originally intended" [41, p. 7]. The process itself has been termed spontaneous evacuation [4]. We believe the evacuation shadow phenomenon characterizes nuclear emergencies because of the dread with which people view radiation hazards [5, 17, 21, 22, 26, 30, 37, 38], probably due in large part to the delayed effects, including cancer and transgenerational injury, and to the catastrophic potential of nuclear releases [18].

During the TMI emergency, pregnant women and pre-school children within 5 mi (8 km) of the threatening reactor were advised to evacuate. Sheltering (staying indoors) was recommended for all others within 10 mi (16 km) of the plant. If this advisory had been followed, only about 3,000 pre-school children and 444 pregnant women would have left the area within 5 mi of the plant [14]. Ninety-five percent of the population aged 0-5 did evacuate as did 90 percent of the pregnant women. Altogether approximately 144,000 people within a 15 mi (23 km) radius of the plant decided to evacuate [12]. Our study reported that 9 percent of those surveyed in three communities 25 mi (40 km) distant from the plant also evacuated, indicating that the evacuation shadow extended at least five times the distance to which the advisory applied [41]. In the words of Lindell and Perry, "even if one assumes that of all families with any pregnant women or pre-school children evacuated as a unit, and that therefore as many as 10,000 persons evacuated 'appropriately,' this is still an over-response of more than an order of magnitude" [23, p. 423]. Thus, even though the Governor's evacuation advisory was geographically limited and issued with the proviso that "an excess of caution is best" [36], an extensive evacuation shadow was cast over a six-county area. Another dimension of evacuation behavior also differed from the norm established for other disasters. Evacuees from TMI fled unprecedentedly long distances to their temporary destinations, a behavior which again seems to reflect extreme fear of the disaster agent. These dramatically different behaviors have been largely ignored in formulating revised procedures for radiological emergency response planning. Even behaviors which conform to expectations, including the tendency for evacuees to use self-selected rather than designated evacuation routes and to choose the homes of relatives and friends over public shelters, argue for emergency response plans built on a behavioral as well as logistical base.

The Long Island Evacuation Survey

The Long Island Lighting Company's Shoreham Nuclear Power Station is located in the town of Brookhaven on the north shore of Long Island and within the suburban expansion zone of New York City. The island comprises Nassau County to the west and Suffolk County to the east. Within 10 mi (16 km) of the Shoreham site reside an estimated 57,000 people; between 10-50 mi (16-80 km) reside slightly over 5 million. Only three other nuclear power plant sites have a larger population living within fifty miles. Compounding the problem of high population densities, particularly to the west of the plant, is the elongated configuration of Long Island

which is only 14 mi (20 km) wide at the Shoreham location. In addition, bridges leading off the island are limited to the extreme western end in New York City.

In 1982, Suffolk County sponsored a sample survey of Nassau and Suffolk County households to help determine what role the local public sector should play in managing the off-site consequences of an accident. Since location with respect to the reactor site is one of the most important variables in the decision to evacuate, the population of telephone subscribers in the two-county area was stratified on the basis of distance and direction from the Shoreham plant. Four zones were delineated and three-digit telephone exchanges were identified within each zone. The last four digits of each telephone number were then generated at random. In all, 2,595 telephone interviews were completed [39]. About one-third of the eligible respondents contacted refused to participate. Nevertheless, the characteristics of the sample households closely approximated the population parameters for Long Island. The survey instrument itself was designed by an interdisciplinary team of social scientists including the authors of this paper. The scenario method was chosen in part because it has been successfully used in other hazard studies [6, 9, 10, 16, 40] and in part because the President's Commission on the Accident at Three Mile Island recommended that emergency plans be designed on the basis of alternative disaster scenarios for any given plant [34].

The Evacuation Shadow Phenomenon on Long Island

The Shoreham evacuation questionnaire asked respondents to consider three increasingly serious protective action advisories. Each advisory was preceded by the statement: "Suppose that you and your family were at home and there was an accident at the Shoreham Nuclear Power Plant." In scenario I, all people who lived within 5 miles of the plant were advised to stay indoors. In scenario II, all pregnant women and pre-school children living within 5 miles of the plant were advised to evacuate and everyone else within 10 miles was advised to remain indoors. In scenario III, everyone living within 10 miles of the plant was advised to evacuate (the most extreme evacuation advisory for which plans would be in place).

All survey respondents in both Suffolk and Nassau counties were asked how they would react to each scenario. Their responses are summarized in Table 1 which presents data for the total two-county population and for five subzones. These figures provide estimates of the magnitude and geographic extent of spontaneous evacuation. In scenario I, no one was advised to evacuate but 25 percent of all households said they would leave. In scenario II, modeled after the TMI advisory, 34 percent of the total population indicated their intentions to evacuate. In scenario III, the most severe, only 3.6 percent of Long Island's population should have indicated their intentions to evacuate. Instead, half of the total population were projected to leave their homes in search of safer quarters. If conditions actually warranted the advisory in the first scenario, 215,000 families could be expected to evacuate. In the second scenario (which should have precipitated the flight of only 2,700 families) 289,000 families indicated they would leave; and in the third scenario the number was 430,000 families.

A comparison of the intended evacuation rates of the total population and the population within 5 mi (8 km) of the Shoreham plant suggests a decided distance-decay phenomenon. In fact, distance from the reactor has been found to be the single most important determinant of evacuation rates [19]. The distance-decay curves presented in Figure 1 show that in all three scenarios families closer to the plant are more likely to evacuate than those farther away. Regardless of scenario, there appears to be very little distance decay within 10 mi (16 km) of the reactor site. In response to the advisory in scenario I, approximately 40 percent of the population in both the 5 mile and 6-10 mile zones are likely evacuees. Beyond the 10-mile zone, the distance-decay effect is more apparent. All three curves exhibit a fairly constant rate of decline until about 25 or 30 miles from the accident site, whereupon they level off or exhibit more irregular variations in response to increasing distance. While the proportion of households intending to evacuate declines as a function of distance, the absolute number of evacuees increases dramatically with each additional mile. Another significant characteristic of the distance-decay curve for scenario III is the indication that not everyone within 10 miles of the plant would follow the instructions to evacuate. In fact, almost one-fifth of the population of the plume exposure EPZ indicated they would remain behind even if advised to leave.

For scenario III there is also likely to be a directional bias in the pattern of evacuation from a nuclear accident at Shoreham (Figure 2). Residents west of the plant are more likely to

TABLE I
 BEHAVIORAL RESPONSES TO SELECTED PROTECTIVE ACTION ADVISORIES (figures in percentages)

	Evacuate	Shelter	Business as Usual	Do Not Know
Scenario I				
Total	25	42	30	3
0-5 miles	40	52	4	5
6-10 miles	40	49	8	3
Eastern Suffolk	22	50	22	5
Western Suffolk	34	43	20	2
Nassau	18	39	40	3
Scenario II				
Total	44	41	23	4
0-5 miles	57	38	2	3
6-10 miles	52	39	5	4
Eastern Suffolk	30	47	19	5
Western Suffolk	44	42	13	1
Nassau	25	41	31	3
Scenario III				
Total	50	31	16	3
0-5 miles	78	18	1	3
6-10 miles	78	17	2	3
Eastern Suffolk	46	36	14	4
Western Suffolk	63	29	7	2
Nassau	39	34	25	3

Source: Social Data Analysts [19]. Scenario I: all people within 5 miles of the plant advised to stay indoors. Scenario II: all pregnant women and pre-school children within 5 miles of plant advised to evacuate and everyone else within 10 miles to stay indoors. Scenario III: everyone within 10 miles advised to evacuate.

evacuate than their counterparts to the east. Beyond the 10-mile radius of the site, the distance-decay effect is much more pronounced to the east than to the west. The population of eastern Suffolk County is not nearly as likely to choose evacuation as a response to the scenarios as the population of western Suffolk. The gap which separates their comparative evacuation rates widens with each increasingly serious scenario. Those east of the plant are likely

DISTANCE DECAY EVACUATION CURVES

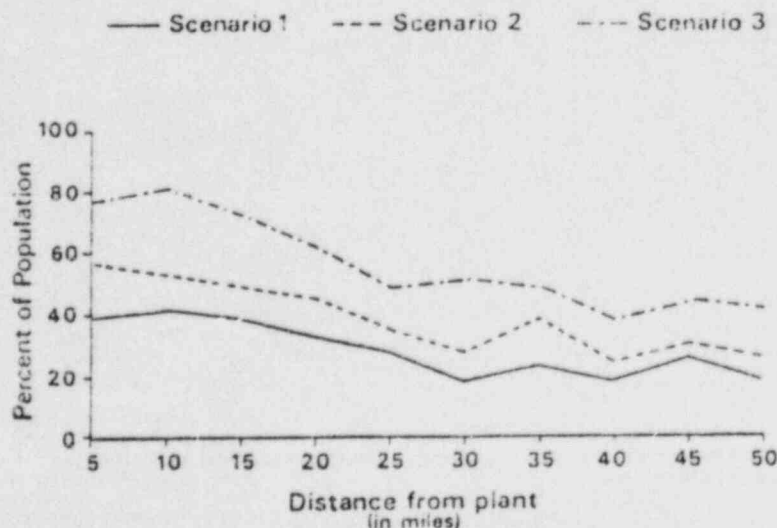


Figure 1. Distance Decay Evacuation Curves on Long Island. Source: Johnson and Zeigler [20].

EVACUATION BY DISTANCE AND DIRECTION FROM THE PLANT
Scenario 3

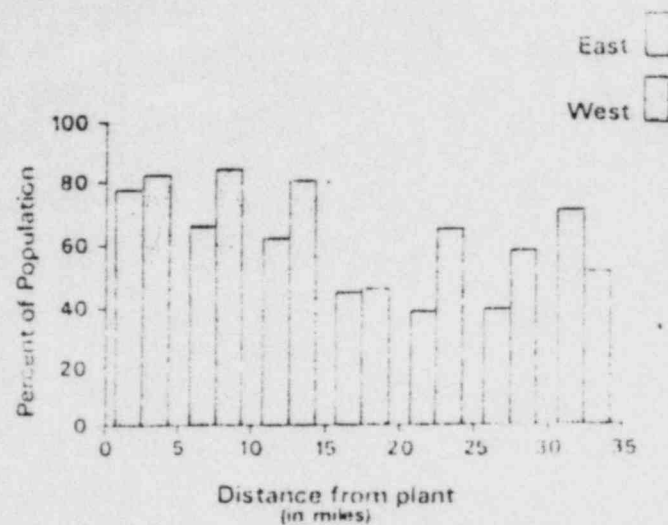


Figure 2. Rates of Intended Evacuation by Distance and Direction from the Shoreham Nuclear Power Plant. Scenario III: everyone within 10 miles of the plant advised to evacuate. Source: Johnson and Zeigler [20].

to find themselves in a quandary. Although downwind from the plant, they cannot evacuate to the west without passing through or near the hazard zone, thus increasing their risk of exposure to radiation. At the same time, they would probably be reluctant to evacuate eastward for fear of being trapped in a cul de sac should conditions at the plant deteriorate and threaten an even larger area. Moreover, the sparser population to the east diminishes the likelihood of evacuees being able to find a satisfactory place to stay, which would, in itself, discourage evacuation.

These findings suggest that a high degree of spontaneous evacuation is likely to occur on Long Island, just as it did around TMI, during a radiological emergency. Depending on the scenario, 25 to 50 percent of the Long Island population is likely to evacuate in response to very limited protective action advisories. The evacuation shadow is likely to affect the entire two-county area. Even though the Shoreham evacuation survey asked only for an indication of behavioral intentions, we believe that these intentions would be acted upon in an actual emergency for the following reasons. First, the intended spatial behaviors at Shoreham closely parallel the actual spatial behaviors in response to the TMI accident. Within the 5 mile zone, for instance, the TMI population registry indicated that 64 percent of the population evacuated at some time during the crisis [74]. The intended evacuation rate within 5 miles of the Shoreham plant in response to scenario II was 57 percent. Within 15 miles of TMI, an estimated 39 percent of the population evacuated; the comparable figure for Long Island was 53 percent. Second, the theory of reasoned action, developed extensively in the writings of Ajzen and Fishbein [7], suggests that the most powerful predictor of actual behavior is intended behavior. That is, unless something changes their intentions before they have a chance to act, Long Island residents who say they would evacuate are likely to do just that. Third, the longstanding controversy over the Shoreham plant, compounded by the recency of the TMI accident, helped assure that survey respondents had given the issue of emergency response some previous thought.

The Search for Evacuation Quarters

Not only do people evacuate from an unprecedentedly large area when threatened by a radiological emergency, but they also flee longer distances than in other types of disasters. TMI area evacuees traveled distances greater than had been recorded in any previous study, according to Hans and Sell's analysis [75] which found the longest median evacuation distance on record to be 80 mi (128 km) in response to a Gulf Coast hurricane. Zeigler, Brunn, and

Some Implications for Emergency Planning

The distance-decay curves presented in Figure 1 suggest that evacuation planning, including the calculation of evacuation time estimates, needs to encompass, if not the entirety of Long Island, at least an area extending to 25-30 mi (40-48 km) from the plant, the point at which the distance-decay curves level off. A 10-mile limit on evacuation planning, with no attention to what may occur beyond that zone, would establish a procedure for handling a maximum of 31,000 families. If the results of the Shoreham survey are accepted as an indication of actual behaviors, about fourteen times that many families would be on the road. Because not all families in the 10-mile zone would voluntarily evacuate even if advised to do so, only about one out of eighteen evacuating households would originate from within the zone for which evacuation plans had been put in place. These evacuation-resistant families, which would number about 22 percent of the population within 10 miles of the plant under scenario III, present another problem for emergency planning personnel, just as plans must be made to discourage spontaneous evacuation beyond the designated hazard zone, they must also address the problem of how to motivate the residual population within that zone to take action.

The evacuees beyond the 10-mile zone are likely to make it more difficult for those closer to the plant to get away from the threatening reactor as quickly as possible. According to FEMA [17] the time from the initiating event in the reactor to the start of an atmospheric release could be as short as one-half hour or as long as one day. It would take only one-half to two hours for the release to travel 5 miles from the plant, and from one to four hours for the release to travel 10 miles, that is, to the edge of the plume exposure EPZ. Such a time frame underlines the necessity for being able to completely clear the hazard zone as quickly as possible. Yet, road congestion beyond the planning zone, cross-town traffic generated in an effort to assemble families, and the movement of emergency personnel into the area could all retard the speedy exodus of those closest to the plant. In short, the evacuation shadow phenomenon could significantly lengthen the time it would take to evacuate the EPZ. In addition, 60-70 percent of the evacuees originating east of the Shoreham plant indicated their intentions to head for shelter in Nassau County, New York City, or beyond. This finding suggests there will be a sizable flux of traffic through the plume exposure EPZ, adding yet another variable to the evacuation time equation.

In general, both the experience at TMI and the results of the Shoreham survey indicate that people have their own ideas about how to behave during a nuclear accident and cannot be counted on to adhere to protective action advisories issued by public officials. This finding suggests two strategies for increasing the effectiveness of radiological emergency response plans. First, in the short run, efforts should be made to determine how people would intend to react in a radiological emergency so that response plans can capitalize on these behaviors. Second, in the long run, efforts should be made to teach people the importance of following directions. These efforts should be directed at both the under-reactors close to nuclear plant sites and at over-reactors farther away. These are the groups that either endanger society by congesting travel arteries or themselves by remaining in place. Such an educational campaign will not be easy to conduct, particularly in light of the emotional nature of nuclear issues and the long-standing controversy over nuclear risk [38].

Summary and Conclusion

The intended behavior of Long Island residents in response to a general emergency at Shoreham is likely to parallel the actual behavior of TMI area residents during the 1979 mishap. The behavioral response to nuclear accidents appears to be quite different from responses to other emergencies, particularly in terms of the spatial dimensions of the evacuation process. Spontaneous evacuation and its geographic manifestation, the evacuation shadow phenomenon, seem to place nuclear power plant accidents in a class by themselves. We are unable to cite any other class of accidents or disasters which has precipitated such extreme evacuation behavior, particularly in its geographic dimensions. Unlike pre-impact evacuations in response to natural disasters, during which it is often difficult to get people to move at all, evacuations in response to nuclear power plant accidents are likely to be characterized by an extreme over-response to limited protective action advisories. Both in terms of the magnitude of the evacuation and the geographic extent of the evacuation shadow, the results of the Shoreham

evacuation survey seem to support our hypothesis that human behaviors during nuclear emergencies cannot be predicted on the basis of what we know about other emergencies. Another finding which supports our hypothesis is the distance people feel compelled to put between themselves and the threatening reactor. At TMI the median distance people traveled was 85-100 miles. In the Shoreham survey, more than six out of ten respondents said they would select an evacuation destination more than 50 miles from home. Only in terms of their disdain for public evacuation shelters do nuclear evacuees seem to fit the model developed for non-nuclear emergencies.

Our results suggest several implications for planning and several directions for future research. First, the extent of the evacuation shadow suggests that limiting evacuation planning to the 10-mile plume exposure EPZ would be under-planning for a nuclear accident because so few of the evacuees would actually originate in that zone. Second, because resistance to evacuation among those closest to nuclear plant sites does not seem to be totally eliminated, strategies need to be devised for encouraging total compliance with evacuation advisories as well as for discouraging spontaneous evacuation farther from plant sites. Third, the evacuation shadow phenomenon needs to be taken into consideration in calculating evacuation times for the removal of people closest to nuclear plant sites. The development of realistic models on which to base such calculations merits additional research. These models should take into consideration people's likely behaviors and be adaptable to local conditions, both physical and social, as they vary from site to site. Fourth, social surveys should become a required part of emergency response planning in order to assure that, within the context of local circumstances, planning capitalizes on the natural behavioral inclination of a potentially impacted population. And fifth, additional work is needed on the formulation of a comprehensive hazard theory which accounts for cross-hazard differences and provides explanations for the varying ways people perceive hazards.

Literature Cited

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DONALD J. ZEIGLER (Ph.D., Michigan State University) is Assistant Professor and Director of the Geography Program at Old Dominion University, Norfolk, VA 23508. JAMES H. JOHNSON, JR. (Ph.D., Michigan State University) is Assistant Professor of Geography at the University of California, Los Angeles 90024. Both are interested in human responses to technological hazards and have testified before the Atomic Safety and Licensing Board of the Nuclear Regulatory Commission.

YANKELOVICH,
SKELLY AND
WHITE, INC.

18

3 June 1982

31 SEP -4 110:45

Ms. Amanda Potterfield, Esq.
New York Public Interest Research Group
9 Murray Street
New York, New York 10007

Dear Ms. Potterfield:

It is my intention to offer testimony in the matter of plans and programs for public safety in the vicinity of the Indian Point nuclear facilities.

The nature of my testimony will be determined by a wide array of public opinion data which I will have collected, or have analyzed upon collection by others, concerning:

- 1) - trends in public opinion on the subject of nuclear power facilities in general, and in public receptivity to such nuclear facilities in a community's "backyard." I will also address the question of the public's perception of the safety of these facilities.
- 2) - trends in measured public confidence in both governmental and business institutions, including the "believability" and trustworthiness of officials and organizations considered to be those most responsible for communicating with the public on matters of safety and appropriate policies for dealing with nuclear power facilities.

I will submit, by June 21 of this year, the written form of my testimony, including the sources of such public opinion data as I cite, and will be available to testify in person after that date.

Sincerely yours,

Larry Kaagan
Senior Research Associate
Assistant to Chairman

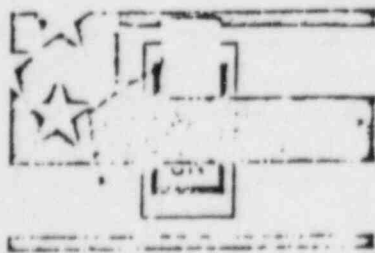
LARRY KAAGAN

LARRY KAAGAN is Senior Associate and Assistant to the Chairman of Yankelovich, Skelly & White, Inc., the New York-based public opinion research firm. With the firm's chairman, Daniel Yankelovich, he has written and lectured widely on public opinion in the areas of electoral politics, tax policy, nuclear energy, foreign affairs and social history. Most recently, he has co-authored, with Daniel Yankelovich, public opinion analyses in Foreign Affairs, Psychology Today, and other periodicals. An article, "The American Public Looks at Nuclear," appeared in ALCOA 81, the magazine of the Aluminum Company of America. Mr. Kaagan has also conducted seminars on American political opinion at the Brookings Institution and the Columbia University Graduate School of Journalism.

A graduate of the Medill School of Journalism at Northwestern University, Mr. Kaagan served as a post-graduate research director at the University's Center for Urban Affairs. He has been a visiting professor in the Honors Program at Villanova University, and a planning consultant to the Wharton School of the University of Pennsylvania. He has been with Yankelovich, Skelly and White since 1979, and concentrates his research in the firm's public policy analysis program.

ALCOA 81

The
American Public
Looks At
Nuclear
Page 18



Americans don't want to foreclose
the nuclear energy option—yet.
But concern about the safety and
cost of nuclear reactors remains high.

Front Cover

This illustration by the French artist
Jean Michel Folon
is taken from the article by
William G. Ouchi
"The Social Nature of Work."
It depicts the problem of distrust.

THE AMERICAN AT NU

There is a profound dichotomy in the fact that the nuclear power industry has had an exceptional safety record in its more than 20 years of operation and that the American public's primary, continuing reservation about nuclear power is safety.

No energy-producing system is without risk. Yet the potential for harm from nuclear generating plants continues to deeply trouble Americans. About half of the American public is concerned that nuclear power is unsafe, according to the authors of the following paper.

This report by Yankelovich and Kaagan reflects the uncertainty surrounding the nuclear issue. The current, more optimistic energy picture in the U.S. is not helping to dispel that uncertainty. Today's optimism could be, however, the calm before the storm. Opinions vary. There is a worldwide oil surplus today. More energy is available than is needed in the U.S. In the minds of many, this is no time to fret about building additional power plants, or to wrangle over the emotional nuclear issue. But our country has been experiencing a weakened economy. And to grow, even modestly, in the next two decades, we are certain to need more electricity. America cannot rely indefinitely on fossil fuels, natural gas and oil in particular. As the authors point out, Americans are pragmatic, and they are not closing the door on using and expanding nuclear power — yet. But fears remain.

The number one concern about energy today appears to be its cost. But a far more disturbing, long-range concern for Alcoa is whether in the decades to come, there will be energy enough to meet the country's needs.

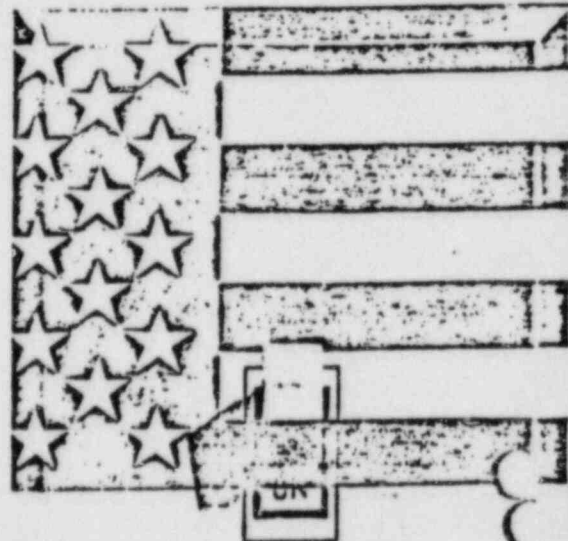
The Editor

by Daniel Yankelovich and Larry Kaagan

For the American public, the question of nuclear power continues to conjure a mixed set of images: some good, some bad and some unclear. While a significant and growing portion of the public defines the country's energy problem—as many economists do—as a matter of price rather than availability, there are also strong qualms about trading off potential safety risks and environmental hazards for the uncertain advantages and rising costs of nuclear power. In some ways, the "energy optimism" of President Reagan and the coincident timing of the 1981 international oil glut cloud rather than clarify public attitudes toward nuclear energy.

As a pragmatic and results-minded people, Americans reject the idea of closing the nation's existing nuclear power plants and forbidding the construction of new facilities. Such a move, which would foreclose an option that might yet improve our energy posture, met with strong disapproval even in the immediate aftermath of the "scare" at Three Mile Island, when an ABC/Harris poll found an 80 percent majority opposed to a "permanent shutdown" of all nuclear plants. On the other hand, public concerns about plant safety, waste disposal, emergency preparedness and the "human factor" have been rising steadily since long before Three Mile Island. Even as the Administration in Washington gears up its efforts to promote nuclear technology as a viable energy source, the American people are profoundly ambivalent on the subject.

Although there has been a rising awareness of resource depletion, it is



VAGUELY IN FAVOR,

still accurate to say that most Americans view the energy problem as an affliction of high costs. Even with growing concern about dependence on foreign nations, and a substantial degree of irritation at the leverage wielded by large oil companies, eight out of 10 Americans in our surveys cite high prices as the number one feature of the country's energy dilemma.

Significantly, the concern over the current cost of energy does not translate into ready perception of nuclear power as a lower-cost alternative to oil. In fact, growing segments of the public, and significant numbers of

PUBLIC LOOKS CLEAR:

use of fossil fuels or nuclear power. The public likes solar; it is something of a pie in the sunny sky.

But if experience with OPEC has embittered the American public toward the economics of oil, high expectations for solar energy have dimmed a little each year by virtue of "the long wait" factor. In 1978, more than three-quarters of the public identified solar power as an energy technology that would help the nation out of its energy problems in the near term. Now, three years later, a shrinking two-thirds majority thinks so.

In the short term, conservation via improved auto efficiency, better home insulation and greater reliance on mass transit are more appealing prospects to the public than more nuclear facilities. Looking only as far as the 1990s, the public sees greater energy gains being made by expanding domestic oil exploration and production than by building more nuclear power plants.

When the calendar is flipped forward, however, and people are asked which energy technologies are likely to play a major role in solving America's energy problems into the next century, an interesting shift takes place. Solar power remains the "sweetheart" technology, favored by more of the public than any other as clean, efficient and non-threatening. But what follows it as number two on the list of long-term energy prospects? Nuclear power. Why the turnaround? The answer has less to do with any expected failure of conservation strategies or fossil fuel supplies than the hope that problems currently besetting the nuclear power industry will be resolved in the generation ahead (but, by implication, not before then).

In 1953, when President Eisenhower introduced the "Atoms for Peace" program, he spoke of "the day when fear of the atom will begin to disappear from the minds of people." Three years later, when George Gallup asked people for their reaction to the prospect of an atomic plant in their community, a 69 percent majority said they were not afraid; Eisenhower's dream seemed swiftly realized. But the growing environmental awareness which began in the late 1960s called many technologies and industries into doubt. While public skepticism about nuclear energy may have reached a highly visible peak after the accident in Harrisburg, many of the questions raised by nuclear opponents and by more than 20 years of experience with nuclear power remain unresolved.

Long before the episode at Three Mile Island, a nuclear uneasiness began to emerge. Even in 1974, a 44 percent plurality in a Roper poll felt an atomic energy plant in their community would "present dangers," although 55 percent in a subsequent (1977) CBS/New York Times survey still approved of building such a plant in their community. Today, the margins fluctuate, but the ambivalence grows. Although 50 percent of the public feels we should "continue to build" nuclear power plants, 73 percent qualify that by saying construction should take place under stricter federal supervision, and only a 46 percent plurality nationwide would vote "yes" on a referendum to locate a nuclear plant within 50 miles of their homes. Although there remains a vaguely favorable tilt to public opinion on preserving the nuclear option, especially in the "long run," there is nothing vague about public sensitivi-

CLEARLY WORRIED.

well-informed business, government and interest group leaders as well, cite nuclear energy on the same list as oil as a "high cost" energy path. It is also significant that for several years, a steadily growing minority has expressed a willingness to pay higher electric bills if such an expense would buy "no more nuclear power plants."

Instead, the public has turned its attention and its hopes to an energy technology which appears to offer both abundance and independence, with none of the ominous environmental and safety drawbacks associated with either the production and

As a pragmatic and results-minded people, Americans reject the idea of closing the nation's existing nuclear power plants and forbidding the construction of new facilities. Such a move, which would foreclose an option that might yet improve our energy posture, met with strong disapproval even in the immediate aftermath of the "scare" at Three Mile Island.

Although there has been a rising awareness of resource depletion, it is still accurate to say that most Americans view the energy problem as an affliction of high costs. Even with growing concern about dependence on foreign nations, and a substantial degree of irritation at the leverage wielded by large oil companies, eight out of 10 Americans in our surveys cite high prices as the number one feature of the country's energy dilemma.

Whether the question pertains to the willingness to see a nuclear generating plant in one's community, or a more general assessment of the pros and cons of nuclear power, women are more resistant to "going nuclear" than men, the young more negative on the subject than other citizens, and the better-educated more likely to oppose nuclear installations than the less well educated.

ties to the dangers of nuclear power.

Put simply, about half of the American public is concerned that nuclear energy is unsafe. Within that half, a small number are unalterably opposed to an expansion of nuclear power under any circumstances. But of greater importance are those who are withholding their approval of nuclear power because we "don't know enough" and "haven't gone far enough" in guarding against the compelling hazards of nuclear accidents and providing for the safe disposal of radioactive waste.

Support for, and opposition to, nuclear power also draws an interesting demographic picture. Whether the question pertains to the willingness to see a nuclear generating plant in one's community, or a more general assessment of the pros and cons of nuclear power, women are more resistant to "going nuclear" than men, the young more negative on the subject than other citizens, and the better-educated more likely to oppose nuclear installations than the less well educated. By region, those in the Northeast and Western states are most opposed to nuclear power; those living in the North-Central and Southern states most likely to support it.

But nuclear opponents, wherever they are and wherever they live, are not alone in expressing explicit concerns about nuclear power. Fully 70 percent of all Americans say they are worried about the problem of radioactive waste disposal. Nearly eight out of 10 say that even in view of the country's need for energy, we have not gone far enough in protecting

public safety from the hazards of nuclear waste disposal and transport. Similar large majorities, which have grown annually since before Three Mile Island, cite safety procedures at nuclear plants as another area where we have not gone "far enough" to protect both the environment and the public well-being. Swelling majorities also name nuclear contamination of water, as well as health problems associated with radioactive seepage, as topics of concern. And while these issues arise most prominently in the arguments of anti-nuclear activists, it should be stressed that among the general public, even those who support nuclear power are increasingly distressed at the lingering questions of industrial and public safety.

It will be no easy matter to allay the concerns about radioactive dangers harbored even by nominal supporters of nuclear power. Any "heating up" of international tensions and re-opened debate on the scope, size and placement of America's nuclear military arsenal will undoubtedly penetrate thoughts concerning the generation of electricity by nuclear means. Israel's attack on an Iraqi nuclear facility may already have served to sharpen the mental connection between the military and "peaceful" uses of nuclear energy. Further, the American public remains strongly concerned about the environmental and safety questions raised by locating nuclear power plants near densely populated areas. Those questions have not been satisfactorily answered either by the nuclear industry or by those government

agencies chartered to regulate their use and safeguard us from the ominous dangers of atomic energy.

Many of America's energy-intensive industries look down a hard, realistic road toward the year 2000 and see serious difficulties maintaining themselves as fossil fueled entities. They see the capacity to generate nuclear power as pointing toward a path out of difficult and costly times, and on the narrow technical question of "can it be done" they are certainly correct that it can. But until the nuclear industry, government regulators and other businesses that desire a stable future energy supply address and answer the profound anxieties now riddling the public consciousness about nuclear safety, the stalemate is likely to continue.

The longer we wait for these concerns to be resolved, the more costly will each imagined nuclear installation become; time thus favors the opponents of nuclear power. An "in principle" desire to see safe, autonomous and inexpensive energy alternatives in the future, and the desire that someday nuclear be among the first of those options, should not be misread. A strategy which focuses on price and slight safety is a dangerous risk for those who foresee the nuclear option improving its appeal as the cost of oil continues to rise. The combined specters of toxic, environmental and genetic damage weigh heavily on the public consciousness. Nuclear power that is as safe as the public wants it will not come cheaply, if it comes at all. ■

limerick ecology action

BOX 761

POTTSTOWN, PA. 19464

(215) 326-9122

August 17, 1984

Robert Rader
Conner & Wetterhahn, P.C.
1747 Pennsylvania Avenue N.W.
Washington, D.C. 20008

'84 SEP -4 A10:45

In the Matter of
Philadelphia Electric Company
(Limerick Generating Station, Units 1 and Unit 2)
Docket Nos. 50-352

Dear Mr Rader,

This letter is in response to your concerns about Limerick Ecology Action's responses to the June 25 Discovery Request of Philadelphia Electric Company to LEA on 'admitted' Off-site Emergency Planning Contentions in the above proceeding.

I am writing in answer to your proposed stipulation of August 10 1984 and offer the following comments:

General Interrogatories

- 1-2. We will provide any further details as stated in our previous supplemental response by Aug. 31. At the present time, nothing has changed.
3. LEA does not believe that the original question in Applicant's Interrogatory dated 6/25/84 requires LEA to 'prepare a list' of materials that it received from the Applicant. LEA has identified the information as correspondence which it has received from the Applicant and believes that this is responsive to the question asked. For the record, we would note that a similar question asked by LEA did not result in the Applicant providing such a 'list' of correspondence to LEA.

In addition, LEA has agreed to provide the requested Affidavits with its August 31 Supplemental filing.

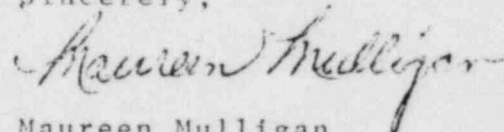
4,5,8,21,16.& 18 - We will try to provide the information requested in our August 31 Supplemental filing. Also same for #22.

35 & 38. We agree.

LEA has no additional information from the July 25 exercise which relates to the subject of its admitted contentions at the present time. However, it is very possible that any PEMA/FEMA reports LEA might receive in the future might contain related information, particularly relating to route alerting and notification.

I will be happy to discuss this matter with you further if necessary.

Sincerely,



Maureen Mulligan
Vice President

cc: Service List

(First served 8/31/84)

AFFIDAVIT OF MAUREEN MULLIGAN
Vice President of Limerick Ecology Action

201 SEP -4 10:46

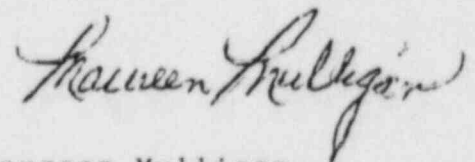
I have provided Philadelphia Electric Company with all available documents and information presently known by Limerick Ecology Action relating to LEA's admitted off-site emergency planning contentions as requested by Applicant's Interrogatories of June 25, 1984.

The information is contained in LEA's responses of July 16, 1984, August 6, 1984, August 13, 1984, and the final supplemental answer served on August 31, 1984.

Limerick Ecology Action has supplied this material in response to your request that a thorough search be made as a good faith effort to insure that Applicant has full knowledge of all information available to LEA. We believe that this information is fully responsive to your concerns. To the best of my knowledge at the present time, I have provided all available information that individual LEA members have knowledge of.

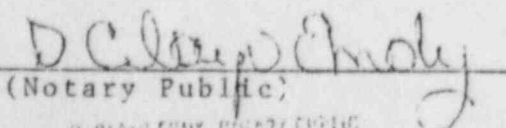
Furthermore, I have asked Mr. Elliott, LEA's attorney in this proceeding, to conduct a thorough search of his files to insure that you were aware of any additional information that might be in his possession. He informed me that a preliminary search has not identified any such materials as of 8/30/1984 and that he will file an Affidavit as you have requested as soon as is practical after he has thoroughly reviewed LEA's Aug. 31st. filing.

Respectfully submitted,



Maureen Mulligan
Vice President
Limerick Ecology Action

Subscribed and sworn to
before me this 31st. day
of August 1984.


(Notary Public)

W. CLARENCE, COUNTY CLERK
COUNTY OF PHILA., PENNSYLVANIA
RECORDED AND INDEXED SEP 11 1984

Please fill out and return to: LIMERICK ECOLOGY ACTION
P.O. Box 761
Pottstown, Pa. 19464

COPIED

NOV 16

Name of Municipality: Colebrookdale Township

Location of meetings: Township Bldg., Rt. 73

Time and date held: 1st & 3rd Mondays at 7:30 P.M.

Contact person for evacuation planning: Jonathan Smoyer, Jr.

Mailing address: R.D.#4 Box 715, Boyertown, PA 19512

Phone number: 367-8977

Has a first draft Radiological Emergency Response Plan for Limerick been completed? yes

If not, what is the status of evacuation planning? _____

Is public input being incorporated into your plans? no

If yes, how? _____

Please fill out and return to: LIMERICK ECOLOGY ACTION
P.O. Box 761
Pottstown, Pa. 19464

Name of Municipality: Douglas Twp. Montz. Co

Location of meetings: Gilbertville Fire Co

Time and date held: _____

Contact person for evacuation planning: Russel B. Hummel

Mailing address: Box 11 Gilbertville Pa 19525

Phone number: 367-5943

Has a first draft Radiological Emergency Response Plan for Limerick been completed? Yes

If not, what is the status of evacuation planning? _____

Is public input being incorporated into your plans? Yes

If yes, how? _____

Please fill out and return to: LIMERICK ECOLOGY ACTION
P.O. Box 761
Pottstown, Pa. 19464

Name of Municipality: Douglass Township, Berks County

Location of meetings: Township Building, R.D.2, Box 503, Boyertown

Time and date held: 2nd & 4th Wednesday of the month - 7:30 PM

Contact person for evacuation planning: Anthony Minotto

Mailing address: 302 Squirrel Hollow Rd., Douglassville, PA 19518

Phone number: 323 6734 OR 323 4780

Has a first draft Radiological Emergency Response Plan for Limerick been completed? yes

If not, what is the status of evacuation planning? _____

Is public input being incorporated into your plans? no

If yes, how? _____

7/6/83

Please fill out and return to: LIMERICK ECOLOGY ACTION
P.O. Box 761
Pottstown, Pa. 19464

Name of Municipality: ROYERSFORD

Location of meetings: 300 MAIN ST. ROYERSFORD

Time and date held: 2ND TUESDAY OF THE MONTH

Contact person for evacuation planning: ROBERT DE ANGELO

Mailing address: 654 KING RD. ROYERSFORD

Phone number: 948-5575

Has a first draft Radiological Emergency Response Plan for Limerick been completed? YES

If not, what is the status of evacuation planning? _____

Is public input being incorporated into your plans? _____

YES

If yes, how? PUBLIC MEETINGS

6/20/03

Please fill out and return to: LIMERICK ECOLOGY ACTION
P.O. Box 761
Pottstown, Pa. 19464

Name of Municipality: Lower Pottsgrove Township

Location of meetings: Township Office

Time and date held: Announced

Contact person for evacuation planning: Roy W. Cubbler

Mailing address: 630 Woodland Drive, Pottstown, PA 19464

Phone number: 215-326-4073

Has a first draft Radiological Emergency Response Plan for Limerick been completed? Yes, we are beyond that point.

If not, what is the status of evacuation planning? _____

Is public input being incorporated into your plans? Yes

If yes, how? We have begun plans to have an emergency action board appointed which will include residents from Lower Pottsgrove Township. This board will, if my request holds up, concern itself with the entire spectrum of emergency action..i.e. disasters both man-made and natural.

6/27/03

Please fill out and return to: LIMERICK ECOLOGY ACTION
P.O. Box 761
Pottstown, Pa. 19464

Name of Municipality: NEW HANOVER TOWNSHIP
The Municipal Building
Location of meetings: 2943 N. Charlotte St., Gilbertsville, PA
Time and date held: as necessary - next meeting: 7/13/83

Contact person for evacuation planning: Daryl Groves, E.M.Dir.
Mailing address: Lutheran Rd., Gilbertsville, PA. or Anita John at
Township Bldg.
Phone number: (215)754-6176 323-1008

Has a first draft Radiological Emergency Response Plan for
Limerick been completed? Yes. Also second draft completed and
ready for review.

If not, what is the status of evacuation planning? _____

Is public input being incorporated into your plans? No one has
indicated interest, but we would be pleased to have public input.

If yes, how? _____

Please fill out and return to: LIMERICK ECOLOGY ACTION
P.O. Box 761
Pottstown, Pa. 19464

Name of Municipality: Upper Frederick Township

Location of meetings: Upper Frederick Municipal Building
Rt. 73, Obelisk, Pa.

Time and date held: 2nd Tuesday of every month at 8:00 PM

Contact person for evacuation planning: Charles Meehan

Mailing address: RD, Perkiomenville, Pa. 18074

Phone number: 754-6583

Has a first draft Radiological Emergency Response Plan for
Limerick been completed? Yes

If not, what is the status of evacuation planning? _____

Is public input being incorporated into your plans? No

If yes, how? _____

6/25/83

Please fill out and return to: LIMERICK ECOLOGY ACTION
P.O. Box 761
Pottstown, Pa. 19464

Name of Municipality: UNION TOWNSHIP
Location of meetings: ^{TOWNSHIP(?)} TOWNSHIP BUILDING CENTER RD
Time and date held: 3RD MON OF THE MONTH 7:30

Contact person for evacuation planning: MARIA (MARIE) LOWERY
Mailing address: Box 33 Rd 1 Danville, PA 19578
Phone number: HOME 326-5641 WORK 918-3345

Has a first draft Radiological Emergency Response Plan for Limerick been completed? YES BY ENERGY CONSULTANTS

If not, what is the status of evacuation planning? _____

Is public input being incorporated into your plans? VERY LIMITED

If yes, how? through TOWNSHIP MEETINGS
would like to see CITIZENS ADVISORY COMMITTEE

Please fill out and return to: LIMERICK ECOLOGY ACTION
P.O. Box 761
Pottstown, Pa. 19464

Name of Municipality: Amity Township
Location of meetings: Amity Township Building
Time and date held: 1st + 3rd Mon. of month - 8:00 P.M.

Contact person for evacuation planning: Harold Reigel
Mailing address: Box 461 R.D. 2 Douglassville, Pa. 19518
Phone number: 215-689-5678

Has a first draft Radiological Emergency Response Plan for Limerick been completed? Yes

If not, what is the status of evacuation planning? _____

Is public input being incorporated into your plans? Yes

If yes, how? Local questionnaires used to obtain information, and meeting with local organizations involved in the planning of evacuation procedures

6/22

3b

Calls made by
Bill Miller

7/16/84

• Lemire Township - Emerg. Coordinator
Edward Dohmer

1. yes

2. no

3. don't know

4. no

5. not sure

6. "He haven't really gotten this far with our plan yet." "I don't know anything about route alerting."

Name and title of person you talked to: Robert Reber or any of his assistants, 374-4800
date: July 13, 1984
Called: Barbara Ritter
We need results by July 15 (Sunday)

Please call the County Office of Emergency Planning and get answers to the following questions:

- 1) Who is responsible for making arrangements for buses needed by school districts in the county for the purpose of developing radiological emergency response plans for Limerick.

County has sub plans

- 2) What is the status of these arrangements? (or what info is the county aware of)

Mr. Reber feels they are prepared.

3) Generally, try to get any of the following items answered (approximately)

How many buses are still needed? For what school
How many written agreements still need to be completed? Does this include both private & public schools?

get any details you can
Mr. Kiber says buses are arranged for in David Boone, Inc. with willing drivers (but no signed commitment)

4) Have any public school districts refused to accept responsibility for any of the private school districts (they are supposed to be responsible for?)

If yes, which ones? No

5) Who is responsible for coordinating the assignment + dispatch of buses during a radiological emergency? Kiber Office

Does this include assignment to private schools? yes

6) What is the status of emergency planning for day care, + preschool centers and summer camps
Kibera office feels this is taken care

a) Has anyone contacted those identified by LEA to determine their needs? *yes*

b) If yes, who? (ECTI, ^{for example:} or the county, or the local municipality)

c) Does the county plan to make sure these groups of children are included in emergency planning?
for Kibera *yes*

d) If yes, at what level?

ie... - include in county plan

- include in municipal plan

please indicate

- include in school district plan

✓ develop separate plan for evacs.

- other?

e) If not covered above, what is the status of this?

For example -^{a)} Has list of facilities been turned over to municipalities for them to make any necessary arrangements?

or b) Has ECTI been instructed to contact these facilities + to include them in the next draft of municipal plans?

or c) Other???

7) When ~~is~~^{is} the County anticipating release the next draft of the County plan?

(ie sometime after the drill? — yes
- sometime later this fall?

8) Does the County have any idea when the next draft of municipal plans will be released or completed?

Same as above

9) What about school district plans?

same as above

10) Who is responsible for making arrangements for the availability of fuel supplies and towing services on non-state roads

(Confirm his understanding of who has this responsibility for state roads - It's supposed to be the National Guard) They have arrangements that filling stations stay open and towing services contacted

(The answer should be that the municipalities have this responsibility).

11) Does the County play any role in assisting to make these arrangements or in providing back-up assistance?

(ie - contacting gas station owners + towing services to determine their willingness already contacted)

12) Most of the Municipal plans (Draft #5) still indicate that arrangements for towing + fuel supplies are "to be developed" (TBD). Does the County have any idea whether any progress has been made in obtaining any necessary agreements?
About

(We expect that the answer will be 'no', but need to confirm this)

13) Who is responsible for making arrangements with local fire companies to participate in "route alerting" for the municipal emergency response plans? Fire companies in siren area would "route alert"
(As is the municipality?
" " " the county? - county made arrangements
or is it Energy Consultants, Inc? w/ fire companies

14) What does the County know about the status of these arrangements?
files they are prepared

15) Is the County aware that in the event of a loss of power that ~~the~~ "route alerting" would be used as the primary method of notification?
yes

16) Have local emergency coordinators been told this by anyone?
yes

17) Have firemen been told this by anyone?
yes

18) What has been the response of the fire companies in each municipality?

(What info is the county aware of?)
They are willing according to Mr. Reber

19) What equipment does the county feel is necessary for "route alerting"?
feel fire companies have such equipment or are in process of obtaining it

20) If a municipality or fire company doesn't have this equipment, where are they supposed to get it?
P.E. will help

(Answer will probably be "from the county" - If it is, ask them where they're supposed to get it, if not currently available.)

21) What is the status of "training" for the school districts?

(Is it all completed?
for Business? _____
for School staff? _____
If not, what is the schedule

22) Does the county believe that the training provided is "adequate".

yes

If not, why not.

23) Does the county expect to receive help on July 25 from any "Philadelphia Electric" volunteers?

If they request it from P.E.

comment: We have become aware that PECO has trained 200 people to act as "volunteers" at the municipal EOC's. Alert them to the fact that we know about this - Our main concern is that they not allow "volunteers" to just show up on July 25 unless they're going to make the same commitment to help out during a radiological emergency.

Board of Supervisors
CHARLESTOWN TOWNSHIP

Secretary

~~Mrs. Margaret A. Chiacino
Yellow Springs Road
Devault, Pa. 19432
Telephone: 647-7030~~

P.O. Box 76
Devault, Pa. 19432

Supervisors

John C. Martin, Jr.
John B. Garvin
William W. Buckwaite

Mrs. Peggy Gallagher
Valley Hill Road
Box 48, R. D. #1
Malvern, Pennsylvania 19355

March 7, 1984

Mrs. Katrina S. Daly
c/o Daly Box 276
South Orleans, Massachusetts 02662

Dear Mrs. Daly and Family:

Your letter of February 27 has been received and it, along with comments and questions of other Charlestown residents bearing on the subject of your letter, was the reason that we invited members of the Chester County Emergency Services Department and Philadelphia Electric to attend our recent regular March Supervisors' Meeting (March 5, 1984). Although Philadelphia Electric did not choose to attend, there were two members of the Chester County Emergency Services Department who appeared at the meeting prepared to answer questions concerning the siren tower problem.

As you seem to know, the Nuclear Regulatory Commission has dictated that the Limerick Nuclear Power Station operator, Philadelphia Electric Corporation, must install and maintain a public warning system to indicate to the public that there has been a nuclear incident or event at Limerick. The warning system must alert all personnel within a ten mile radius of Limerick. (The ten mile figure is an increase from the original five mile figure as a result of the Three Mile Island event.) All of Charlestown Township north of the turnpike is defined as lying within this area.

Philadelphia Electric has elected to use the siren system to provide the necessary warning just as they have already installed and demonstrated around the Peach Bottom plant on the Susquehanna River.

You are correct in your opinion that the sirens will be mounted atop a fifty-five foot pole or tower which will, in addition, support an air compressor to power the siren. Charlestown has been advised (after questioning Philadelphia Electric and Chester County officials) that we will have five such towers.

The township has not approved any tower installation either as to location or configuration, nor will we do so until there is some action by Philadelphia Electric to apply for a zoning variance since such a tower exceeds our Zoning Ordinance as to height. The placement of any tower must consider both its purpose as well as its detrimental impact on nearby residents.

You should realize that the acceptance of any Philadelphia Electric request by a resident will leave that resident liable for a zoning violation within the township and we do not intend to accept or condone such action.

March 7, 1984

At present, no negotiations have been entered into between Charlestown Township and Philadelphia Electric, or any other agency in their employment, as pertains to the erection or placement of the siren towers.

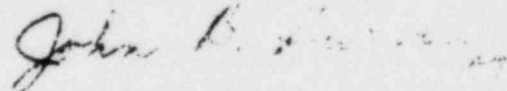
Charlestown Township does have an Emergency Coordinator whose official duties include working with the County Emergency Services Department and with Philadelphia Electric in the development of an evacuation plan suitable for implementation should an accident at Limerick necessitate such action. To date this effort has not addressed the siren warning system, although the need and existence of some such system has been recognized. It should be realized by everyone in the township that there should be in existence a plan for handling any sort of catastrophic event. The events considered include a problem at the nuclear power station, but also such events as a large explosion or a plane crash or an accident involving hazardous materials on our roads or on the turnpike, to name a few. The development of the evacuation plan for Limerick has been a very strong incentive to initiate plans for all such accidents so, in that sense, it is a good thing because no such plan has been generated before.

You should know that the development of the evacuation plans has not yet proceeded to that stage where it can be presented to the township population, but rest assured that as the definition of a plan becomes more clear, such a public review will be held. A meeting will be announced and held wherein taxpayers can be informed of the plan and then be heard as to comments or revisions for such. Any action relative to the placement of the siren towers will also be discussed with the nearby residents prior to implementation.

In answer to your last paragraph concerning the Chester County-Charlestown Township Emergency Services organization, yes, such an organization does exist and it has been functioning very effectively for the past several years. All fire and ambulance and industrial or vehicle accident events are, and have been, coordinated and implemented by these organizations. We are fortunate in having several superb emergency agencies to take action as necessary to combat such events. I am referring to the Kimberton Fire Company, the East Whiteland Volunteer Fire Company, and the State Police, as well as the Paoli paramedic team and, if need be, the Keystone Helicopter Corporation, all of whom stand ready to respond to emergencies in your township.

We, your supervisors, welcome your interest in your township and urge you to participate in all activities which make this a wonderful place to live.

Sincerely yours,



John B. Garvin
Chairman, Board of Supervisors

CC: All Supervisors
All Planning Commission Members
Zoning Officer
Emergency Coordinator with a copy of Mrs. Daly's letter

February 27, 1984

John B. Garvin, Chairman
Board of Supervisors
Charlestown Township
Box 119, RD#1
Malvern, PA 19355

Dear Chairman Garvin:

The Philadelphia Electric Company has approached us requesting that we grant them an easement for the purpose of installing a pole with a platform, compressor and siren on our property in Charlestown Township. This pole is to be used for an emergency alert system.

It is our understanding, from conversations with Mr. Amatucci of PECO, that the Nuclear Regulatory Commission, in 1980, announced requirements that power plants have emergency warning systems for the public. We understand that the system is to be maintained by PECO and run by the civil defense of each county.

We understand that this pole will be fifty-five feet high. It will have wires or cables attached. We have no knowledge about their size. The platform will be fifteen feet in the air. It will be 2½ X 3 feet and have a compressor box on it. We assume repair people will climb the pole to get to the platform as no ladder was mentioned. The siren unit will sit on top and consist of a horn sticking out three feet "or so"-it will rotate. The federal government apparently requires that this be set off for three minutes once a month.

PECO wishes us to grant the easement on the southeast side of Charlestown Road - there is a pole across from the Joseph Smith residence (this pole has a bright pink-orange NO TRESPASSING sign on it). PECO would like to put the siren there - the present pole would be removed and a new pole placed "5 to 7 feet" into the field. They would also accept an easement to place the pole "5 to 7 feet" into the field up the hill at the location of the next pole (this pole is hard to see but is where the woods and field meet).

Chairman Garvin
Feb. 27, 1984
Page Two

We would appreciate hearing from the authorities of Charlestown Township as to whether or not a zoning variance is needed to place this pole. Are any other actions or permits necessary before said pole can be placed?

We would also like to know whether or not Charlestown Township has adopted any evacuation plans relating to the Limerick Nuclear Power Plant and if the adopted plan mandates or agrees to the PECO emergency alert system. In other words, have the authorities in Charlestown reviewed the plan for placement of the poles? If not, why not? It seems to us that this is a matter for public review. The sirens are to warn people. We assume they will be very loud. We assume their presence will devalue our property and the property of adjoining and nearby property owners.

We object to providing power from nuclear power plants. We feel they are extremely hazardous to each person's health: they are too costly in terms of health, environmental damages and capital. We object to possibly having to grant an easement to enable Limerick to go "on line".

Finally, we are rather uninformed as to the organization of the Chester County-Charlestown Township Civil Defense. We need to know if they are organized, if they will be on duty twenty-four hours a day, whether this alert system will be run by them from West Chester or Limerick and whether or not Charlestown has "official" people involved.

Thank you for your attention to this long letter and many questions.

Sincerely,

Katrina Stonorov Daly
and also for: Barbara Stonorov
Derek Stonorov
Andrea Stonorov Foster

cc: All Supervisors
All Planning Board Members
Zoning Officer

March 12, 1984

Robert W. Saylor, Chairman
N. Coventry Township Supervisors
873 S. Hanover St.
Pottstown, PA. 19464

Re: Limerick Generating Station Draft Evacuation Plans & Siren
Alerting System

Dear Chairman Saylor:

This letter is drafted in response to Philadelphia Electric's evacuation plans for the municipalities and townships within the 10 mile radius of its Limerick nuclear power plant. As residents of North Coventry Township, Chester County, as parents and as taxpayers, we are dissatisfied with these plans and distressed in their lack of consideration for our Township and County and surrounding jurisdictions.

For example, on or about the second week of February 1984, sirens were installed in 7 sites around our Township by PECO without prior approval from our Township Supervisors, the Zoning Board and certainly without notice to the residents of this Township. In fact, one such siren has been erected on a 44 foot pole across the roadway from some of our properties in a highly residential area, without regard to height restrictions, road setback, proximity to homes, population density, and property devaluation. PECO has wrongly asserted that it is exempt from all zoning restrictions and was acting under mandate from the State and PUC. However, PECO never even applied to the PUC for an exemption and acted without color of authority in erecting these sirens. Furthermore, PECO spokespeople have provided inconsistent data about the frequency, duration of testing and decibel level.

We are angered about the deceptive manner in which this siren system is being installed and the attempts to circumvent local procedures. We are angered about the effect the installation of these sirens towering over our homes will have on the value of our properties and the effect the repeated testing will have on our children and animals.

This surreptitious approach employed by PECO leaves us residents skeptical of any materials offered by PECO for approval and acceptance. As you are aware the Limerick nuclear facility is in the second most densely populated site in the U.S.; at 20 miles, Limerick is four times more densely populated. The state of emergency preparedness provides reasonable assurance that prior to license issuance adequate protective measures can and will be taken in the event of a radiological emergency. Despite PECO's false statement that most townships have submitted their evacuation plans for review, lingering and upsetting questions remain whether these evacuation plans can be implemented in sufficient time to protect public health and safety during an incident at Limerick:

(1) The EPZ is arbitrarily set at a 10 mile radius, yet how can

radiation be stopped at a township line? Where are the reliable time estimates for evacuation to be completed?

(2) No realistic assessment has been made of road capabilities, congestion created by traffic flow, inclement weather and ingress into more densely populated areas (e.g. King of Prussia, Exton). How will tow, gasoline, busses and other emergency vehicles get through?

(3) Limited resources, insufficient equipment and personnel availability will impair the ability to implement these plans. How can the police, fire department and "volunteers" effectively evacuate the handicapped, invalids, pre-school children in private day care, and the large segment of the population that remains without transportation or even sufficient gasoline on the day in question? Where are the necessary busses, ambulances and vehicles to meet these needs?

(4) Will school personnel, supervisors, and teachers remain with our children when the fate and whereabouts of their own families are unknown?

(5) Who will secure our homes and businesses from vandals and looters once there is a general or selective evacuation?

(6) What precautions are being taken in the event of a spontaneous evacuation during preliminary stages of alert and preparedness?

(7) Why has the date July 25th been designated for the evacuation drill? How can an accurate assessment of emergency preparedness be obtained if a substantial segment of the population will be on vacation and our children be outside a school or pre-school setting when the testing is even done?

The questions are endless. The concerns are mounting, especially in view of PECO's attempts to bring in uranium fuel rods to store on site at Limerick later this month. Blind acceptance of PE's decisions are not in our community interests and we request of you, as our elected officials, to investigate these issues and to speak up now to safeguard the area in which we live and to protect our future and our children's futures.

Sincerely,

4 pms Lester H Wilson
1538 Temple Rd

Suzanne Balen Ercolen
Dr. Dennis Ercolen

Susan K. Cimbady Temple Road
Stinda L. Koenig, Delaware Ave.

Timothy Felkuebelger 1540 Temple Road

Paul R. Hidon }
Margaret J. Hidon } 1546 Temple Road

Samuel L. Embrey Temple Rd.

Letter sent to U.S. Senators Arlen Specter and John Heinz; State Senators John Stauffer and Noah Wenger; State Reps. Samuel Morris and Arthur Hershey; Chester Co. Commissioners; North Coventry Twp. Supervisors; PUC Commissioner M. Johnson, Secretary Jerry Rich.

Evening Phoenix
7/26/84

Local officials voice concerns

By CAROL BALINSKI
Staff Writer

Firefighters, volunteers and citizens involved in Wednesday's emergency evacuation drill for the Limerick nuclear power plant reacted today with concerns over the ability to hear the sirens and whether there was enough time to carry out emergency preparations.

Area fire chiefs and citizens agreed the sirens were not as loud as expected, but Kimber, on Fire Chief Bob Dobson attributed that to the fact that all the sirens have not yet been installed. Forty-six of the 166 warning sirens planned for the Limerick area still have to be put in place.

While Phoenixville residents outdoors or near an open window could hear the sirens easily, some residents complained they could not hear the sirens indoors.

Paul Martens, 214 Kleyona Ave., Phoenixville, stated he could not hear the sirens with his air conditioning turned on. He stated a siren was less than a quarter-mile from his home, on Pennypacker Avenue.

Dobson said when all the sirens are installed they will overlap areas so that all residents will hear them. The sirens rotate in different directions

but Dobson said that all areas may not be covered at the same time at present, due to the uninstalled sirens.

ROUTE-ALERTING

Dobson agreed with other fire chiefs who said they did not have time to complete their route-alerting before the evacuation was called for. He explained the fire companies were told to take public-address system trucks out on the road to alert residents to turn on their radios for information regarding the emergency.

The route-alerting is designed to supplement the siren system in case the sirens failed to sound and also to provide information to those who may not be able to hear the sirens.

However, Dobson and the other chiefs stated they could not complete their routes in the allotted 45-minute time period. He and two other fire chiefs, Linwood Kolb of Ridge Fire Co. and Lewis Deputy of Ludwigs Corner Fire Co., stated it took them over an hour to complete their routes.

Dobson suggested the firemen may need to use more trucks and divide the area into more routes.

While he stated the drill was

(See REACTION, P2)

• Reaction

(Continued from Page 1)

"hctic in the beginning," Dobson said he "learned a lot from it. We got some ideas to improve the flow of communications."

A problem of a different type was reported by George Turner, manager of the reception center in West Whiteland Township at the Exton Square Mail parking lot. He said he will request the location of the center be changed to the township building on Route 100 since it will be easier to reach and will be more convenient to use.

Turner noted that a group of volunteers from Philadelphia Electric Company failed to arrive at the Exton site until very late in the drill. He said they were not familiar with the area and could not find the mail.

The purpose of the reception center is to provide maps and information to evacuating residents who then proceed on to the mass care facility. One group was diverted to Kennett Square High School in Wednesday's drill.

Even though most evacuating residents would be able to find the mail, Turner said he will request the site change because the parking lot location would still be unsatisfactory in bad weather and entrance to the lot might be made difficult due to traffic congestion. The township building is conveniently located just off Route 100, he noted, and all maps and supplies are stored there.

Representatives of Limerick Ecology Action (LEA), Schuylkill Alliance and other observers took part in a demonstration on the steps of the Montgomery County Courthouse in Norristown Wednesday and LEA members also took part in a

balloon release from the Limerick Elementary School. The balloons contained anti-nuclear messages. Both events were well attended.

Dave Stone, of LEA, stated he spent most of the day observing the drill procedures.

He and Anne Jackson, of Schuylkill Alliance, both expressed concern over a letter sent by Tim Campbell of the Chester County Department of Emergency Services informing some townships and fire companies to expect the sirens to sound between 7:30 and 8:30 p.m.

"That bothers us. It was a shaky kind of drill," Stone said, noting that everyone knew when to expect the emergency.

However, a representative from the Emergency Services office saw no need to defend the letter, noting it was no secret the drill would probably occur at night, when volunteers would be available. He also said townships needed to know when to expect to receive phone calls from citizens about the sirens.

The LEA observers gathered information from the drill and plan to point out deficiencies, he said.

In Phoenixville, Borough Councilmembers Bonnie August, Helene Rambo, Robert Mark, John Fedora and Alex Kovach and Borough Manager Bill Herman were present at the Emergency Operations Center.

"It wasn't the drill people expected," August said, noting the sirens were not as loud as she thought they'd be.

She added, "It (the drill) was done systematically. They carried out the job very well."

August remarked that she was still unsatisfied with the fifth draft of the borough's evacuation plan which was used in the drill, which is why she voted against the borough's participation.

Evening Phoenix
7/26/84

Hospital carries out decontamination drill

By CAROL BALINSKI
Staff Writer

PHOENIXVILLE — A decontamination drill at Phoenixville Hospital went smoothly Wednesday, drawing praise from a representative of Energy Consultants, Inc. who called it the best first-time drill he had seen.

The drill occurred around 1 p.m., preceding the emergency evacuation drill for the Limerick nuclear power plant. The decontamination drill was not conducted as part of the emergency evacuation drill, as was the hospital's volunteer evacuation drill last night.

A male volunteer underwent a mock decontamination in an isolated section of the hospital, according to Dr. Jean Taylor, chief technologist of the Department of Diagnostic Imaging.

Dr. Taylor said the team of nurses and doctors, some of whom specialized in nuclear medicine, "went through the motions" of decontaminating the unidentified

volunteer victim, who was supplied through the Chester County Department of Emergency Services.

Following the exercise, Jack O'Sullivan, consultant radiation physicist for Phoenixville Hospital and an observer of the drill, stated, "I feel the hospital is sufficiently prepared to handle a case of radioactive contamination."

Dr. Taylor said the hospital received word that a radiation victim was en route to the hospital via Spring City Ambulance. He was reportedly transported from the Pennhurst Center administration building.

Dr. Taylor said the staff members first cordoned off an isolated area of the hospital so that contamination could not occur and posted signs warning "Caution — Radiation Area."

The staff on hand included several nurses; the emergency room physician; Dr. Taylor; Dr. Michael Dooley, radiation protection officer.

(See HOSPITAL, P2)

• Hospital

(Continued from Page 1)

and two nuclear medicine technologists. All of the staff members wore gowns, masks and caps to protect them from radiation exposure.

VICTIM MONITORED

When the victim arrived, staff members began to monitor him with survey meters to detect the amount of radiation involved. They also wore dosimeters to measure the amount of radiation they received.

The patient was then taken to a special room where the decontamination procedure, which consists of flushing his body with water, would take place. If the emergency had been real, the man's clothing would have been placed into a receptacle lined with plastic and put into an

isolated area of the hospital to decay.

Dr. Taylor said the radiation would decay over a period of time, sometimes in less than eight days.

She said the dose of radiation which was involved in the mock drill was low.

However, all ambulance personnel had to be monitored as well since it was likely they would have become contaminated while transporting him. In the drill, some of the ambulance workers did receive contamination and had to be decontaminated.

Dr. Dooley and the two nuclear medicine specialists did all the surveying for contamination, Dr. Taylor said.

She noted the exercise did not take place in the emergency room since a real decontamination could result in contamination for nearby areas of the hospital and would require the closing of the emergency room

TODAY'S WEATHER

Periods of rain likely tonight with lows in the mid to upper 60s. Considerable cloudiness Friday with showers likely. Highs in the mid 70s.

the evening phoenix

VOL. 94 — No. 256

Thursday, July 26, 1984

Phoenixville, Pa.

30°

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Emergency drill turns up strengths, weaknesses

By M. JOAN McINTIRE
Staff Writer

LIMERICK — Philadelphia Electric Co. officials say there was "successful" community participation in its drill to test response in case of an accident at its Limerick nuclear power plant, but others disagree.

The day-long exercise began at 11:20 a.m. Wednesday, when Limerick operators were given theoretical problems simulating accidents at the plant, PE spokesman Ron Harper said. It was the only "full-participation exercise" scheduled before the decision is made on whether to license Limerick.

Harper, speaking from a news center at PE's Philadelphia headquarters, called it a "challenging exercise" as it ended at 11 p.m. It was then that PE

declared the reactor stabilized, the simulated release of radiation stopped, and the exercise concluded.

"We confirmed some strengths and weaknesses in the news center operation. We depended on technical information from the plant, but the exchange of information through the agencies out there outpaces our ability to convert it to news and get it out.

"We think it's a very successful participation in terms of interest," said Harper. "Some see it as a good exercise. They would go through the same steps to test their communications abilities and response in any kind of emergency — nuclear, chemical or weather-related."

'GOOD COMMENTS'

Phoenixville's volunteer director of emergency ser-

vices, Donald Sees, commenting after the drill, said that in general, official observers from the Federal Emergency Management Agency (FEMA) "gave us pretty good comments." Sees stressed that the official evaluation comes Friday morning when FEMA and the Nuclear Regulatory Commission (NRC) publicly critique participants.

"They noticed that the noise level inside the EOC (Emergency Operations Center at Phoenixville Hospital) was too high, said we need some additional phones, and we had some problems with the plans — but we performed well. We had a good turnout of volunteers. At one time, we had a total of about 60 in the EOC," Sees said.

John McNamara, assistant director of the Chester County Department of Emergency Services, said this

morning that the drill was neither a total success nor a total failure.

GOOD, BAD

"It was a valuable experience. We learned some of the problems and good areas," McNamara said. "The plan needs to undergo a lot of analysis.

"Some people (volunteers) actually drove to the Unionville mass care center. They went through the reception center at Exton (Square Mall) and were sent on to Unionville. We know a bus from East Pikeland got to the reception center at Exton and was sent back because the exercise had concluded.

"There are definitely things we need to improve and (See DRILL, P2)

• Drill

(Continued from Page 1)

things we did well," McNamara concluded.

Robert Thompson, one of the Chester County Commissioners who observed activities at the county Emergency Operations Center in West Chester, said he felt the exercise progressed well.

But Montgomery County Commissioner Rita Banning said the test was insufficient.

"My great concern about this is that PE is going to try to pull off what is happening as a real full-scale exercise, and that it is not. Things are still so incomplete as far as what has been done in Montgomery County."

One purpose of the drill was to test the emergency plans of local, state and federal agencies in a 10-mile radius of the plant, involving 43 localities and 205,000 residents in Chester, Montgomery and Berks counties.

But there was no evacuation or participation by schools and seven localities refused to participate, saying they were not prepared.

Banning said she felt a full-scale exercise would include a drill of buses, moving vans and ambulances. She also said PE should not draw up its own simulated exercises, but rather should allow a third party expert to plan and determine the time to begin the drill.

The first and least serious of the simulated emergencies was a fire in the turbine building, a non-nuclear section of the plant at 11:20 a.m.

It was declared under control at 12:07 p.m. but a second "unusual event" took place at 1:30 p.m., when the steam pressure increased in the dry well around the reactor.

At 4 p.m., the situation was declared an "alert" due to high levels of radiation in the dry well, but no release to the outside had occurred.

Municipal officials were contacted and municipal EOC's were activated by the Chester County EOC.

PE declared a "site emergency" at 5:30 p.m. and officials of PENNA and the state Bureau of Radiation Protection were notified. The EOCs and township officials were notified of the chance of status.

A "general emergency," the most serious stage, was declared at 7:30 p.m. and evacuation was recommended.

Warning sirens were sounded in the 10-mile radius of the plant at 8:45 p.m. PE recommended evacuation of people in a 2-mile radius and within 10 miles downwind — Pottstown and areas west of it.

PEMA ordered the 10-mile radius in all directions evacuated. The exercise concluded at 11 p.m.

Emergency plan at Limerick is a new ballgame

By DAVE MUELLER
(Of the Local News Staff)

Peach Bottom and Limerick are 60 miles apart, as the crow flies. For the motorist, it's considerably farther.

But for the emergency planner, Peach Bottom and Limerick are worlds apart.

True, both are nuclear plants. Both are owned, in part or in full, by Philadelphia Electric Co. Both require emergency plans to prepare residents within a 10-mile radius for evacuation or take-cover orders.

But there's a critical difference between the two. One is running, the other is being built.

There's another important difference. The population is considerably denser around Limerick.

Thirdly, opponents to Limerick are still actively working to prevent it from ever operating. Indeed, opponents succeeded this year in halting — at least temporarily — construction of the second of two reactors.

And at least one municipal official is opposing creating emergency plans that are financed by township coffers.

This Limerick equation makes it a sure bet that planning for an emergency at Limerick will hardly be a smooth process.

"It's a different ballgame," admitted county emergency services director Timothy Campbell, who supervised the county's 12-hour emergency drill for Peach Bottom back in June.

Cooperation not as easy

Campbell said getting the cooperation of residents near Limerick won't be nearly as easy as it was in West Nottingham Township.

"I'm sure as we go further along, there'll be a reluctance on the part of some," Campbell said. "It (Limerick) is still a very emotional issue. It is very different atmosphere from Peach Bottom. People down there were used to it. The plant was running while we were planning."

Limerick I is almost 80 percent complete and scheduled to begin producing

power in April, 1985, provided the Nuclear Regulatory Commission approves its license. Campbell said emergency plans must be ready before the beginning of the NRC's licensing hearings (tentatively scheduled for early 1984.)

In the meantime, Campbell will have to coordinate the planning efforts of 14 northern Chester County municipalities with a combined population of 57,000.

That's provided every municipality will cooperate. Richard Whitlock, for one, is broadcasting strong signals that some may not without some financial help.

"The number one question to me, as chairman of the board of supervisors of South Coventry Township and as head of the Federation of Northern Chester County Communities, is, somebody has to pay the bill," Whitlock said.

Six-township federation

Whitlock heads a federation of six townships — East Pikealand, East Vincent, West Vincent, South Coventry, North Coventry and Warwick — that forms a crescent across northern Chester County from Kimberton to Elverson. The area is rural — the average population of the six townships is only 3,570 — with South Coventry (pop. 1,644) one of the loneliest townships in the county.

Whitlock estimated that planning for an emergency at Limerick could cost South Coventry \$10,000. He said the township collects \$28,000 in taxes and has no full-time employees.

"How can I justify to the voters of my township increasing our budget 40 percent to provide a plan for a company that announces quarterly dividends to its shareholders?" Whitlock said. "I can't justify that to myself morally."

Whitlock admitted every township is charged with preparing emergency plans.

"We are not opposed to a plan," Whitlock said. "I'm not saying we're opposed to Limerick. In principle, we're looking for a plan. But damn, I can't see asking the people in this community to

(Continued on Page 2 Column 4)



LIMERICK I is almost 80 percent complete and scheduled to begin producing power in April, 1985, provided the Nuclear Regulatory Commission approves its license.

DAILY LOCAL NEWS

Limerick

(Continued from Page 1)

"Dick Whitlock" has a point," admitted Campbell. "However, when you prepare a plan for a transportation incident, you're preparing for an incident that could be caused by a number of private companies. The job of government, by law in Pennsylvania, is to be prepared for any and all disasters."

"Never enough money" Mark Coren, borough manager for Phoenixville, struck a more conciliatory tone.

"There's never enough money," Coren said. "We're not going to throw up our hands and do nothing. We realize our plan may not be as good as if there was an infusion of money from Philadelphia Electric — we won't encourage that — but we recognize the realities of Limerick."

One of the realities of Limerick is it will have one of the highest population densities of any nuclear plant when it opens. Campbell said emergency planning for Limerick will be wide in scope. Planning methods of notification, evacuation routes, means of transportation and shelter centers are some of the tasks ahead.

Because of the population density of the 10-mile radius around Limerick (over 200,000), Campbell predicted the final plan will direct an evacuation "in all directions." He said Chester Countians near the plant will likely be directed to head west towards Honey Brook.

PECO's role is to create a comprehensive on-site plan and provide help in drafting the off-site emergency plan.

"Our plans are only one chapter in a book," said PECO spokesman Nell McDermott. "We aren't the book."

PECO consultant Energy Consultants Inc., to gather data for off-site emergency planning. The consultant now is contacting townships to find out what must be done in the event of an emergency.

PECO has taken pains to point out that emergency at Limerick may mean a take-cover order instead of an evacuation order.

"I wish people would stop assuming we're talking about evacuation," said Robert Kankus, PECO's emergency planning director. Kankus and McDermott said that if townships discover evacuation is indeed impractical, it is a disaster that would be relevant for other potential disasters.

"If the roads aren't good enough for Limerick, they have a lot more to worry about than Limerick," McDermott said. One prominent opponent of Limerick is Phyllis Zitzer, director of Nontheless, Phyllis Zitzer, director of Limerick Ecology Action, said many members of LEA, one of the leading opponents of Limerick, will be assisting municipal and school district emergency planning.

"I don't belittle the importance of us," Zitzer said. "But I am skeptical that a workable plan can be drawn up."

Kankus said PECO's consultant is supposed to have completed its work by this spring. Campbell said the county's task should pretty much be accomplished by this time next year. "Then, a full-scale drill must be held before Limerick can operate commercially."

The Schwenksville

Devoted to the Interests of the Perkiomen Valley

VOLUME 106, NUMBER 49

SCHWENKSVILLE, PENNSYLVANIA THURSDAY, AUGUST 9, 1984

In Perkiomen Township

'Who Pays?' is Big Question

"Who is going to pay if a volunteer is hurt during an emergency test or actual incident?" was the unanswered question at the Perkiomen Township supervisors meeting Tuesday night in the Perkiomen Valley High School cafeteria.

Greg Whitman, a Philadelphia Electric Company representative, hoped he had the answer when the supervisors went into the public participation of their meeting.

Whitman was there to answer the question which had been voiced before by the supervisors.

He said that the volunteer could be covered by their own insurance, file a claim with the Pennsylvania Emergency Management Association, or go to Philadelphia Electric for help in some instances.

"I don't like that idea", supervisor Dave Meyers said. "I think the volunteers should be sworn in by the township and covered by workmen's compensation."

Meyers pointed out that volunteer firemen are covered while answering an emergency.

"I can't bring people out who are not covered", Meyers added. He said that it might take action by the state legislator before the problem is corrected.

"I don't like to come down on you", board chairman Dick Kratz said to Whitman, "but this is the kind of thing I think is PE's responsibility".

Supervisor Van Lyon had thoughts along the same line. "The average resident cannot afford the luxury of waiting for insurance", he pointed out.

Whitman said he didn't have the answer and that while Philadelphia Electric may be involved in a nuclear emergency it was not involved in other types of emergencies and could not be totally responsible for the volunteers. He also noted that PE didn't write the rules and had to abide by them just as the township did.

In response to a question from a resident, Whitman said that Philadelphia Electric workers who were not actually needed at the nuclear plant during an emergency, would be

(CONTINUED ON PAGE TEN)

Item

TEN CENTS

Big Question

(CONTINUED FROM PAGE ONE)

allowed to go to their own municipality to do volunteer work during an emergency.

The township will keep after the matter to try to get an answer.

Much of the board's meeting was routine monthly reports.

The township awarded a contract for the reconstruction of Godshall Road to the Floyd Hirsch contracting firm for a low bid of \$73,933. The township had expected the job to cost slightly over \$80,000.

The supervisors also approved a five lot subdivision on Bridge Street submitted by Barbara Koch.

Mary Wills was named as the new township secretary. She has long experience in township matters and recently resigned as the Skippack Township secretary.

She started work Monday. At the same time the supervisors announced that the township office would be open from 9 a. m. to 4 p. m. Monday through Friday.

The supervisor's work session scheduled for August 15 was postponed until August 22.

REPORTER

of the  SPRING—FORD AREA

2 Sections, 20 Pages

Wednesday, May 9, 1984

(USPS 256720)

25¢ Per Copy

S-F breaks into dance



Evacuation plans discussed at U.P. Board meeting

By ANNETTE KADASH
Correspondent

At the Upper Providence Board of Supervisors meeting Monday night, Jack Shutes Jr., emergency management coordinator for the township, gave a brief outline of the emergency evacuation plan to be used by residents.

Shutes explained that the township would "first receive notification of an emergency from the power plant. The county would then activate their 15 sirens." He was quick to point out that "residents are not automatically expected to evacuate upon hearing the sirens. They should turn to KYW 1060 to receive further information." Shutes said that the "police will fulfill their normal functions until there is an evacuation. Then their primary job

will be traffic control. The function of the firemen will be any route alerting where the sirens did not activate or were not heard, like in a park where people are picnicking. Firemen will restrict incoming traffic and assist in routing outgoing traffic." Area farmers will be an exception since they will be permitted back on to their property to feed their animals. "After the emergency is over," Shutes noted, "procedures for getting things back to normal could take two days."

Township Manager George Waterman pointed out many questions that must be cleared up before a workable evacuation plan can be approved. "One of the biggest questions is insurance," Waterman stated. "Generally speaking, there is a nuclear power exclusion clause which would make any claim null and void in

relation to a nuclear power accident." He added that the township is required to sign agreements with various outside concerns such as a towing company that would have to agree to clear the roads blocked by cars. He went on to say that getting these contracts will take considerable time and planning. "At this point," Waterman said, "we don't know how many outside commitments we can expect."

"Another problem is determining the size of the area where the police and fire people would have to alert residents in case sirens are inoperable. We also have to determine the number of emergency workers we can depend on. Unless we have volunteer firemen agreeing to offer their services in case of an emergency, we

(Continued on page 3)

Upper Frederick residents concerned about special home

Concerns over a proposed group home for mentally retarded men in Upper Frederick Township were raised by three residents at the township board of supervisors meeting Thursday night.

Kathleen Pramba, Route 29 and Waywood Road, who lives next door to the the proposed site of the home, said she was concerned about her and her neighbors' personal safety and wondered who would be responsible if the retarded residents caused property damage.

Township solicitor Ronald Reynier said the residents would be held liable for their actions — just as any resident would be. He added that the group that will operate the

home, Community Foundation for Human Development in Sellersville, is licensed by the State Department of Health and carries insurance that covers people in their program.

He noted that the group operates several group homes in the area and that they have not created any major problems in their communities.

Community Foundation will not need township approval to run the home, which will accommodate five mentally retarded men. The four bedroom home is still under construction and is part of the 12-home Oak Hill subdivision on Waywood Road, township secretary Donna Katrinak said.

"The home meets all building requirements," said Ms. Katrinak, who did not know when the home would open but speculated that construction of the complex should be completed within a year.

The five retarded residents, who would spend much of their days at offsite workshop facilities in the area, would be under the supervision of two, day-time workers and one person at night. The supervisors would alternate shifts and would not live at the home, she explained.

In other business, the board put out a request for 12 volunteers to act as coordinators of the developing emergency response plan for the Limerick Nuclear Power Plant.

Township officials are still working on the plan with Philadelphia Electric Co.'s consulting firm, Energy Consultants.

The supervisors also decided to cancel pre-agenda workshop meetings for the months of June, July and August. Canceling the meetings, which are held the first Thursday of every month, is a common practice every summer by the board, which will continue to hold its regular public meetings on the second Thursday of each month throughout the summer.

Upper Frederick supervisors award resurfacing contracts

Upper Frederick Township supervisors Thursday night awarded bids for the resurfacing of two township roads.

Oliver Reid Co., New Berlinville, was the successful bidder.

The roads slated for resurfacing are Swamp Creek and Colonial roads.

In other business, the supervisors announced that emergency sirens in the township will be tested Monday. The township also seeks 16 volunteers for implementing its evacuation plan.

The evacuation plan is required as part of the licensing process for the Limerick nuclear plant owned by

Philadelphia Electric Co.

A summer recreation program was also announced. As in past years, it will be held in conjunction with New Hanover Township.

An arts and crafts program will be offered beginning June 25 and continuing from 9 a.m. to noon Monday through Friday for five weeks. The program will be held at the New Hanover-Upper Frederick Elementary School.

There will also be swimming for children ages 5 to 12. Registration for swimming concludes today at the New Hanover Township building.

Band to play at Perkiomen park

The Norristown-Bryn Mawr Band will strike up the music when it performs 4 to 6 p.m. this coming Sunday at the Lower Perkiomen Valley Park in Oaks, Upper Providence Township.

The concert is sponsored by Montgomery County Commissioners Rita C. Banning, Paul B. Bartle and Allan C. Myers and the Norristown

Musicians Association, Local 341 of the American Federation of Musicians.

The Valley Forge Pops orchestra will play at Lower Perkiomen Park on Sunday, July 1, while on that same day the Verdi Band of Norristown will play its annual concert at the Upper Perkiomen Valley Park in Green Lane.

Vertical expansion request for landfill approved by West Pottsgrove Township

By RICHARD BRAUNSBURG
Mercury Staff Writer

A request for continued vertical (height) expansion of the Pottstown Disposal Service landfill in West Pottsgrove was unanimously approved Wednesday night by the West Pottsgrove Township Board of Commissioners.

The proposed vertical expansion should begin on Monday, according to the commissioners, since the plan is expected to be approved by the state Department of Environmental Resources (DER).

Township solicitor Lee Mescolotto said the resolution approving the expansion request was actually not necessary, but Richard Bacchi, chairman of the commissioners, wanted the vote to be on record

in the minutes of the meeting.

Although they voted in favor of the request anyway, the township commissioners said the expansion could have taken place with or without township approval, as long as DER approves the proposal. The township could have provided a stumbling block in the plans, but the ultimate decision on the expansion was with DER.

The request was made by SCA Services, operator of the landfill, approximately 60 days ago to expand the landfill upward approximately another 20 feet because it was approaching the height restrictions and there was no room to expand the landfill outward.

In other business, Richard Bacchi, chairman of

(Continued on page 5)

Vertical expansion request for landfill

(Continued from page one)

the commissioners, listed the reasons West Pottsgrove did not participate in the recent emergency evacuation drill at the Limerick nuclear power plant site.

One of the main reasons was a lack of volunteers in the township that made it impossible to adequately test the evacuation plan, Bacchi said. Another reason was the resignation of Earl Keck, the township emergency management coordinator on July 5 due to a difference of opinion and lack of communication with the commissioners. The new coordinator, Charles Christy, Roberts Drive, Stowe, had less than three weeks to prepare for the drill.

Fire personnel in the township also complained that they did not have the proper equipment to deal with the evacuation that the Philadelphia Electric Co. said would be provided.

Other reasons included an unacceptable evacuation plan for the handicapped residents of the township and a general lack of preparation.

"The bottom line is that West Pottsgrove is saying that we are going to move ahead with the evacuation plans, but we are not going to do it until it is done right," Bacchi said.

A bid of \$22,788 was accepted from the Pottstown Trap-Rock Quarries, Inc., for overlay work to be done on Berks Street between Monroe and Glasgow streets and on Lemon Street between Monroe and Center streets.

Commissioner John Ferranti said he noticed a problem developing in the township with people setting trash bags outside their homes for garbage collection instead of putting the bags in trash cans. Some people are letting the bags set outside for days and are getting ripped apart by small animals, such as skunks and rats. If the situation continues, he said, the board should consider an ordinance to address the problem.

Ferranti also said the township should check into trash haulers who make stops in the township in the early morning hours.

Commissioner Domenick Solazzo said the West Pottsgrove Town Watch organization recently elected officers and are now using two-way radios to be in direct contact with the police department to immediately report crimes.

Plans are halted until utility offers proper equipment

The West Pottsgrove Township Commissioners voted Wednesday night to stop work on their emergency evacuation plans unless the Philadelphia Electric Co. (PE) provides the township with the additional equipment needed to implement them.

Richard Bacchi, chairman of the commissioners, said that if that emergency equipment is not forthcoming, the commissioners are not going to submit any additional plans.

Bacchi said that was the opinion of the commissioners, the township fire marshal and the township emergency management coordinator.

In other business, the commissioners gave notice to the contractor to begin roadwork on South Grosstown Road. The board members said they anticipate opening the road soon.

They also reported that 75 tons of material were collected recently during West Pottsgrove's cleanup week.

The Reporter

Wednesday

March 14, 1984

25¢ a copy

PE trying to work with municipalities on evacuation plans

Editor's note: This last of a three-part series on preparations for what no one wants to see — a nuclear accident at the Limerick power plant — zeroes in on the people who plan how to combat the unthinkable.

By LESA J. AYERS
Reporter Staff Writer

Roberta Kankus and Robert Bradshaw don't think planning for disasters is all that unusual. They're trained in preparing for the worst.

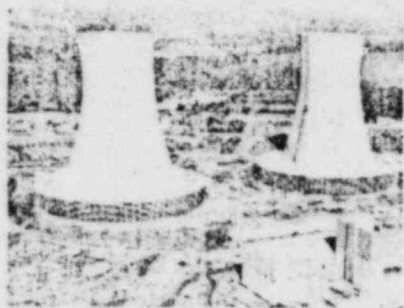
When Kankus, Philadelphia Electric's emergency planning chief, hears on radio about a disaster unfolding, she's quick to turn on the television set. It's not because she thrives on bad news; she's just interested in learning

how others handle their emergencies.

Bradshaw, a staff member of Energy Consultants Inc., the Harrisburg-based consulting firm hired by PE to expedite the region's radiological response plan, was living in Middletown in March 1979 when the Three Mile Island nuclear power station made international news.

The Harrisburg area had no offsite plans in place, Bradshaw recalls, but most of the panic was generated by outsiders watching Walter Cronkite on the evening news, he says.

Planning for any type of emergency is not easy, they acknowledge. But in the wake of TMI, state and federal regulations require such tasks of all local municipalities — whether or not



they have a nuclear power plant.

Airports practice for plane crashes all the time; hospitals and fire companies stage their own disaster drills periodically, they pointed out. The value of such practices is to minimize potential dangers.

They agree that before PE can get its operating license for the Limerick nuclear power plant, the utility needs to prove radiological response procedures are in place.

Kankus said PE's problem has been that local municipalities haven't been planning as required. That's why PE hired consultants — to assist local planners to comply with state and federal planning standards. They say PE is spending millions of dollars in the effort.

"People overlook the other uses of these (nuclear disaster) plans," Kankus said. They could be used for any large emergency, be it natural or manmade, such as a chemical spill.

"People don't ordinarily think about

these things," she said. "People don't even know how to get out of their house in case of a fire."

Municipalities, she said, have "a moral obligation to protect their residents' lives and safety." The radiological planning project, she believes, "just brings it up again before the public."

In response to one worried official's reported comment that the planning was a case of "putting the fox in charge in the henhouse," Kankus points out that the counties are responsible for writing the plans. "PECO has no 'yea' or 'nay' about them," she said.

PE spokesman Neil McDermott said the review of the July 25 drill of the county radiological procedures is a

"critical step" in the drawn-out licensing procedure. "There is no ultimate test until there would be a need to use it."

The test, Kankus said, should show whether "the script," the procedures laid out, will work. "It's not just paper," she said. The ability to follow procedures, she said, demonstrates preparedness. A lot of the problems with people, she said, is that "they don't understand the planning process."

"The public doesn't have anybody it can trust," Kankus said. "A lot of people don't take the time out to listen. Most of them make up their minds before they hear a single fact."

Drill to test Skippack's response to Limerick meltdown

Editor's note: This is the second in a three-part series on emergency evacuation plans in the event of nuclear accident at the Limerick power station examines the status of those plans as they affect Skippack Township, which would have some special problems.

By LESA J. AYERS
Reporter Staff Writer

If workers at the Limerick nuclear power station are unable to contain radioactive danger stemming from an actual or imminent "core degradation or melting," emergency planners for Philadelphia Electric say proper preparation should minimize any risks to the 5,784 residents of Skippack Township.

All of the township sits within the 10-mile-radius "exposure plume zone" from which residents and passers-by

might have to be evacuated to avoid external exposure to gamma radiation or inhalation of radioactive materials spewed from the plant.

Although incomplete, Skippack's response plans are in their fourth version. They already begin to outline the necessary tasks and responsibilities for county, state and local emergency staff workers and volunteer crews.

The readiness of those involved will be tested in a drill scheduled for July 25, by which time it is expected those people will be trained to respond in an area affected by radiation. Their efforts would be coordinated by county workers.

Assuming a general evacuation, among the early "offsite" steps affecting Skippack would be the placement of emergency workers on standby and the notification of the general public about the governor's evacuation order.

The amount of safe response time cannot be preplanned, authorities say, because of the variables involved — the nature of the nuclear accident, weather conditions, wind direction, etc.

Before general public notification, the plan assumes that as the danger develops to the critical point there

would be time to notify key figures and test the communications network and institutional readiness.

Skippack residents would first hear of trouble through the county's activation of the \$3 million network of sirens. FE is currently installing on poles throughout the plume zone. The sirens would signal people to tune to the local Emergency Broadcasting System station, KYW Radio, which would be giving public reassurances, updates on the plant's status, and specific emergency instructions.

Emergency workers would be placed on standby through regular dispatching channels. Trained civilian licensed radio amateurs — such as the Radio Amateur Civil Emergency Service or REACT — would serve as the dispatchers' backup.

The county would first notify Skip-

pack's emergency management coordinator, George Huguenin, or his deputy (not yet named) who would set up Skippack's emergency operations in the township building, 1246 Bridge Rd. From there the evacuation would be coordinated. Helping Huguenin would be the designated fire rescue services officer (not yet named), a transportation officer (Mary Will, a township secretary), and a public works officer (township supervisor Sarah E. Unruh and highway department foreman Lloyd Heacock).

These officials also would maintain records of the evacuation's expenses, dispense state-supplied dosimeters (for measuring radiation exposure) and radio-protective drugs (such as potassium iodide), arrange transportation out of and maintain security within the township.

Telephones would be their primary means of communication, although the county will designate a RACES or REACT operator to back up Skippack's communications.

To ensure that all Skippack residents are aware of the emergency, seven teams of at least two people (unnamed fire company personnel) would drive a specific route with loudspeakers broadcasting the message. There is an emergency at the Limerick generating station. Please tune to your Emergency Broadcast System Station, KYW 1060 AM.

In addition, the teams would be in direct contact with Skippack's 21 currently known hearing-impaired residents — who would be urged to contact a friend, relative or neighbor for information — and the homes of

Please see LIMERICK, A5

Drill to test township's response to emergency

LIMERICK, from A1

transients.

In the meantime, state emergency officials will be shoring up Skippack's two ambulances and 30 members, and its four tow trucks, with support manpower and resources from non-plume zone areas including Bucks County, which would be reporting to Skippack to lend their services.

Skippack residents must rely upon their own private vehicles to get out of the plume zone, primarily via Rt. 29 to Rt. 113 to Rt. 73. Traffic control points to direct motorists — not only for Skippack evacuees but those from areas closer to the plant — will be set up at points along Rts. 113 (at Rt. 73, Landis and Mill Rds.) and Rt. 73 (at Church, Collegeville, Evanburg, Cross, Luron and Cresman Rds.). The plan states that township police will be

controlling intersections and patrolling throughout the township.

Skippack, however, does not have its own police force.

Gasoline and diesel fuel stations along Rts. 73 and 113 would remain open, and additional fuel would be made available through the Norristown-based Pennsylvania National Guard unit, which would have access to fuel trucks. Guardsmen would also man tow trucks to remove any disabled vehicles.

Township road crews would be responsible for removing snow or other debris from the main roads.

The names of those who are homebound or handicapped or of other persons with special transportation needs should be on file at the township office. Such persons should call the municipal building for a pickup. The plan does not specify, however, who

will come around, nor does it give a destination for medical patient evacuees.

Skippack does not have any medical facilities of its own, although a nursing home is in the planning, one supervisor said.

Planners have said personnel from the state Bureau of Correction will be responsible for evacuating the 2,800-plus inmates of the State Correctional Institution at Graterford.

In the meantime, a "reception center" to take in Skippack residents will be readied at Montgomery Mall. Skippack's plan does not state who will direct them, but Skippack residents with nowhere else to go will be directed at the mall to report to several "mass care centers," at Central Bucks East and West senior and Lenape Junior high schools.

Volunteers from the American Red Cross are expected to attend to

evacuees at the schools.

In case of a fire or other emergency, members of the Skippack Fire Company and Skippack Ambulance corps would be standing by at the Methacton Junior and senior high schools in Worcester, and would be dispatched by the county. Such workers might have to augment their regular gear with special respiratory equipment.

Each Skippack emergency worker would wear a dosimeter in an outer pocket until dismissed. Each must record its reading every half hour, and once the exposure limit reads 25 rem he or she must go off duty.

Emergency workers will take the potassium iodide only on the direction of the state Department of Health.

Should a life-saving mission arise, a volunteer reaching a 25-rem limit must get special permission from a Skippack official to continue. A paid emergency worker has first obligation over a

Tuesday, March 13, 1984

The Reporter

Page A5



Warning siren is installed

volunteer, however.

Under no circumstance can a worker serve longer if the reading exceeds 75 rem.

Each Skippack emergency worker must be decontaminated at the township decontamination station.

Farmers would be allowed to return to their farms to tend to livestock.

Separate school plans should be established to provide for the safety of schoolchildren if the emergency arises while school is in session.

Skippack students would be taken by bus to host schools sitting on the main evacuation routes and outside the plume zone. Once there, school authorities would stay with them until they had been picked up by parents or guardians.

Tomorrow: PE consultants explain the difficulties of planning in a public fishbowl.

COG reacts to plans on Limerick evacuation

By FRANK WARNER
Mercury Staff Writer

A North Coventry Township supervisor said Tuesday that in the case of an emergency at the Limerick nuclear plant, his township would blockade Route 100 to allow only North Coventry residents to escape south on the highway.

And a Pottstown councilman suggested that if there is an accident after the Limerick plant opens in 1985, that trains two or three miles north should be ready to evacuate the borough of Pottstown.

The officials addressed their comments to Ronald Deck, a consultant for Philadelphia Electric Co., at the Tuesday night meeting of the Pottstown Area Council of Governments (COG).

Deck is a consultant with the Harrisburg-based Energy Consultants Inc. He told COG members that PE has hired his group to help 42 municipalities around Limerick map out the emergency plans now required by the state.

Deck met with plenty of skepticism at the COG meeting.

Carl Seiscio, the Lower Pottsgrove Township representative to COG, told Deck it is "pie in the sky" and "off the wall" to believe 180,000 residents within a 10-mile radius of Limerick can be evacuated in an emergency.

William Deegan, the North Coventry representative, said that if planners think people north of the Schuylkill River will be able to go south on Route 100 during an evacuation, they better think again.

"We'll block Route 100 to get our
(Continued on Page 5)

COG reacts to plans on nuclear evacuation

(Continued from Page One)

children out," he said.

Deck said his consulting already has decided Route 100 will be used as a southerly escape by Chester County residents only. Montgomery and Berks county residents will be able to take Route 100 north.

Edmund Skarbek, the Pottstown representative to COG, brought up the possibility of using a long train to evacuate Pottstown by railroad. And then Skarbek wondered aloud whether the council of governments might be discussing the wrong subject.

"Maybe we, as government officials, are concentrating on the wrong thing," he said. "Maybe we

should concentrate on preventing this thing from ever being licensed."

Deck said that he, as an emergency planning consultant, must assume the twin-reactor Limerick plant will be licensed and operating later in this decade.

Richard Bacchi, the West Pottsgrove Township representative to COG, said the planning must be done, whether or not COG members are happy with the Limerick plant.

"As I see Limerick," said Bacchi, "it's nothing more than a cancer. There's no stopping it." He said he is concerned about how much the emergency planning is going to cost his township taxpayers.

The COG members finally voted to schedule an April 5 emergency planning meeting for all officials of governments surrounding the Limerick plant. The location of the meeting is to be announced at a later date.

Deck said there are 42 municipalities within a 10-mile radius of the Limerick nuclear plant. They include the nine boroughs of Pottstown, Royersford, Spring City, Phoenixville, Boyertown, Green Lane, Trappe, Collegeville and Schwenksville.

Deck's planning map calls the area within the 10-mile radius the "Plume Exposure Pathway." He

noted that in planning, the state requires that all residents in that area be moved to at least 20 miles from the nuclear plant.

Deck said he does not yet know how much time the residents around Limerick will have to evacuate in the case of a worst-case nuclear plant accident. Experts and government officials are attempting to calculate that figure, he said.

He said his firm expects that most people would evacuate in their private cars, and about half would go to the homes of friends and relatives. Planners will have to find schools, churches and other buildings for the other evacuees.



PHOENIXVILLE AREA SCHOOL DISTRICT

DR. ROBERT B. MURRAY, SUPERINTENDENT

August 6, 1984

Mr. Henry C. Tamanini
Emergency Planning Specialist
Energy Consultants, Inc.
Riverside Office Center 3
2101 N. Front Street
Harrisburg, PA 17110

Dear Mr. Tamanini:

The Phoenixville Area School District has great concern regarding the lack of progress with the Radiological Emergency Response Plan which we have been attempting to develop for approximately the past two years. I wish to particularly call attention to what we consider to be the facts in this situation:

- (1) Our group has not had a meeting since November 3, 1983. Until a call to Mr. Leahy, made on July 31, 1984, we have not had any communication with your organization since April, 1984.
- (2) Concerning the April communication, I telephoned your office on April 17th attempting to discover when we would receive copies of Draft 5. (Draft 4 was received the first week of November, 1983.) At that time, you informed me that Draft 5 would be sent to us "in the next couple of weeks." While this might be a misunderstanding, we still have not received copies of Draft 5.
- (3) Since the first meeting, representatives of the School District have questioned the workability of our Plan; for example, we are seventeen buses short, do not have a list of supervisors for students, have no set evacuation route, and do not have emergency equipment as mentioned in the Plan.
- (4) We have also questioned, from the beginning, the financial responsibility for buses, equipment, supervision, etc.; for example, the School District does not own any buses and contracts at a cost of \$80.00 per bus per day. Who is responsible for the cost of buses required for the evacuation?

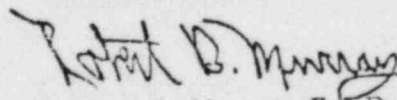
August 6, 1984

- (5) The Plan mentions the need for an emergency telephone/communications system. When will this be provided and again, who has the financial responsibility?
- (6) Who is legally responsible for injuries to pupils and damage or destruction of equipment during either a drill or an actual emergency situation?
- (7) One drill has been held to date and the newspaper speaks of another drill. We would feel much more comfortable if we were prepared for future drills.
- (8) We also read that Philadelphia Electric Company is moving nuclear fuel to the plant loading site. With loading of fuel scheduled for on or about September 15, a lack of preparedness is of great concern.
- (9) Mr. Leahy informs me that as of this morning we have a meeting scheduled for August 28, 1984. It was felt that you should be fully aware of our concerns prior to that meeting.

We are of the opinion that Philadelphia Electric Company anticipates receiving approval to become fully operational regardless of the fact that the Phoenixville Area School District and many other school districts and municipalities have totally inadequate and incomplete Radiological Emergency Response Plans. Our Board of Education questions whether or not the development of our Plan, to date, coincides with the schedule of Philadelphia Electric Company. There is no doubt that this subject will be discussed fully in the very near future by our Board.

We are looking forward to seeing you on August 28. In addition to the administrative members, we will be joined by Mrs. Diana Roberts and Charles Gutkowski, members of the Phoenixville Area Board of Education.

Sincerely yours,



Robert B. Murray, Ed. D.
Superintendent

RBM/csv

CC: Robert Cane, Phila Elec. Co.
Timothy Campbell, Ches. Co. Dept. of
Emergency Services
Don Sees, Phoenixville Emergency
Operation Center



The Mercury

A Pulitzer Prize-winning newspaper

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Vol. 53 No. 278

Pottstown, Pa. (19464) Friday Morning, August 17, 1984

30¢ A COPY
32 Pages — 4 Sections
\$1.80 A WEEK
HOME DELIVERY

Phoenixville not happy with effort so far School board wants PE to pay for independent evacuation consultant

By RICH KIRKNER
Mercury Staff Writer

The Phoenixville Area School District, frustrated that a realistic emergency evacuation plan has not yet been drafted for the district, wants to hire an independent emergency management consultant and pay that person with Philadelphia Electric Company's money.

At its monthly meeting Thursday night, the Phoenixville Area School Board voted 6-to-3 to approach PE with the proposal.

As part of its licensing procedure for the Limerick nuclear power plant, PE must assist surrounding school districts and municipalities in developing individual evacuation plans. Energy Consultants Inc., Harrisburg, has been contracted by the utility to aide those communities.

But school member Barbara Taggart Caffrey said Thursday that the district's emergency evacuation committee has not been able to develop a realistic plan with that consulting firm.

"The important thing is to get something started here so PE knows we're not happy with what they've given us so far," she said.

Already the committee is into the fourth draft of the plan for schools in Phoenixville, East Pikeland and Schuylkill. "I imagine we'll end up with six or seven drafts," said Dr. Robert Murray, district superintendent. "Personally, I don't see how the plan is going to work as it is now."

Though six school board members voted in favor of the particular motion that was passed Thursday night, two others expressed their desire to hire an independent consultant.

It was a matter of semantics. Mrs. Caffrey originally asked the board to adopt a resolution so the board could hire the consultant and ask PE to pay for the person or firm hired.

The resolution that was adopted, however, proposed having a school district administrator — Dr. Robert Morgan, assistant principal at the high school — help select a possible consultant and obtain cost estimates, then

(Continued on page 3)

approach PE about footing the bill. Originally Mr. Caffrey voted against Morgan's involvement, but she changed her vote.

Morgan, who started his job in the high school last month, worked with radiological and biological evacu-

ation plans while he was in the army. He is currently with the National Guard.

Though some school board members were anxious to make use of his expertise in the field of emergency evacuation, others were hesitant.

"I just hope we don't use all of Dr. Morgan's time on this and not doing what we hired him to do," said E. James Reichert, one of the three who voted against the language presented Thursday night.

Reichert also argued that any time Morgan devotes to the emergency evacuation plan would present an expense to the district.

But Anthony Trezza stressed the importance in presenting "a package" to PE before the board approaches the utility with a request to fund an independent consultant.

Reichert also asked board members, "What happens if PE refuses to fund it?"

"We'll cross that bridge when we come to it," Mrs. Caffrey replied.

Richard Downs, another who voted in favor of the resolution Thursday, said, "I don't think it would do any harm. We go to them and they say no, what's the worst

that can happen?"

Downs added that such a move would also "open up discussion" with PE.

Molly Szegedy, who seconded the original motion to approach PE without Morgan's involvement, and Mrs. Roberts both voted against the resolution that was passed.

"I understand it now," Mrs. Roberts said as the resolution was called to a vote, "but I don't like it."

Under either resolution, the district would ask PE to pay a consultant of the school board's choice.


"I don't think we're talking about a great deal of money," said Mrs. Caffrey. "It could be \$1,000, it could be \$30,000, it could be nothing."

In other business Thursday, the board:

- Heard from Business Mager Albert Funk that the cafeteria service in district schools have turned a profit of \$11,000 through the past school year, the first time in several years the cafeterias have made money. The profit will be used to update equipment in the kitchens.

- Agreed to have the administration develop a written policy for retirement dinners for teachers after Schuylkill resident Kenneth Calhoun inquired about a recent retirement dinner.

- Heard from board member Charles Gutkowski that the Chester County Intermediate Unit has purchased a van to teach remedial math to students at St. Mary's, St. Ann's and St. Basil's parochial schools in the Phoenixville district.



Evening phoenix

Friday, August 17, 1984

Phoenixville, Pa.

30°

Consultant sought

School directors say emergency plan inadequate

By MARIANNA HASSRICK
Staff Writer

PHOENIXVILLE — After working with county and Philadelphia Electric Co. (PE) representatives on a radiological emergency response plan for more than a year, Phoenixville Area School District administrators have determined that the present proposal is inadequate and unworkable.

In order to provide the district with additional help in developing a plan, the school board discussed employing an independent consultant funded by PE, who would be selected and approved by the board, at its meeting last night.

The board voted 6-3 on a motion, presented by Barbara T. Caffrey, asking that PE provide such funding for a study.

The motion stated that the board be permitted to engage a consultant to study the "feasibility of the radiological response plan to an alert, site emergency or general emergency, as defined by PE, and if such a concept is deemed feasible, to consider all possible options to prepare a coordinated radiological emergency response plan, which, will meet the intent of state and federal regulations, and must meet the approval of the school board, whose primary responsibility it is to provide for the care, custody and control of the students in the district."

In discussion before the vote, board member Anthony Trezza said, "We need to go (to PE) with a plan." He said it would be better to approach PE with the name of a consultant and a cost estimate.

Dr. Robert B. Murray, superintendent of schools, said he had written to other school boards within the 10-mile radius of the proposed Limerick nuclear power plant to tell them how the Phoenixville committee felt about the plan.

RESIDENT EXPERT

The school directors also noted that Dr. Robert B. Morgan, recently hired senior high school principal, had studied nuclear radiological and biological warfare while serving in the U.S. Army.

Trezza offered an amendment to the motion urging that Dr. Morgan assist the board in selecting a consultant and arriving at a feasible plan and a cost factor to present to PE.

Dr. Morgan told the board that his "expertise was limited. But, I will be happy to make the contacts," adding that the last plan he had read was one he could not agree with.

"The important thing is to let PE know we're not happy with what they've given us so far," Caffrey said.

Also commenting on the motion

(See BOARD, P2)

• Board

(Continued from Page 1)

was Richard Downs, who said that such a proposal could do no harm. "We go to them with a proposal. Such a move could open up a discussion with PE."

Board member E. James Reichert expressed concern that Dr. Morgan would have to take time away from the job that he was hired to do.

The vote on the amended motion was 5-4, with Caffrey voting against the measure. She changed her original vote and the final tally was 6-3 in favor of the amendment. Voting against the measure were Reichert, Molly Szegedy and Diana Roberts.

Following the vote, Caffrey said she did not believe that there would be a great deal of money involved in the hiring of a consultant. "It could be \$1,000; it could be \$30,000, or it could be nothing," she said.

OTHER BUSINESS

Business Manager Albert Funk reported that the cafeteria showed a profit of nearly \$11,000 for the first time in 10 years. He said the money will be used to repair and replace some kitchen equipment.

The board approved bids for band front uniforms for the junior high school and for replacing the junior high school roof. KLN Marketing will supply the uniforms at a cost of \$2,722.50. Gudnecht Roofing Co. was the low bidder for roof repairs at \$95,600.

In his report as representative to the Chester County Intermediate Unit, Charles Gutkowski said the IU board approved the hiring of substitute teachers at \$45 per day and \$55 for 11 to 59-day assignments. He said the IU plans to schedule both sports and academic competitions during the school year.

The IU has purchased two vans, one to be used to teach remedial math at St. Basil the Great School, Kimberton, and two trailers, one to be used as a classroom at St. Ann's School, Phoenixville.



April 17, 1984

Phoenixville, Pa. 30'

District evacuation plan not yet finished

ROYERSFORD — Spring-Ford School Board members said last night that they have no emergency evacuation plan in place yet in anticipation of the start-up of the Limerick nuclear power plant, but that they expect to have one ready sometime during the summer.

Meanwhile, a preliminary plan that has been circulating as a district-written emergency response plan, was not actually written by the school board, members said.

Karen Kreider, Mason Street, Royersford, brought the subject before the school board just before the close of its regular session last night. She asked the board members how long they had to come up with a complete plan, and whether there would be parental involvement in designing it.

Board President Richard G. Nelson said that the board "has various sections of the plan in order," but that a complete overview

does not yet exist.

"We would certainly want input from parents before it's finished," he said. "I think we have to do something about the whole plan soon."

Kreider had brought a copy of Spring-Ford's alleged evacuation plan, known as "draft 3," but school board members said that they had had no part in formulating the document, a thick paperbound booklet entitled "The Spring-Ford Area Montgomery County Radiological Emergency Response Plan," which noted that it had been "prepared by the Spring-Ford School District." It contains sketchy numerical information and data, and blank space for information to be filled in when it is available.

"That is not the school board's document," Superintendent Dr. William Welliver said. "We have not written a word at this point."

(See EMERGENCY, P2)

• Emergency

(Continued from Page 1)

The booklet had actually been prepared by Energy Consultants Inc., a firm connected with Philadelphia Electric Co. that operates out of the Harrisburg area.

Robert Bradshaw, a project manager with Energy Consultants, confirmed that his company has contracted with PE for the preparation of the plans in various areas. Bradshaw has not met with the Spring-Ford School Board but has had meetings with Welliver in which ideas for the plan were discussed, he said.

The only definite action taken by Spring-Ford, Nelson said, has been the signing of an agreement with the Colonial School District of Lafayette Hill, to house Spring-Ford students in the event of an emergency evacuation.

Kreider said she was concerned

with how the parents will be informed or involved in case of such an event.

Nelson said that parent concerns should be put in writing and submitted to the district to make sure that they are officially recognized during formulation of the plan. Board member Elizabeth Marberger said that she believes copies of the plan should be available in each school library in the district, once the plan is finalized.

In other action last night, the school board:

- approved June 12 as the final day of classes and the date of commencement,

- announced that a fingerprinting program will begin in the elementary schools in May, and

- approved a change in the tuition rate for summer school. Tuition for summer classes will be \$60 for residents and \$100 for non-residents, a \$10 increase in the rate.

THE
CAMPBELL
SPECIAL
SCHOOLS,
INC.

BEAVER RUN, R.D. 1, GLENMOORE, PA. 19343

August 1, 1984

Mr. Robert L. Patterson, Lead Trainer
Energy Consultants
Riverside Office Center 3
2101 N. Front St.
Harrisburg, PA 17110

Dear Mr. Patterson,

I am in receipt of your letter of July 12, 1984. It is most interesting, as none of the information therein concerning your training programs was conveyed to me over the telephone. Over the phone I was given the impression that the training offered was for emergency workers to care for livestock, as the request of the agricultural community, Camphill Village - Kimberton Hills, was referred to as the motive for calling me.

I want to confirm that it is premature to consider training at our facility for several reasons:

- no written radiological emergency response plan has been developed for our facility on which to base such training;
- no determination of staff participating in a radiological emergency and the roles they will play has been made;
- no equipment needs including telecommunications and transportation vehicles have been ascertained;
- no evaluation of our buildings' sheltering potential has been made;
- our school is on summer recess;
- our Board of Directors will only meet again in early September.

Sincerely,

Bernard Wolf
Director of Programs

jad

CC: LEA ✓

— THE
CAMPBELL
SPECIAL
SCHOOLS,
INC.

BEAVER RUN, R.D. 1, GLENMOORE, PA. 19343

August 14, 1984

Mr. Henry C. Tamanini
Energy Consultants
Riverside Office Center 3
2101 N. Front St.
Harrisburg, PA 17110

Dear Mr. Tamanini:

I am in receipt of your letter of August 8, 1984. I was surprised to learn that you are inviting us again to a planning session. On the telephone we only spoke about possible training sessions. In the past you have referred me to our township emergency coordinator and the Chester County DES for planning. Well, this whole thing is full of surprise!

Before we can consider scheduling a planning session, there is still a matter which needs to be addressed. I have mentioned this in previous letters but still have not received a response. Since the Limerick generating station is not in operation at this time (nor is it confirmed if and when it will open), no danger exists for which planning is necessary. Therefore, our school sees no reason to invest its time and manpower in a vigorous planning process at this time. It is our understanding that the drawing up of plans at this time is of interest to PECO. That's why your firm is being paid by PECO. What will PECO pay our staff to engage in a planning process for radiological emergencies in case Limerick opens?

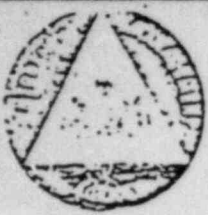
This question has not been answered yet. If you cannot answer it yourself, please forward this question to the appropriate PECO official for response.

Sincerely yours,

Bernard Wolf
Director of Programs.

jad

CC: LEA ✓



PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY

P.O. BOX 3321

HARRISBURG, PENNSYLVANIA 17105

October 14, 1983



Mr. Samuel L. Ely, III
Coordinator
Montgomery County Office of
Emergency Preparedness
100 Wilson Boulevard
Eagleville, Pennsylvania 19403

Dear Mr. Ely:

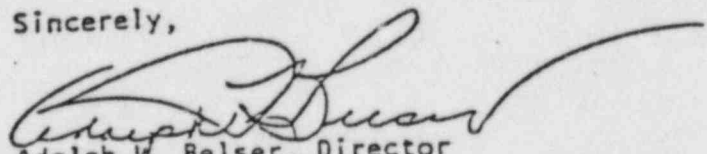
A review of the Montgomery County school district plans for incidents at the Limerick Generating Station has been completed. Since the plans follow a standard format our comments apply in general to all of the plans, but they are keyed specifically to the Methacton School District Plan.

The individual school plans for non-profit private schools, including parochial schools, will not be reviewed because non-profit private schools are the responsibility of the school district in whose territory they are located. All school plans, including public and non-profit private schools, are the responsibility of the appropriate school district superintendents. A key point in Appendix 11 of Annex E of the state plan is that the school district superintendent must be responsible for all the schools in his district's territory, both public and non-profit private schools. That includes planning, preparedness, exercises and implementation of the plans when necessary. Only if a private school or schools refuse to cooperate with the school district superintendent will an exception be acceptable, and, in that event, that fact should be duly noted in the school district plan.

I believe the enclosed comments are self-explanatory. A representative of ECI, the consultant firm hired by PECO, will be in contact with you to coordinate arrangements for them to assist superintendents in making the necessary changes or additions for resubmission to PEMA by November 1, 1983.

If PEMA can be of any further assistance in this matter, please contact me.

Sincerely,


Adolph V. Belser, Director
Office of Plans and Preparedness

ALB/TJC:jmb (Tel: 717-783-8150)

Enclosure

cc: Robert J. Casto, Eastern Area Director
Roberta Kankus, Philadelphia Electric Company
James Fisher, Energy Consultants, Inc.

March 19, 1984

TO: Non-Public Schools near Limerick Power Plant

FROM: St. Mary's Home and School Association Board
Delphi, R.D. Schwenksville, Pa. 19473

RE: Evacuation Plans for non-public schools for use in the
event of a nuclear accident at the Limerick Power Plant

We are currently reviewing the evacuation plans for our small elementary school located near Limerick Power Plant. We were under the impression that we had our own evacuation plan and busses and supplies would come directly from the County Emergency Management Agency. We recently received a copy of a letter from Pennsylvania Emergency Management Agency to Montgomery County Emergency Management Agency dated 10/14/83 indicating that our school's evacuation would be covered under the evacuation plan of Perkiomen Valley School District, the public school district where we are located. We received this letter copy from Limerick Ecology Action and at no time were we informed of this from PEMA, Montgomery County, Philadelphia Electric, Perkiomen Valley School Board, or Energy Consultants, Inc. (the company hired by Philadelphia Electric to prepare the plans.) A copy of the letter is attached for your information.

Unfortunately, Perkiomen Valley School District adopted their evacuation plan in November 1983 without sufficient attention to the needs of our school which has no busses or auxiliary food

supplies, etc. In fact we do not know if Perk Valley School District was aware at the time of their plan adoption that their plan was to include us. We are going to present them with a list of our concerns and questions regarding the plan.

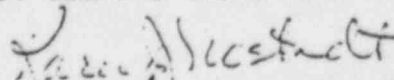
Montgomery Co. Emergency Management Director, Mr. Bigelow, has confirmed that the Perk Valley School District plan covers us. But he did not know if their busses would take all our children or if the different school districts from which our students come would each bus their own children.

As you can see, we have many concerns regarding the evacuation plans. We do not want our children to be endangered because of the tendency for non-public schools to be overlooked and because of inadequate planning.

We wondered if schools similar to ours had been as neglected in communications regarding the evacuation plans. We decided to send you this notice along with a copy of the State's letter. You may wish to question the State and County Agencies and your public school district to ascertain: 1) if your specific needs have been met in the plans; 2) if your questions will be answered; 3) if you and the parents of your children will be advised of and made a part of the process of adopting the plans; and 4) if you will be made a part of any evacuation drills, training sessions, teacher polls to see if they will stay, and radiation monitoring equipment distribution.

We are contacting the agencies listed above as well as the NRC. We are having a parent committee meet to review the plans in detail. We would be happy to give you our list of questions when the committee has met.

ST. MARY'S HOME AND SCHOOL ASSOCIATION

By: 
President Karen Nostadt (287-9053)

ST. MARY'S HOME AND SCHOOL ASSOCIATION
NEWSLETTER FEB. 1984

Here it is, February already. Home and School continues to be active in assisting our school and this is to update you on our latest activities.

As you've noticed on the papers your children have brought home, our new Ricoh copier is operating well and being well used by the teachers. In January we purchased a 19" color TV to be used with the Commodore computer donated by one of our families.

In our February Board meeting we approved several expenditures, including: Holy Spirit pins for each member of the Confirmation class; bus expenses for grades K, 1,2,3 to attend a play in Allentown; four religion filmstrips; and extended warranty insurance on the copier.

We were asked by the Parish Council to assist in the sale of the tickets for our parish social on Friday February 17, 8:00 p.m. This promises to be an outstanding event and great fun. If you're new to our parish, you'll be able to meet all those people you see in church and would like to get to know. If you're old timers, you'll get to socialize with old friends. The evening will include a roast beef buffet, snacks, beverages, setups, (BYOB), AND a disc jockey. All of this is only \$7.50 per person! So bring your friends and have a wonderful evening. You can purchase tickets through us by filling out the sheet below and returning it to school by Tuesday, February 14, with a check payable to "St.Mary's". We'll send the tickets to you via the children. This is not a money making activity and the charge will just cover the expenses, so you know you'll get your money's worth. Come out and meet the parish!

Sister would like to have a CPR program for our 7th and 8th graders. Does anybody have suggestions on who we can contact? Send them in on the return slip below.

The President and Vice President of Home and School went on a tour of the Limerick nuclear power plant in mid-January at the invitation of the Philadelphia Electric Political Action Committee. (The invitation was extended as a result of the letter to the Editor in December). (Over)

COMPLETE AND RETURN BY TUESDAY FEBRUARY 14, 1984

Family Name _____ Grade of
Oldest Child _____

We want _____ tickets to the Parish Social on Fri. Feb. 17. Enclosed is a check payable to "St. Mary's" for _____, (at \$7.50 per ticket.)

We were supposed to meet with the man in charge of preparing the evacuation plans but he did not make it as it was a snowy day. We spoke with a public relations man for about 2 hours on general topics relating to the plant, and then went on a tour of the facility. We continue to have numerous questions regarding the evacuation including where are the buses coming from, who will provide food in the event of use of the "sheltering" option, who will provide supervision if our teachers elect not to stay.

We have not received any further communication from Energy Consultants, the company preparing the plans, but we received a copy of a letter from the State Emergency Agency to the County Agency (dated in October) that the public school district's plan will rule for all non-public schools in their area! (The copy of this letter was received from Limerick Ecology Action.) We were not aware of this, and did not receive any such notification from Energy Consultants, the State Agency, the County Agency, or Perk Valley School District. We don't even know if Perk Valley School Board is aware that their plan covers us. We called the County Agency this week and Mr. Bigelow verified that their plan covers us, unless we protest. He said he does not know if Perk Valley would bus all our children, or if each district that serves St. Mary's would bus their own children! As you can tell, the whole thing is unorganized, with large problems, and no specific plans on the practical aspects of making the evacuation work.

Perkiomen Valley School District adopted their evacuation plan in November, apparently with no changes and with no questions as to the specifics on how the evacuation would happen. Now we know that their plan covers us and it is already adopted. We are considering going to the March School Board meeting to request that they rescind their approval of their plan until we have our questions answered. We would like a parent poll on your thoughts regarding this. Please fill out the sheet below and return it.

As a result of getting involved with the school's evacuation plan, some of us obtained copies of our township plans. These have even more problems than the school plans! Various townships are now reviewing these plans and are delaying their approval until certain questions are answered. Newspaper articles have indicated that some have said they won't approve the plans if they don't feel they can work. If you would like to go to your township or municipality, please let us know. We can obtain a copy of your township plan and give you a list of questions on specific problems in the plans.

Family Name _____

1. I approve the action of requesting the Perk Valley School Board to rescind approval of the evacuation plan. Yes _____ No _____
I would sign a petition to that effect. _____ No _____
2. I would like a special meeting of our parents to discuss the evacuation plans. Yes _____ No _____
3. I would like a copy our _____ evacuation plan.
(fill in township or municipality)

Perkiomen Valley School District

SCHWENKSVILLE, PENNSYLVANIA 19381

B. R. STOWELL

FEB 16 1984

"Where the accent is on excellence"

February 14, 1984

NOTED	REFERRED TO
<i>[Signature]</i>	<i>[Signature]</i>

WILLIAM D. WESTCOTT, Ed. D.
Superintendent

THOMAS P. HENRY, JR.
Administrative Assistant
Instruction

GEORGE L. ALTHOUSE
Business Manager

DONALD G. DILLON
Operations & Maintenance

SHARON SHEEHAN
Food Services

Beauford R. Stowell
Manager, Schuylkill Division
Philadelphia Electric Company
Plymouth Service Building
680 Ridge Pike
Plymouth Meeting, PA 19462

RECEIVED

MAR 6 1984

R. A. KANKUS

Dear Mr. Stowell:

Perkiomen Valley School District is within the 10 mile area for the Limerick Nuclear Plant. As such we are part of the evacuation plan.

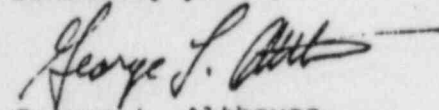
The district owned buses and vans are equipped with 2-way FM radios. The base station is located in the operations office in Schwenksville with a remote station in the transportation office nearby. Presently, our contract buses do not have radios.

The school board is investigating the possibility of equipping the contract buses with 2-way FM radios also. The cost of this is estimated in the area of \$12,000.

I am writing to you to request that Philadelphia Electric participate in this cost. The reasoning is that these vehicles will be part of the evacuation fleet and would be more valuable for this purpose due to their 2-way communication capabilities as the present district vehicles are now.

Please let me know what you and Philadelphia Electric can do in this matter.

Sincerely yours,



George L. Althouse,
Business Manager

CC: Dr. Westcott
Mr. Dillon

The Schwenksville Item

Devoted to the Interests of the Perkiomen Valley

VOLUME 106, NUMBER 32

SCHWENKSVILLE, PENNSYLVANIA

THURSDAY, APRIL 12, 1984

TEN CENTS

Protest Falls Short as Few Attend Meeting

An expected large turnout of residents to protest the Perkiomen Valley school board's acceptance of an emergency evacuation plan in case of a nuclear emergency, failed to materialize at Monday night's board meeting and only about a dozen residents showed up, but when given the chance to speak they were quite vocal.

Karen Nostadt, president of St. Mary's Roman Catholic School in Delphi, told the board that although the school was included in the school district's evacuation plan, the school had no communication from anyone about the plan and that both St. Mary's and St.

Eleanor's school in Collegeville were not provided with buses to be used in the evacuation.

Dr. William Westcott, the district superintendent, replied that while the district had signed the plan if had not yet submitted it to the state. The school district has, however, had in-service training for both teachers and bus drivers since approving the plan in November.

Mrs. Nostadt said that the plan should not have been signed since it would not work and to sign the plan would only further the interests of Philadelphia Electric Company in getting its nuclear generating plant at Limerick in operation.

Other residents said that they thought the plan was unworkable and should not have been signed, especially without public input into the matter.

School board president Rev. Fred Geib said that the board would attempt to set up a meeting with residents, school board and other municipal officials to discuss the matter.

The school board's failure to communicate with local officials brought some comment from Perkiomen Township supervisor Dave Myers who also told the board that he thought the responsibilities thrust upon school and township officials to adopt an emergency evacuation plan was more than they should be called upon to bear.

Not everything regarding the total plan for the three county ten mile radius around the Limerick plant is clear as was revealed at the meeting.

There is the question of liability, responsibility, and
(CONTINUED ON PAGE FIVE)

Protest Falls

(CONTINUED FROM PAGE ONE)

who has and who hasn't adopted the plan to date and one speaker even questioned whether the school district had to have an emergency plan at all.

The board, by a 6-3 vote, denied Barry Friedman of Green Lane an opportunity to videotape the proceedings although they did give him permission to tape the meeting.

The board also refused to consider rescinding their action in accepting draft three of the Energy Consultant's emergency plan already in force in the school district.

THURSDAY, APRIL 12, 1984

The Item Editor on the School Board**There's only One Plan
And a Lot of Children**

This is an article the editor did not want to write so soon. We had hoped that we could get some more stories in on the emergency evacuation problem which, if there ever was a sad story--this is it.

But that is another story which will have to be written later.

We have had very few people agree with the editor's opinion that the school evacuation plan will work. Worse yet, in our opinion, there are people who will work against it.

Some are people who would use any tactic to keep the nuclear plant from operating in Limerick. We have no time for them.

Others are people with genuine concern for their children, a human characteristic with which there is no argument.

It is difficult for a school board member to look a mother in the eye and say to her "you can't have your child" but that is the only way the school evacuation plan will work.

The reasons the editor voted for the plan follow.

1. It is the only plan there is. There may be things that are wrong and it may well be for Philadelphia Electric's benefit, but like it or not, you have to go on the assumption that the nuclear plant will be there, there could be an accident and as a school board member you have to have an emergency plan to try to save the children.

Now, we would gladly look at another plan provided someone had the reason, the time, the energy, the money and most important, the clout to construct one that would provide for all the children.

This will not happen. Like it or not, Philadelphia Electric has the reason, the time, the energy, the money and the clout to do the job. This may not be a reason to approve the plan, but it would be a worse crime to have no plan at all.

2. The school district is fortunate, if such a word can be stretched a little, in that in evacuation procedures it has a

unique position.

In order to evacuate an area you must have those who are to be evacuated in a position to be moved, and those who are to do the evacuation in a position of readiness.

Let us consider as an example, Perkiomen Township. The township has 1100 homes where some 3500 persons may or may not be at the time of the emergency. The township will also have to find volunteers to manage and carry out the evacuation, train them and at the time of the emergency, find them and get them in place to do their job.

The school district at the high school has its 1000 persons to be evacuated right on the premises. The persons to manage the evacuation, the teachers, are right on the premises. The school is ready to be evacuated within minutes and would be far ahead of the township in preparedness--not because of better planning or management but simply because of the unique fact that it is a school.

3. The school has the facilities to conduct the evacuation in that it has its own buses and others under contract. Not all will make it, not all the drivers will come. But it is certainly in a better position than any other governmental unit to make the evacuation of those it has to.

4. There are some other reasons. The school district now goes part way in its fire drills and can easily conduct more extensive drills.

The children will be in the hands of people they know and trust.

At the destination point, all the children will be at one place for their parents to find.

If the children are not in school the local municipality will have that many more persons to try to evacuate.

Agreed, there may be teachers who will leave, there may be bus drivers who will not show up. Where humans are involved, each one has their own reactions.

I hopefully with a plan more will be encouraged to take part. Certainly without a plan there's not much obligation to

take any part except in your own narrow interest.

There are two problems. One gets the editor in trouble continuously.

The evacuation plan can only succeed if it is followed to the letter and this means that the child must get on the bus.

The child can not be taken home, that defeats the whole purpose of the plan.

A child whose parent wishes to come and get him is placed in even worse jeopardy. What happens because of failure of the parent to arrive because they were not aware of the emergency, were too far away, or could not get through the traffic--is the bus to pull away and let the child sitting in the class room waiting while others are on their way to safety?

You can't have a separate plan for every child!

We have some suggestions. Remember what President Franklin Roosevelt said about another matter, "The only fear we have is fear itself".

We need more education on what could happen and what could NOT happen.

We need more faith in our fellow man. We've got to help each other.

As for the school district, a possibility. The alerts from the nuclear plant come in four degrees of severity, from an alert which requires no action to a general evacuation.

Let the school district move up one step and evacuate on the third degree of severity instead of the fourth.

This will be a bit of encouragement to teachers and bus drivers who all know they are getting away from danger early.

It will be before the general alarm when roads are clearer (and forgive us, mothers) before parents can react and try to get their kids out of school--they will already be on their way to safety.

The trouble with this is that the school district will get caught with egg on its face by evacuating and then the problem at the plant never reaches the evacuation level.

Then the school board will catch heck from the parents!

We will agree it is a mixed up mess, some things don't make sense. But a start has to be made somewhere. Arguing over who drew up the plan or why does no good at all.

The school district plan as it is now may not be perfect but it gives the children a better chance than the most well intentioned hope of the parent unless they are extremely lucky and happen to be in the right place at the right time.

The editor as a school board member voted for the present plan because we believe it offers the best chance for the most children to be moved to safety.

Perkiomen Supervisor Seeks Joint Meeting

Residents Slam School Board's OK of Limerick Evacuation Plan

By HOLLY HERMAN
For The Times Herald

Perkiomen Township officials, backed by about 20 residents of the Perkiomen Valley School District, showed up at a school board meeting last night to protest the board's approval of the latest draft of a nuclear evacuation plan.

The Philadelphia Electric Co. is required by federal regulations to develop a plan covering communities within a ten-mile radius of its power plant at Limerick in case of a nuclear accident.

The school board approved the draft in November and the district has used two in service days

to train teachers and bus drivers on evacuation of students.

"This is the most serious situation that has ever faced us in our governmental careers," Perkiomen Supervisor David Meyers told the board, "and there has been no communication between you as a school board and we as Perkiomen Township. I believe all of the townships should get together with the school board and have a cooperative meeting."

School board Chairman Frederick Geib said he would like to set up a meeting with residents, the board and municipal officials to discuss the plan in more detail.

Karen Nostadt, president of the Home and School Association of St. Mary's School in Schwenksville, questioned Superintendent of Schools William Westcott on provisions for evacuating students from that school.

The plan requires public school districts to provide an evacuation outline for the private schools.

"A letter came to us from the county saying that it's the district superintendent's responsibility to coordinate the plan," Mrs. Nostadt said. "We were not given any notice, and you signed the plan."

Westcott replied: "Energy Consultants are operating on behalf of the school district."

PE has hired Energy Consultants to work with municipalities and school districts on the evacuation plan.

"We adopted the plan, realizing that there will be changes made," Geib noted.

Board solicitor Jeffrey T. Sultanik added, "The school district

has been exempt from liability regarding any improper planning in the evacuation plan."

"The fact that the board responds to the plan shows a lot of courage," he added.

"I think the true courage depends on whether or not the board approves of something that won't fly," resident Ronald Monroe commented.

"I think the plan is unworkable and inaccurate," said Sandy Welsh of Skippack, who sent 800 flyers to residents to notify them of last night's meeting.

"It's not a smart thing to sign."

As last night's meeting began, the board voted 6-3 to bar a man from videotaping the discussion about the evacuation plan.

He was Barry Friedman, 31, of Green Lane, who said he is creating a documentary film the process of establishing the evacuation plan and has visited neighboring communities and taped board meetings.

"This is a public meeting," Friedman said. "Is there a law against me coming in here to film?"

Solicitor Sultanik replied: "If the board decides not to have this meeting videotaped, it's okay."

But school director Bruce MacBain commented: "We have never barred reporters; it would be difficult for me to bar this man."

"This man represents himself," said school director Ralph Decker. "His tape can be edited and taken out of context."

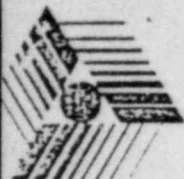
Friedman responded: "After the film is made, I will be glad to give you a copy. I have never been asked not to videotape a meeting. I recently videotaped a meeting in North Coventry Township."

"There is no way that these plans are going to work," he added later.

Directors Vilnis Viske, Edward C. Eicholtz and MacBain voted against barring the videotaping.

Directors Pat Marino, Loretta E. Robinson, John Menichello, Ernest J. Schmitt, Decker and Geib voted in favor of it.

The board then voted to let Friedman record only the sound at the meeting.



ENERGY CONSULTANTS

RIVERSIDE OFFICE CENTER 3 2101 N. FRONT ST. / HARRISBURG / PA 17110 / PH.(717)236-0031
CORPORATE OFFICE: 121 SEVENTH STREET PITTSBURGH PA 15222-3487 PH.(412)434-5200

May 18, 1984

Mr. George P. Starkey
Director of Business Affairs
North Penn School District
400 Penn Street
Lansdale, PA 19446

Dear Mr. Starkey:

I would like to inquire as to the status of the "Host School Agreement" between the Perkiomen Valley School District and the North Penn School District. The Perkiomen Valley School District Radiological Emergency Response Plan (RERP) for incidents at the Limerick Generating Station awaits a signed agreement to be added as an attachment.

As you are aware, Perkiomen Valley School District was among seven school districts and nineteen private schools or colleges that required agreements to host evacuated students in the event of an incident at the Limerick Generating Station. To date five school districts and all nineteen private schools and colleges have executed an agreement to host their evacuees. In addition, the sixth school district referenced above expects to sign an agreement within a few weeks.

As this school year comes to an end, I would appreciate it if North Penn School District could review and execute the host school agreement with the Perkiomen Valley School District so that the agreement can be attached to the Perkiomen Valley School District and Montgomery County RERP's before the July 25 practice exercise.

I appreciate your assistance on this and other matters related to emergency planning.

Sincerely,

John H. Cunnington
Associate Senior Planner

JHC:jr

cc. A. Lindley Bigelow, Montgomery County OEP

Wednesday, July 6, 1983

Editorial:

Evacuation woes

The Owen J. Roberts School District, which takes its responsibility for an emergency evacuation plan very seriously, has encountered two major problems which are making it just about impossible to plan anything.

One is the fact that many school bus drivers, filling out a questionnaire concerning how they would react to an emergency at the Limerick nuclear power plant, indicated they would not, or might not, be available to help evacuate Roberts students. Many said their families would have to come first.

You really can't blame them for that view, particularly since most are only part-time employees of the district. If anything, they should be commended for their honesty. At least the district now knows the situation and can try to work around it.

The more interesting snag involves the teachers. On the advice of their union, most of them refuse to even fill out the questionnaire. It has become — don't laugh — a contract issue.

The teachers say they don't know what the district will ask of them in this evacuation plan. They don't like some personal questions on the form, and they say the evacuation-related questions are too vague.

But the real problem apparently is the fact that the teachers feel they were left out of the task force working on the plan. They were supposed to have a representative on the committee, but they were never told about the workings of the subcommittee preparing the survey — and then suddenly the questionnaire appeared. They feel slighted.

Members of the planning task force say they don't understand the teachers' reaction. Given the adversary relationship between Roberts' administrators and the teachers' union in recent years, it should not be surprising. Still, it would be nice if a project like this could rise above that conflict.

One thing is certain: an evacuation plan cannot be a contract issue. When that siren sounds, no contract in the world will make teachers stay at school if they really feel they must leave to save their families or themselves. And, conversely, it would be unfair to let a contract forbid the participation of individual teachers who would be happy to help get the students out safely.

Because voluntary cooperation is the only way an evacuation plan can work, the teachers should be represented on the task force — every aspect of it. Failing to include the teachers in the entire process simply makes no sense.

At the same time, we hope all the union posing that has come about because of the questionnaire will be abandoned.

The teachers could leave out the personal information on the forms and fill out the rest. They could write qualified answers to questions that seem too vague. It must be obvious what information the task force is seeking.

The teachers wish to be treated as professionals. Turning a questionnaire into a union issue somehow does not sound all that professional.

A meeting is scheduled tonight to try to work all this out. We certainly hope the dispute is resolved. If the district announced that the teachers had to help with an evacuation or face disciplinary action — then there would be time enough to get the union involved. The teachers may quarrel with a proposed plan, but we can't believe they would stand in the way of even formulating one.

What happens if Owen J. Roberts eventually finds that too few employees are willing to help, and it cannot make a realistic plan?

The Nuclear Regulatory Commission says a plan must be in effect. What will the NRC say if it turns out that Roberts, and perhaps other school districts and municipalities, can't plan a workable evacuation? What will it mean for Limerick?

We're betting that the evacuation issue will never prevent Limerick from opening — especially since it is already patently clear that this area cannot be evacuated in the amount of time suggested by the NRC. Still, plan or no plan, an evacuation might someday be necessary.

It would be nice to know how we might at least try to accomplish it.

OWEN J. ROBERTS SCHOOL DISTRICT

ADVOCATE

OWEN J. ROBERTS SCHOOL DISTRICT
R. D. 1 POTTSTOWN, PA. 19464

VOLUME XVIII, NO. 3

FEBRUARY 1983

SCHOOL BOARD ELECTS NEW OFFICERS

At the annual organization meeting of the School Board held on December 6, 1982, Mr. J. Barrie Frees was elected Owen J. Roberts School Board President to succeed Mr. David Merroth. Mr. David Chapman became Board Vice President. Other officers remaining in their positions are: Susan T. Pedersen, Secretary; Thomas E. Buckwalter, Treasurer.

The new Board President, Mr. J. Barrie Frees, resides in Spring City. Mr. Frees is a graduate of West Virginia University and holds a Masters degree from the University of Southern California. He is the first Board president to have graduated from the new Owen J. Roberts

OWEN J. ROBERTS BOARD OF DIRECTORS
J. Barrie Frees, President
David Chapman, Vice President
Susan T. Pedersen, Secretary
Thomas E. Buckwalter, Treasurer
Harry S. Forbes
J. Spencer Helmers
Preston O. McCain
David Merroth
Cathie N. Whitlock
Roy C. Claypool, Ed. D.
District Superintendent



L-R: J. Barrie Frees, Dr. Roy C. Claypool, David Merroth.

TASK FORCE FOR DEVELOPING NUCLEAR EMERGENCY GUIDELINES

As a result of a request from the Pennsylvania Department of Education and the Pennsylvania Emergency Management Agency, and due to our proximity to the nuclear facility at Limerick, the School Board of the Owen J. Roberts School District has established a School District Task Force for the development of school Emergency Planning Guidelines involving potentially hazardous conditions. All school related organizations were invited to send representatives to attend the work sessions of this Task Force.

Philadelphia Electric Corporation is assisting in the development of these Emergency Plans by providing the services of Mr. John Cunningham, a trained consultant with a firm which specializes in developing Radiological Emergency Response Plans. The Task Force has made significant progress in accomplishing its purpose during meetings held on November 30, 1982, January 26, and February 17, 1983. It has reviewed the existing Emergency Plans of the School District, and identified resources and agencies which will support the Task Force in the development of the plan. Mr. Cunningham has taken many factors into consideration and has constructed the drafts of our Emergency Plan which are being reviewed by the Task Force. The role of the task force will be to review all drafts of the plan and make recommendations for amending and improving the plan to best meet the needs of the students in the Owen J. Roberts School District. Final recommendations regarding the emergency procedures and operational details will be made by our Task Force and reviewed by our Board of Education for approval. The third draft of our Emergency Plan will be reviewed by the Task Force at a meeting scheduled for March 30, 1983 in the Middle School at 7:30 P.M.

The need for emergency planning has become increasingly evident from the recent experiences of flood, oil embargo, natural gas crisis, toxic gas spills, and the nuclear incident at Three Mile Island. Responsible leadership and effective planning are essential in providing direction and effective communication to coordinate the flow of services and maintain the safety of our students. It is clear that comprehensive planning is necessary in order to avoid or lessen the impact of a crisis situation on our students.

The School District will sponsor a special public information program entitled Basic Radiation and Radiation Protection for all interested parents and citizens. This course will be held on a weekday evening or a Saturday morning during the months of March or April. Anyone interested in taking this course should contact the office of Mr. Denny Bolton, 469-6261.

Draft #6

Owen J. Roberts School District
Radiological Emergency Response Plan For Incidents
At The Limerick Generating Station

(a very brief summary)

Responsibility for initiating action, based on a recommendation from the Chester County DES, (Dept. of Emergency Services), rests with the Superintendent. (p. 6114.4)

Four classifications of "Incidents" have been identified to facilitate planning for responses to incidents.

- A. Unusual Event - school not notified
- B. Alert - school is notified. Preparations begin for possible action.
- C. Site Emergency - East Coventry students evacuated to Middle School; preparations are made for the possibility of sheltering or evacuating of all students
- D. General Emergency - decision is made to either shelter or evacuate

Sheltering - Action taken by the public to take advantage of the protection afforded by remaining indoors, away from doors and the windows, during and following the passage of the radioactive plume. (p. 6114.4 b)

If school sheltering is recommended by the County, students located within the plume exposure pathway EPZ will be sheltered in their own school building. Should sheltering delay dismissal, parents will be notified by the district or a protective action recommendation will be issued by Chester County DES: School transportation schedules will be adjusted appropriately and parents so notified. (p. 6114.4 e)
Sheltering does not indicate preventing parents' access to children. Parents who do violate the shelter advisory and come to schools should be permitted to pick up students. (p. 6114.4 f)

Evacuation - A decision to evacuate risk municipalities (including school districts) will be made by PEMA/Chester County and the decision will be announced through the Chester Co. DES to districts and building principals. The Owen J. Roberts School District retains the authority to close schools at its discretion. (p. 6114.4 f)

LOGISTICS OF EVACUATION:

When school is in session and school evacuation is recommended, students located within the plume exposure pathway EPZ will be bussed directly to the host school. (at this time, considered Twin Valley), to await pick-up by parent or guardian.

SUFFICIENT TRANSPORTATION WILL BE COORDINATED TO MOVE ALL STUDENTS INSIDE THE EPZ AT ONE TIME!!!! (p. 6114.4 f)

RISK SCHOOL FACULTY/STAFF WILL ACCOMPANY EVACUATED STUDENTS TO DESIGNATED HOST SCHOOLS IN THE BUSES OR IN THEIR PRIVATE CARS, AND REMAIN WITH STUDENTS UNTIL THEY ARE PICKED UP BY PARENTS/LEGAL GUARDIANS IN ACCORDANCE WITH THE DISTRICT POLICY!!!! (p. 6114.4 f,g)

many staff members have indicated they will not evacuate with the students, and many would not remain in school

under Co. DES
is not
visions
our
make

How will you know your children have been evacuated?
How long will they wait for a bus?

how long will
+ this take?
we do not have
(enough buses or
drivers)

"unmet needs"

Roberts emergency plan halted until county responds to list

By NANCY CRATER
Mercury Staff Writer

A citizen task force charged with drafting an emergency response plan for the Owen J. Roberts School District can proceed no further in its work until a list of "unmet needs" is addressed by county emergency planning officials.

In a letter to Chester County Emergency Management Director John McNamara, Superintendent Dr. Roy C. Claypool outlined a list of concerns that he said must be addressed before an emergency plan can be approved by the board of school directors.

The list includes a significant shortage of buses and personnel — bus drivers, teachers and traffic controllers — to help evacuate children during an emergency situation. It also notes that the district has yet to be informed of a "host site" where students can be reunited with their parents following a mass evacuation.

The Owen J. Roberts district, like other institutions within a 10-mile radius of the Limerick nuclear power plant, is required to have a viable emergency response plan prior to the scheduled operation of the plant next year. The emergency plan will be implemented in the event of a nuclear

(Continued on page 5)

Roberts quits emergency plan until county responds

(Continued from page one)

accident, and also if the area is threatened by any manmade or natural disaster.

Claypool's letter requests a detailed response to the district's unmet needs by county emergency management officials no later than June 1. "Unless these issues are resolved by then, I will not recommend approval of any plan and I don't think the board intends to accept such a plan," he said.

The district was informed over a year ago that county officials would be responsible for arranging to compensate for any shortfalls of personnel, transportation or other unmet needs encountered in the planning process. Despite two prior requests issued by the task force for assistance, no response has been forthcoming from the county agency.

"And we would like to know at this point, if it's not the county's responsibility, then whose responsibility is it?" questioned Claypool.

The citizen task force has spent a year and a half formulating an emergency response plan, and currently has completed its seventh draft plan.

In his letter to McNamara, Claypool stated, "I believe the Citizens'

Task Force identification of needs are minimal and reflect optimum conditions. That is to say, after thorough review and investigation I believe their needs are in some cases understated."

The following items were defined by Claypool as the district's unmet planning needs:

- Of an estimated 55 (72-passenger) buses needed to transport students, only half that number actually will be available during an emergency evacuation situation, according to the task force.

- While 25 bus drivers agreed in a recent survey to drive a school bus in a radiological emergency, many of these prefaced their statement with the comment that their families would come first, and they must be assured that their particular children had been taken care of. Therefore, the estimate of available drivers was set at 18. The task force concluded that about 37 drivers are needed for a complete evacuation operation.

- Teachers in the district were surveyed twice — the second time following an extensive in-service on the duties and responsibilities of teachers during an evacuation. "Our teachers were very open, and

I believe honest, in their responses to this survey," remarked Claypool. "Human nature is to first of all secure unmet family needs."

Of 66 percent (137 individuals) who responded to the teachers' survey, slightly more than half (60 percent) signed the documents. Thirty-eight agreed to accompany students by bus to the host center or mass care center in an evacuation. A higher number, 56 teachers, agreed to drive their own vehicles (without students) to the host center to provide supervision for the students.

From the available data, including the calculation of average daily teacher absence rates, the task force estimates that 156 teachers will be needed and only 65 will be available. This leaves a need for 91 adult volunteers to assist students by bus or car to the host center.

- At least 22 traffic controllers will be needed to accommodate the flow of traffic around all schools in the event of an evacuation.

"In addition to traffic controllers, I raise a serious question as to the traffic controlling activities that will take place at the intersection of Routes 23 and 100, Route 100 and

Cadmus Road, and Route 23 and the exit from Owen J. Roberts," noted Claypool in his correspondence.

"My personal interaction with a number of parents indicates that the first response will be to converge on our educational centers for the purpose of gaining access to their children. Unless this need is met, we will experience mass hysteria, confusion, and total blockage of any possible evacuation from our school facilities by school buses."

Finally, Claypool stated that the task force to date has no agreement with another school district willing to serve as a host site in case of an evacuation.

Before the end of June, the school board will meet with the citizen task force for a review and update of the proposed plan. Before that, the public will have an opportunity to voice its opinions and concerns with the plan, said Claypool.

There will be a public meeting 7:30 p.m. June 6 in the Owen J. Roberts Middle School Auditorium. Each speaker will be given two minutes to outline their views, and those attending will be requested to speak only on issues pertaining to the emergency response plan.

Editorial:

Evacuation plan stalls

Thursday, May 24, 1984

Of all the school districts within the 10-mile radius of the Limerick nuclear power plant, none has taken its evacuation planning more seriously than Owen J. Roberts.

Roberts' Citizens Task Force spent 18 months conscientiously trying to come up with a plan to transport the district's more than 3,000 students to a refugee center in case of an emergency at Limerick.

The committee struggled with unions to finally come up with an honest appraisal of how many teachers, bus drivers and other personnel can be counted upon to help. Accurate numbers are important. A school district can order its personnel to stay around, but no threat of penalty will keep staff members at school if they believe their first responsibility is to families at home or to children in other schools.

After all the figures are in, Roberts finds that it needs, among other things:

- 28 additional buses
- 37 additional bus drivers
- 91 volunteers to replace teachers who feel they cannot promise to help
- 22 traffic controllers to help buses get onto the roadways and to deal with parents arriving to pick up their children.

Roberts had been told that the county — Chester in this case — is responsible for providing personnel and equipment that individual school districts and municipalities cannot provide. Yet the county has failed to come up with a single bus, despite repeated requests from Dr. Roy Claypool, Roberts superintendent.

So Roberts has issued an ultimatum. If the county doesn't come up with the goods by June 1, or at least give a clue as to where Roberts should fill these needs, then the district is going to stop its planning process and refuse to approve any evacuation plan.

That in itself is interesting. But consider that the other area school districts have not done half the planning Roberts has done, or at least have not informed the public about it. Some may never do the honest appraisal of personnel that Roberts has done.

Then take the municipalities. Many of them are saying they will not spend a dime on evacuation plans, protesting that tax dollars should not be spent on defense against a nuclear accident at Philadelphia Electric's plant. Municipal officials are indignant about the requirement that they also must provide security for evacuated homes. How the heck are they supposed to find people to stay behind?

Is all this planning a joke? If so, it is an expensive joke. We have yet to see any evidence that this area could be evacuated in a day, or even three days. The elaborate planning at Owen J. Roberts has gotten the district a lot of information but has not brought it close to having a workable plan. And even if Roberts gets the manpower and buses it needs, its personnel will be at the mercy of the same chaotic traffic conditions that will keep the rest of us penned in.

If every school system and every municipality does the detailed study of evacuation possibilities that Roberts has done, the Federal Emergency Management Association might have to look twice at the Limerick situation. If the others do not, then FEMA will probably pull out the rubber stamp and dispense with the issue.

Regardless of what happens, Owen J. Roberts is much better off for having taken the emergency planning exercise seriously.

POTTSGROVE SCHOOL DISTRICT

KAUFFMAN ROAD • POTTSTOWN, PENNSYLVANIA 19464-2398 • (215) 327-2277
Office of the Superintendent

December 14, 1983

Mr. John H. Cunningham, Planning Specialist
Energy Consultants, Inc.
Riverside Office Centre 3
2101 North Front Street
Harrisburg, Pennsylvania 17110

Dear John:

We had another meeting of our Radiological Emergency Response Planning Committee last evening and several questions have emerged. Please help me to resolve the following uncertainties:

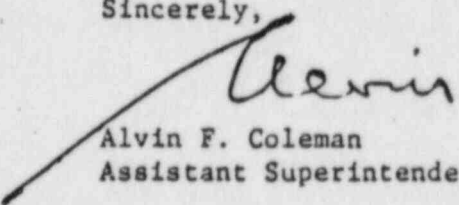
1. On page 6, item B3, do I understand correctly that the coordination of transportation resource requirements will be handled by agreement in the Plan prior to any incident?
2. The two paragraphs at the top of page 9 under item 3 say essentially the same thing, do they not?
3. Paragraphs F1 and F3 on the top of page 10 are confusing to us -- a clarification would be helpful.
4. Similarly, item 3B on page 11 requires some discussion. We assume that you would not want us to have the students use their automobiles in the event of an evacuation but we do not have a District policy for an item such as this.
5. On page 13, item 3B, do you mean fire alarm systems, emergency generating systems, and so forth?
6. Is it possible that our high school and intermediate school science teachers could obtain some equipment and/or instruction for our students regarding radiation? For example, if our high school could be a radiological monitoring station could we obtain weather station equipment, etc.?
7. Could we review the closing of schools situation during an alert? I would assume that if there were an alert and schools were not yet open for the day, that schools would not be open. Would you have patience and go over this with me one more time?

8. The matter of caring for students during athletic events here at the home school was raised. If we work out some sort of a policy, where would you include it within the Plan?
9. Dick Bacchi, of West Pottsgrove Township, wanted me to check to see that the busses are following snow emergency routes. He mentioned that they were within West Pottsgrove Township but when they left West Pottsgrove into Pottstown on Glasgow and Shoemaker Roads are those Pottstown roads also designated as snow emergency routes? I would imagine that this is something that you and Ron Deck are coordinating.
10. I had very strong opposition from Dick Bacchi on the issue of payment for training. He stated that Commissioners were told that this Plan would not cost any of us additional funds and that if we wanted to have training for bus drivers (on a mandatory basis) it would cost the District money for their salaries. He, as a taxpayer, would object to this. Further, he stated (even though he is a teacher, himself) that PECO should pay for any inservice for faculty members. I would appreciate an opportunity to discuss this matter with you.
11. We are in favor of participating in some training but the monetary issue should be resolved and it was felt that too much time was allocated for the training sessions.
12. Roy Cubbler, of Lower Pottsgrove, informed me that we should have the Red Cross involved in the Planning and that they should be mentioned in the Plan -- possibly under the superintendent's checklist of people to call immediately. My understanding is that if we contact the Red Cross and ask them to assume a role then all costs which we may incur during a sheltering or evacuation will be borne by the Red Cross. Am I correct?
13. Whose school calendar applies in the situation of public school responsibility for non-public schools? Some of the non-public schools are open in the summertime. That matter should be clearly defined within the Plan.

As you can tell, we had an interesting session and another one (or more) is anticipated. I do need your help with responses to these questions before I schedule our next meeting.

Any assistance you could provide would be most gratefully received.

Sincerely,


Alvin F. Coleman
Assistant Superintendent

AFC/jz

POTTSGROVE SCHOOL DISTRICT

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Office of the Superintendent

April 17, 1984

Mr. John H. Cunnington, Jr.
Energy Consultants
2101 North Front Street
Harrisburg, Pennsylvania 17110

Dear Mr. Cunnington:

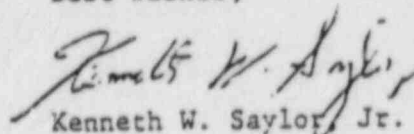
Attached for your use is an update of attachments 1 through 3 of our Radiological Emergency Response Plan.

I have taken the liberty of changing the format slightly for that portion of attachment 1 showing the number of individuals in a particular school. Also, in accordance with our previous discussions I have marked all references to non-public schools as being for "information only."

Dr. Coleman and I recently had a meeting with Father McGuire and John Sengia of St. Pius X High School. At that meeting they were in agreement with us that we should be providing only backup notification services to them in lieu of assuming responsibility for other aspects of the plan as had been previously shown. In this regard, when we assume total responsibility for updating our own plan it is our intention to ask the non-public schools for portions of their plans for inclusion in our plan as information items only.

If you have any questions on any of the above or on the changes as submitted please give me a call so that we might discuss them further.

Best wishes,



Kenneth W. Saylor, Jr.
Director of Administrative Services

KWS/jz

Attachments - 50



The Mercury

A Pulitzer Prize-winning newspaper

Vol. 53 No. 223

Pottstown, Pa. (1964) Thursday Morning, June 14, 1984

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40 Pages — 4 Sections
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HOME DELIVERY

Limerick: Year of decision

Injured Limerick plant workers count on Goodwill Ambulance

By FRANK WARNER
Mercury Staff Writer
Fourth in a five-part series

The Limerick nuclear power plant is running at full power when a fire breaks out in a room near the reactor containment. Two of the 400 workers at the plant are seriously injured.

What happens?

According to Philadelphia Electric Co.'s onsite emergency plans, the most likely response would be this simple:

- Call Goodwill Ambulance Co. in Pottstown.
- Have Goodwill take the injured Limerick workers to Pottstown Memorial Medical Center for treatment.

But this is where the Limerick plant's challengers look at PE's plans and ask, "What if?"

And before the nuclear plant is allowed to begin operating, PE has to convince the U.S. Nuclear Regulatory Commission's Atomic Safety and Licensing Board that all the important questions have been answered.

On the issue of onsite emergency planning, PE has to show the NRC licensing board the Limerick plant and its staff are adequately prepared to handle anything from a worker falling from a ladder to a large scale

(Continued on page 5)

Limerick: Year of decision

Injured Limerick plant workers count on Goodwill Ambulance

(Continued from page one)

release of radioactivity.

At NRC hearings on onsite planning, the nagging question has been: What if Goodwill Ambulance and Pottstown Memorial Medical Center are not available during a Limerick plant emergency?

Charles Elliott, attorney for Limerick Ecology Action, has asked PE to explain how Goodwill and PMMC could help injured Limerick workers if there were a massive area evacuation taking place outside the plant at the same time.

"I think it's apparent that if there is a general emergency requiring an evacuation, at the same time Goodwill Ambulance is supposed to be running to the site, they are going to be called upon by a number of townships," says Elliott.

He points out, too, that if a Limerick plant emergency were the reason for the evacuation, the Pottstown medical center — just 1 1/2 miles away from the plant — itself would have to be evacuated.

And in that case, the 320-bed hospital also would want the five Goodwill ambulances to help remove its sickest patients.

C. Roy Mest, chairman of Goodwill Ambulance, says Goodwill has a contract to provide ambulance services to the Limerick plant. But he is not sure where, if anywhere, the ambulances would go in the middle of an evacuation.

"In our run area alone, we have one major hospital and three major nursing homes," says Mest. "So if we have a full-scale evacuation, God knows we're not going to have enough ambulances with five."

He says he also is aware that in draft emergency plans for Limerick, several area townships list Goodwill as the organization they expect to use for ambulance services.

Limerick Ecology Action contends the complications of an evacuation could make it impossible to reach seriously injured workers at the Limerick power plant.

But Roberta A. Kankas, PE's emergency preparedness director, says Goodwill and PMMC are not the only groups that can help injured workers.

"In the event that we did have that low probability simultaneous event," says Ms. Kankas, "Montgomery County could send a backup ambulance to handle Goodwill responsibilities, if necessary."

"The other alternative we have would be to transport the individuals someplace outside the EPZ (the 10 mile Emergency Planning Zone) by a helicopter or by another ambulance company that was not on call."

Goodwill's Mest says it is easier to plan alternatives than to see the plans carried out.

It is possible to get 200 extra ambulances to Pottstown within an hour, he says, but he is not convinced that any volunteers — including himself — are willing to drive through a radioactive plume.

"If the actual thing comes, I don't know what I'm going to have until I see them pull in here — if I'm here to see them," he says. "I'll be honest with you. If the real thing happens, I don't know what my response will be."

Nevertheless, PE officials say Goodwill and PMMC will be able to handle virtually all incidents involving injuries to Limerick plant workers.

Goodwill has agreed to respond to Limerick calls, and the hospital has agreed to accept any injured Limerick workers. PMMC staff members are to be trained specially on the treatment of radiation exposure.

For occasions when PMMC may not be available, PE has another agreement with the Hospital at the University of Pennsylvania, Philadelphia, to treat Limerick workers.

LEA complains that PE has failed to make arrangements with any other hospital, even though at least 10 hospitals outside the 10-mile plume exposure zone are closer than the University of Pennsylvania.

For fire protection, PE has agreements from Linfield Fire Co. to handle most fires at the power plant and Limerick Fire Co. to serve as a backup to Linfield.

Limerick Ecology Action has questioned the adequacy of the two volunteer fire companies up against a huge nuclear power plant on 587 acres of land.

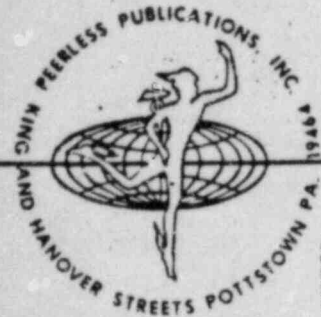
Linfield Fire Co. has 25 to 30 active volunteer members and four fire trucks. Limerick Fire Co., with 40 active members, has four trucks.

Both fire companies are small, but the Limerick Township government recently gave each company \$200,000 to help pay for construction of new firehouses.

During NRC hearings, Limerick Ecology Action also has argued that PE's Limerick onsite plans have not fully explained how PE would notify local, state and federal government officials of any Limerick plant emergency.

PE says its procedures for notifying those emergency officials are spelled out clearly, from the Limerick control room shift superintendent to the governor of Pennsylvania.

The NRC licensing board is expected to decide the adequacy of PE's onsite emergency planning for the Limerick plant next month. A decision on offsite planning — a bigger issue involving massive evacuations — is to come later.



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Vol. 53 No. 224

The Mercury

A Pulitzer Prize-winning newspaper

Pottstown, Pa. (19464) Friday Morning, June 15, 1964

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HOME DELIVERY

Government sets no time limit on speed of nuclear evacuation

By FRANK WARNER
Mercury Staff Writer

The federal government does not tell an electric company seeking to build a nuclear power plant to look for a place that could be evacuated within "X" number of hours.

In fact, the government has no limit on nuclear accident evacuation times.

If it did, time studies, considering populations and highways, would decide where a nuclear plant would go. If a study showed evacuating a 10-mile radius would take "X" plus 1 hours, the utility would have to put the plant somewhere else.

"We have not put a time constraint on any evacuation plan anywhere in the country," says James R. Asher, a technological hazards chief with the Federal Emergency Management Agency (FEMA) Region III.

"We don't issue a bottom line number," he says, "because areas throughout the country differ."

Instead, Asher explains, government agencies study each nuclear plant area, calculate what evacuate speed is possible, and make decisions from there. In some accident cases, if evacuations would be too slow, government officials might direct a nuclear plant's neighbors to take shelter in their basements.

(Continued on page 5)

Government sets no time limit on speed of nuclear evacuation

(Continued from page one)

Asher, whose FEMA office is in Philadelphia, is to review the evacuation plans for the Limerick nuclear plant before FEMA advises the U.S. Nuclear Regulatory Commission on the adequacy of the plans.

The NRC must accept the plans before it can issue Philadelphia Electric Co. a license to begin full-power operations of Limerick reactor Unit 1.

NRC officials say they would not reject an evacuation plan because an evacuation would take too long. They confirm there is no evacuation time limit.

"We don't have any set time that is acceptable," says NRC spokesman Susan Gagner. "We would think that the local and state people would consider the total evacuation plans when considering whatever protective actions they would take."

A recent Limerick evacuation time study concludes that, depending on weather and time of day, it would take between 4 hours, 15 minutes and 6 hours, 45 minutes to evacuate everyone within 10 miles of the Limerick plant.

The area around Limerick is considered a high-density population area, with 135,000 people within 10 miles and 6.8 million people within 50 miles of the plant.

In deciding between sheltering and evacuation, emergency authorities say they would consider the likely evacuation speeds.

They also would weigh the possibility a radioactive release would be so short and small that an evacuation would expose the population to more radioactivity than sheltering would.

Dr. Walt Pasciak, an NRC Region I radiation protection chief, says timing is important. He says he would advise an evacuation if a nuclear plant experiences "slow bleeding" of large amounts of radioactive materials over a several hours.

A half-hour ride out of the plant area might be better than sitting at home six hours exposed to relatively high radiation, says Pasciak.

But if there is a potential for a moderately large, sudden release, possibly from a crack in the plant containment walls, it is better to ask people to take shelter so they do not drive right into the radioactive "puff," he says.

That kind of "explosive release," he says, is likely to pass by quickly and have little effect on people who remain in their homes.

Sheltering also is preferred, when the likely radioactive releases are calculated to be small, says Pasciak.

And how about a situation, like the 1979 nuclear plant accident at Three Mile Island, where experts seem unsure how bad the accident is or how much worse it can get?

"I think the system is a whole lot better now than it was at TMI," Pasciak answers.

LOCAL / REGION

BUCKS BERKS AND MONTGOMERY COUNTIES

Role of Bucks in evacuation to be studied

By BUZZ CRESSMAN
Bucks-Mont Bureau Chief

The county commissioners will name a citizens' advisory panel next month to help develop what Bucks believes its role should be in any evacuation for residents near the Philadelphia Electric Co. nuclear plant at Limerick, Montgomery County.

Bucks commissioners yesterday offered no suggestions on what kind of proposal the county may seek. But Commissioner Lucille M. Trench reaffirmed the majority commissioners' decision of last week not to participate in the July 25 evacuation, saying the existing plan does not satisfy the county.

Various agencies including the state, PE and others associated with the nuclear power industry have been notified of the decision not to participate, County Administrator William Rieser said.

The county fears its participation would represent an endorsement of the planning, spokesmen have said. Before Bucks takes any steps, it will seek to have procedures reviewed which call for Bucks to assist an anticipated 24,000 people from the Limerick area should an incident de-

velop at the plant. No Bucks residents are to be evacuated because they are not within a 10-mile radius of the plant.

Spokesmen emphasized Bucks should be part of a formal plan to aid an evacuation but contended the existing procedures will not work.

There are too many "mysteries" regarding the plan, said Mrs. Trench. The public and even officials across the county are not familiar with it, she said.

Mrs. Trench claimed the plan leaves unresolved some fundamental questions. One regards costs of supplies for people accommodated in host sites such as Bucks.

"Who will pay for the food staples that are to be available at Doylestown Airport?" she asked, also questioning how the Pennsylvania Turnpike could accommodate the thousands of cars during peak hours, if that is when an evacuation occurs.

Her major criticism seemed to surround plans for school children, who Mrs. Trench said, would be moved from schools in the evacuation area of Montgomery to safe sites in Bucks.

Mrs. Trench said it seemed im-

EVACUATION

►Continued From Page B1

possible to her that families would pack up and plan to evacuate if their children were in school at the time, even if they were told they could be reunited later.

The evacuation plan calls for traffic control points, including Route 313 at Souderton and Route 202 at Montgomeryville, from which people evacuated from a 10-mile radius of the nuclear plant would be directed to mass-care and decontamination centers which include a number of school buildings in Upper Bucks.

Resistance to the plan by Bucks County's majority commissioners has been stimulated by the Central Bucks Clean Energy Collective, an organization which believes the plan is unworkable.

Minority GOP Commissioner Andrew L. Warren has criticized the county's decision to withdraw from the drill. He said the drill would help develop workable alternatives.

The July 25 test will not include any evacuation of people but is designed to establish the preparedness of communications and other aspects of the plan.

Please See EVACUATION Page B4

Bucks won't join in Limerick drill; calls emergency effort 'a charade'



Lucille M. Trench
"We care ... for the people"

By Steve Stecklow
Inquirer Staff Writer

The Bucks County commissioners voted 2-1 yesterday not to participate in an emergency drill for Philadelphia Electric Co.'s Limerick nuclear power plant scheduled for July 25.

Calling the drill "a charade," county Commission Chairman Carl F. Fonash and Commissioner Lucille M. Trench voted to send a letter to the federal Nuclear Regulatory Commission, the Montgomery County commissioners and other state and local agencies informing them of their decision.

The action was criticized by Republican Commissioner Andrew L. Warren, who voted against the resolution.

"Why are we going to sit here and tell people that we are so callous that we don't want to be involved in any emergency preparation?" he asked.

But Trench replied, "I hope the message that will come through is that we care so much for the people in Bucks and its surrounding counties that we are not going to accept this plan, which we consider totally inadequate and unrealistic."

Fonash introduced the resolution at yesterday's commission hearing after several members of the Central Bucks Clean Energy Collective attacked PE's emergency plans in the event of an accident at the Montgomery County plant. The plant is expected to begin operating next year.

In a statement, the group called PE's plan "the best-kept secret of the year" and said few Bucks County residents were aware of its details.

According to Charles McGill, the county's director of emergency services, the county's participation in

the drill would involve only receiving notification of the "accident," contacting the Red Cross and possibly sending two county employees to a shopping center in Souderton.

In the event of a serious accident, however, PE's plan would call for Bucks County to shelter in its public schools up to 25,000 Montgomery County residents who live within 10 miles of the plant, McGill said. Up to 25,000 more residents would be expected to flee to Bucks, he said.

"Certainly, it's an unusual step by Bucks County in not being a very good neighbor to its adjoining county," said PE spokesman Neil McDermott.

McGill said he believed PE's nuclear emergency plan was "workable," saying it was analogous to how Philadelphia police handle accidents on the Schuylkill Expressway.



The Mercury

A Pulitzer Prize-winning newspaper

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Vol. 53 No. 224

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HOME DELIVERY

Limerick: Year of decision Evacuation plans focus on vehicles, volunteers, variables

By FRANK WARNER
Mercury Staff Writer
Fifth in a five-part series

Philadelphia Electric Co.'s tallest remaining hurdle on the road to licensing the Limerick Unit 1 nuclear power plant is evacuation planning.

It is the last and possibly most controversial issue the U.S. Nuclear Regulatory Commission expects to consider before deciding on Limerick's full power license.

To get that license, PE must show that local, state and federal government agencies have "adequate" emergency plans to evacuate or shelter all 185,000 people within 10 miles of the Limerick plant.

In hearings tentatively scheduled for next month, an NRC Atomic Safety and Licensing Board will have six basic questions to ask of Limerick evacuation planning.

- Can emergency workers provide transportation to 29,000 school students, 500 hospital patients, 2,200 Graterford prison inmates and thousands of others who would not be able to evacuate themselves in an emergency?
- Can state police and the National Guard keep Route 422, Route 100, Route 724, Route 23 and other evacuation routes open if they are faced with snow, disabled vehicles or heavy business traffic?
- Do local, county and state emergency plans spell out exactly who they would have, 24 hours a day over an extended period, to man traffic control points and direct other aspects of an evacuation?
- Will enough emergency workers really stay — and conversely, will all Limerick area residents really leave — when threatened with invisible radiation from a nuclear disaster?
- Will emergency workers and farmers have enough dosimeters, to measure their radiation doses, and potassium iodide (KI) tablets, to prevent their thyroid glands from absorbing radioactive iodine?
- Can area residents rely on 166 PE sirens to alert them to a Limerick plant incident, and can the residents rely then on the radio stations designated to broadcast emergency information on the incident?

PE officials say the answer to all the questions either is yes or will be yes by the time Limerick Unit 1 is ready for full-power testing in late November or early December.

Related map, chart and stories on page 31

To demonstrate that an evacuation would not be impossible, PE recently hired HMM Associates of Concord, Mass., to weigh the possible problems of a Limerick area evacuation and estimate how fast everyone could be moved out.

HMM Associates concluded that an evacuation of all 42 municipalities in the 10-mile Limerick Emergency Planning Zone could take as little as 4 hours and 15 minutes, and no longer than 6 hours and 45 minutes.

An evacuation would be quickest on a winter week night with fair

(Continued on page 5)

weather, said the consulting firm. It would be slowest on a winter week day, during a snowstorm.

HMM Associates reported its timing goes from the moment the governor of Pennsylvania orders an evacuation until the moment the last person is out of the Limerick emergency zone.

But several groups contend that all Limerick evacuation time studies have made overly optimistic assumptions about people and equipment in a radiological emergency.

Officials and parents in the evacuation zone's school districts say there are major transportation problems to be resolved in planning an evacuation that might happen during a school day.

At a June 6 public meeting, Owen J. Roberts School Superintendent Roy C. Claypool chastised county, state and federal planners for spending too much time outlining problems, and too little time showing ways to overcome them.

"Let us not spend these next few months debating how to rearrange the chairs on deck of the Titanic," Claypool told a crowd of parents and concerned citizens.

The Limerick nuclear plant is in the Spring-Ford School District, but the nearest school, the East Coventry Elementary School, is 1.4 miles away across the Schuylkill River in the Owen J. Roberts School District.

All or most of nine school districts are within 10 miles of the power plant. The others are Pottstown, Pottsgrove, Bovertown, Daniel Boone, Phoenixville, Perkiomen Valley and Methacton.

Most of the school districts bus children to school each day in two shifts, one for elementary students, the second for secondary students. Because of that two-shift system, and because many students never are bused, there is a shortage of buses to evacuate all the students at once.

Owen J. Roberts emergency plan coordinator Joseph Clark says the district is counting on Chester County to come up with the 30 extra buses. Other districts need similar numbers of buses.

"We really don't know where Chester County is going to supply the buses from," says Clark. "And finding buses is only part of the problem. The other part is finding drivers." Clark says outside drivers might get lost on his school district's back roads.

William Welliver, Spring-Ford School District superintendent, estimates that considering all the hours in a year, schools are in session just 16 percent of the time. So he hopes any evacuation comes after school, when the schools wouldn't need any buses.

Nevertheless, Limerick Ecology Action, a Pottstown-based environmental group, has made the issue of buses and bus drivers an official contention in the NRC Limerick licensing hearings.

The Federal Emergency Management Agency (FEMA) reported May 8 that finding needed buses and other vehicles is a top-priority "Category A" deficiency in the Limerick evacuation plans.

FEMA, which must review Limerick emergency plans before the NRC decides on a Limerick full-power license, said area municipalities report a need for at least 317 buses and 30 ambulances.

The buses and ambulances would not be to move only school students, but also to take people from the 320-bed Pottstown Memorial Medical Center, the 175-bed Phoenixville Hospital, homes for the elderly and the retarded, and day care centers.

FEMA said the area's transportation needs cannot be added up, because municipalities have no complete lists of elderly, sick and handicapped people who would need a ride or other special care during an evacuation.

FEMA does not know either what resources the State Correctional Institution at Graterford would need, because the state Bureau of Correction has not yet submitted its plan to move Graterford prisoners.

A NUS Corp. study for PE in 1980 assumed half the patients in the Pottstown medical center, 1.5 miles from the Limerick plant, would be well enough to be evacuated by relatives, while many others would have to be moved by ambulance.

The report noted that some patients, in traction or intensive care, would have to be moved, bed and all, in moving vans.

The same NUS study also said the Graterford inmates, 8.3 miles from the power plant, would be moved in a convoy of 90 buses guarded by the state police.

But the study warned that prison officials did not want any nighttime evacuation. Their initial plans showed if an evacuation order came after sunset, it would be too risky to put the prisoners on the buses until after sunrise.

Even if all Limerick area emergency workers received all the vehicles they asked for, an evacuation would not run smoothly if the local roads and highways were clogged with snow or traffic.

Limerick Ecology Action contends that the state police, National Guard and state Department of Transportation do not have the equipment to clear snow, fuel up cars low on gasoline, or tow disabled vehicles during an emergency.

The anti-nuclear group also argues that the normally heavy traffic in the Valley Forge-King of Prussia area might hold up evacuees attempting to flee east from the Phoenixville area.

But Robert L. Reber, director of the Berks County Emergency Management Agency, says he would not expect any obstacles to slow traffic significantly during an evacuation.

He says it is unlikely everyone would leave at once, as drivers do after a major league baseball game, so such key highways as Route 422 and Route 724 would not be clogged. In fact, they will remain open to two-way traffic.

Limerick: Year of Decision

Evacuation plans focus on vehicles, volunteers, variables

"The traffic flow at any one time is not going to be that heavy," Reber explains. "Those roads are not going to be made one-way, and there shouldn't be any problems." Smaller roads are to be made one-way.

FEMA has not labeled the possibility of impassable roads a major problem.

The agency did find fault, however, with the failure so far of Montgomery and Berks counties to line up and name in their emergency plans the specific agencies who would man specific traffic control points.

Proper handling of key intersections would help the flow of traffic out of the 10-mile Emergency Planning Zone and keep others from entering the area.

"Since an evacuation would, most likely, be an extremely dangerous time period for those leaving the plume exposure EPZ and it is important to prevent those from outside the area from entering the affected area, this is considered to be a critical problem that needs to be addressed," said the March 8 FEMA report.

Even if area residents were ordered only to take shelter, FEMA added, emergency workers still would have to keep traffic out of the Limerick emergency zone.

FEMA said the failure to plan for the traffic control points is a Category A deficiency.

And Limerick area local governments have yet another Category A deficiency in their emergency plans, according to FEMA, which criticized the municipalities for not naming the people who could coordinate local activities around the clock for an extended emergency.

Limerick Ecology Action, meanwhile, says naming emergency staff is not enough. LEA holds that the longest list of names is meaningless if no one on the list shows up to help.

A radiological emergency is so frightening and filled with uncertainty, says LEA, that there is no guarantee the emergency worker who has promised to help the evacuation will not abandon his commitment and run.

The unpredictable "human response" of bus and ambulance drivers, school teachers and staff, police and firefighters makes an empty effort out of Limerick emergency planning, says LEA.

C. Roy Mest, chairman of Pottstown's Goodwill Ambulance, says he cannot be sure any of his volunteers will show up to man Goodwill's five ambulances if the Limerick plant is leaking real radioactivity.

"Are they going to go in to help the person who has been exposed to the contamination," Mest asks, "or are they going to go to their families to get them to safety?"

LEA has argued that the variabilities of human response also disproves PE's claim that the entire population can be evacuated. LEA says studies show that at least 6 percent of an area's people will not leave their homes when ordered to do so.

LEA says it does not assume an emergency worker would volunteer his services during a nuclear plant emergency. But it questions whether there would be enough workers and whether those workers would have enough protection.

Both LEA and FEMA have pointed out that adequate supplies of dosimeters and potassium iodide are not yet available for emergency workers. FEMA calls the problem an important Category A deficiency.

The size of a small flashlight, a self-reading dosimeter is a sensing device with a little meter the emergency worker can read to estimate how close he might be coming to his maximum allowable radiation dose of 25 rems.

A 75-rem dose, which could cause a blood disease, is allowed if an emergency worker is sent on a life-saving mission. A 200-rem dose

could cause the worker's early death.)

FEMA said last month that the Pennsylvania Emergency Management Agency (PEMA) is negotiating to have PE provide the necessary dosimeters.

Potassium iodide tablets, called KI, fill up the emergency worker's thyroid glands. Otherwise, the thyroids would attract radioactive iodine, which a nuclear plant is likely to release during a major accident.

The state Secretary of Health would have to authorize the taking of potassium iodide, because the drug can have harmful side effects, such as goiter, iodism poisoning, small bowel lesions and a lowered resistance to infection.

FEMA reported the state Department of Health has not indicated how the potassium iodide is to be purchased for emergency workers. LEA also wants KI given to farmers who might stay behind to care for their farms.

Another aspect of Limerick emergency planning has caught FEMA's attention. The agency says it may want changes in the way emergency agencies plan to notify the public about a Limerick incident.

Current plans call for Montgomery, Chester and Berks counties alerting the 10-mile Limerick Emergency Planning Zone residents with 166 powerful sirens installed throughout the zone. If the sirens fail, local police and firefighters are to go door-to-door announcing the emergency.

The sirens would tell the zone's 110,000 Montgomery County residents to turn on KYW-1060 AM radio; the 57,000 Chester County residents, WCOJ-1420 AM; and the 18,000 Berks County residents, WHUM-1240 AM. Each station would broadcast emergency information.

Because PE originally was to use a computerized telephone system to alert the public, the siren system is not mentioned in current drafts of county emergency plans. FEMA said it wants the siren system fully explained.

FEMA also suggested that Montgomery and Chester counties drop KYW and WCOJ as the Limerick emergency radio stations. It is particularly concerned about WCOJ, which does not broadcast 24 hours a day.

The agency said Montgomery and Chester counties "should give serious consideration" to using WIP-610 AM and WMMR-93.3 FM, because they already are the primary Emergency Broadcast System stations in the Philadelphia area.

Limerick area planning efforts are being coordinated by the Montgomery County Office of Emergency Preparedness, the Chester County Department of Emergency Services and the Berks County Emergency Management Agency.

Many of the plans for area boroughs, townships and school districts have been drafted by Energy Consultants Inc., a Harrisburg-based group hired by PE to assist in emergency planning.

The municipalities and school districts are reacting to the draft plans in different ways. Some are revising them. Some are reviewing them. Some are refusing to look at them.

Once most of the Limerick area emergency planning is finished, the plans are to be submitted to FEMA, which must hold public hearings before it makes a recommendation on the adequacy of the plans.

The FEMA hearings also would consider the results of a planned July 25 "full participation exercise," the Limerick accident drill designed to test the sirens and communications involved in a Limerick emergency.

An NRC licensing board also is expected to hold hearings on the exercise. When those hearings are done, the NRC board will decide whether it is time to let Limerick Unit 1 go to full power.

Limerick drill plan under fire

By LESA J. AYERS
Reporter Staff Writer
PE asks for loan, B6

As Philadelphia Electric Co. nears the end of a three-year licensing procedure for Unit 1 of its Limerick nuclear power plant, a Pottstown-based environmental group has begun questioning PE's emergency planning procedures.

Before PE is granted an operating license, state and federal officials must be assured a response plan is either in place or well under way. But Limerick Ecology Action, led by Phyllis Zitzer of Pottstown, is wary of emergency procedures mandated by state and federal agencies.

A July 25 date has been set for the first drill to test emergency response procedures being developed to protect those living near the plant. The problem is, Zitzer said, few of the volunteers included in the plan — ambulance crews, firefighters and even part-time school bus drivers — know about it, let alone the roles they're expected to play.

Such workers are beginning to ask around, said Zitzer, adding that PE "has a lot of work to do" between now and July 25.

PE spokesman Neil McDermott attributed any local community confusion to misunderstanding of state-

Please see LIMERICK, A13

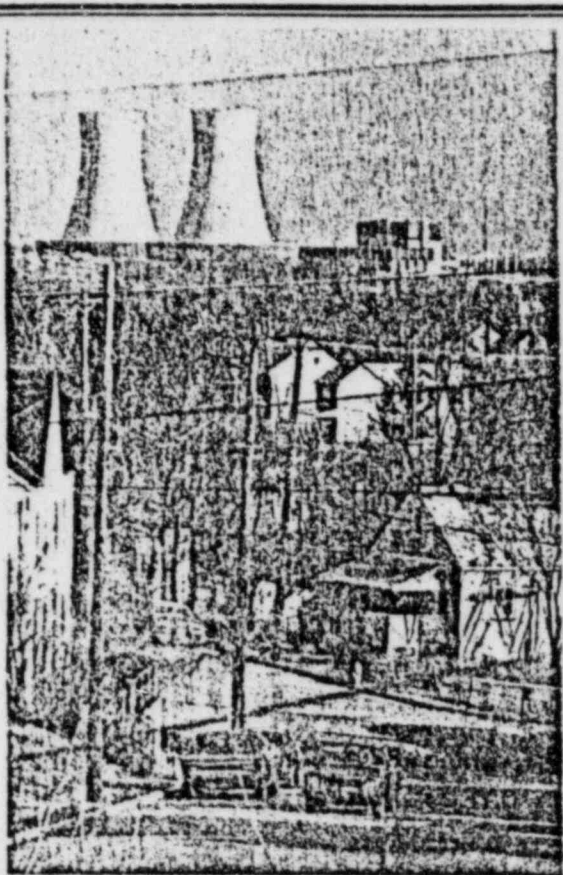


Photo by Geoffrey Patton

OVERSHADOW — The cooling towers for Philadelphia Electric's nuclear power plant, still under construction at Limerick, stand tall above Grant Ave. in Pottstown.

Group questions PE's plan for Limerick emergency drill

LIMERICK, from A1

Mandated planning requirements and planning procedures of Montgomery County's Office of Emergency Preparedness — the office responsible for training local volunteers.

On July 25, representatives from the federal Nuclear Regulatory Commission and the Pennsylvania Emergency Management Agency will "grade" the plan's emergency notification process and volunteer response.

Both county and PE planners say the volunteers should be ready in time for the drill. But Zitzer feels that in a real emergency, many local volunteers — though always ready to help in a "normal" emergency — won't be willing to respond to an area poisoned by radioactivity.

Skippack fire chief Al Risell said that so far volunteers have had no input to planning for their township. He said he does not consider a radioactive emergency "normal duty" for volunteers. Now is the time for firefighters to examine their roles "and decide whether they're going to be involved," he said.

Similarly, Skippack Community Ambulance Corps captain Greg Betz said a "census" of volunteers willing to respond to such duty has not yet been taken. So far the county has been doing all the work and has not asked for a count, Betz said.

"I'm under the impression that we would just be responsible for moving the bedridden," Betz said.

Robert Bradshaw, a planner hired by PE 18 months ago to help with the project, said that once trained, volunteers should not be as frightened by the risks.

Montgomery County emergency planning chief A. Lindley Bigalow said volunteers have always risen to the occasion of an emergency. He said educated volunteers would be more reliable than those untrained in radiological response procedures, and that training has just begun.

Harrisburg-based Energy Consultants is helping the county with the planning project; each municipality within a 10-mile radius of the plant needs its own plan.

But LEA members, having reviewed the preliminary plans, have a long list of questions. LEA recently filed with the NRC a 62-page list of "contentions" focusing on general safety questions it wants answered before the NRC grants PE an operating license.

If successful in getting the NRC's attention, Zitzer said, LEA hopes to present testimony at licensing hearings to be held later this year.

Among LEA's main concerns, Zitzer said, are that the drafts "are presented as municipal plans, as if they were formulated and supported by involved municipal officials. But many (township) supervisors don't even realize they exist, let alone are able to discuss them."

Energy Consultants, Zitzer said, "just uses a form and fills in the blanks. They're going through the motions. All the regulations say is that for a power plant to get its license, the utility must be working on a (emergency response) plan. We read the regulations differently, obviously."

Energy Consultant planner Bradshaw said the municipalities must provide for the safety of their residents, and that up to now, they haven't

been doing their job.

Bradshaw and PE emergency planner Roberta Kankus characterized the utility's role in helping draw the plans as that of "a rich uncle."

Zitzer said she doubts the planning is "rolling along well enough" for PE to assume it will get its license without major plan revisions, in part because the plans give municipalities liabilities and responsibilities that raise legal and financial concerns.

But McDermott said the state gives the municipalities those responsibilities — Limerick or no Limerick.

"There's no clear line of who's responsible for what," Zitzer said. "In some cases there's just an exchange of names and phone numbers, of statistics on fire and rescue capabilities."

"That's the reason for planning," Bradshaw said, "to get all this worked out beforehand."

But Zitzer is concerned about the tone of the proposed plans. "They're all written into the plan as if everybody's willing, trained, available and committed to responding — all without the knowledge of the people who are being named."

"It's one thing that people be informed and be willing to make commitments, but writing plans as if everyone agreed to respond and that their training has been completed is something else."

LEA retains hope that PE will cancel Unit 1.

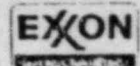
"But if Unit 1 has to operate," Zitzer said, "we want to ensure that every safety precaution that can be made will be made."

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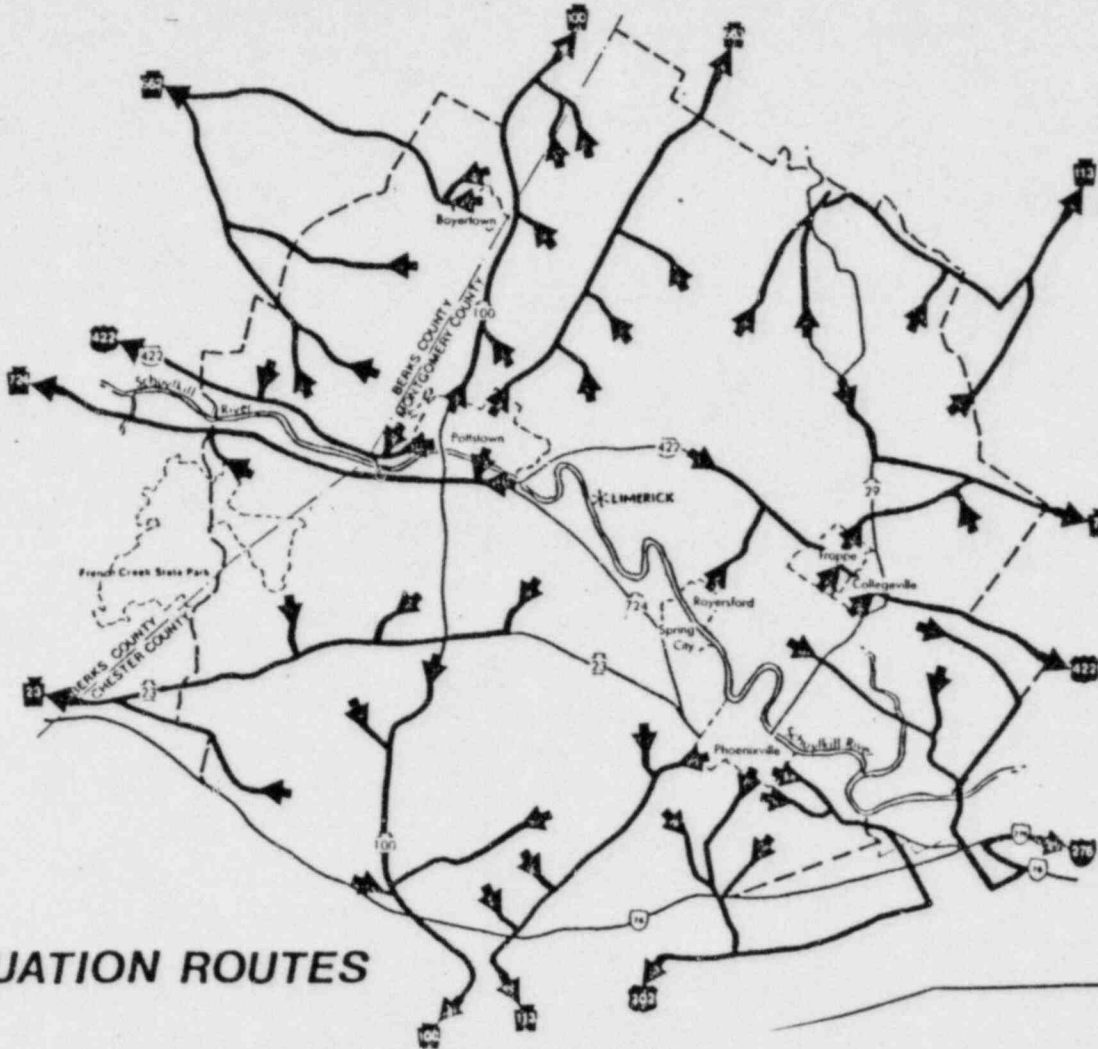
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Pottstown, Pa., Friday, June 15, 1984

Page Thirty-One



EVACUATION ROUTES

These are the proposed evacuation routes from the Limerick Nuclear Power Plant 10-mile Emergency Planning Zone (EPZ). The map was prepared by Energy Consultants Inc., the planning consultants hired by

Philadelphia Electric Co. to help local governments prepare emergency plans.

It could happen on a Tuesday

Limerick evacuation would be authorized by governor of Pa.

By FRANK WARNER
 Mercury Staff Writer

It's 10 a.m. Tuesday, June 15, 1984. The sun is shining on the 10-mile area around the Limerick nuclear power plant.

The area's 220,000 residents are going about life as usual. Some 100,000 of them are at factories and offices. Another 35,000 of them are in school. Thousands of others are in or around their homes.

Under one scenario, an unlikely accident has just occurred.

Inside the Limerick plant control room, Philadelphia Electric Co. (PE) operators have noticed that the white-hot Limerick 1 reactor core has lost its normal flow of cooling water. Its backup water injection systems also have failed.

The top of the reactor core is exposed. It's hot, and it's getting hotter. If the core's steel fuel rods melt open, highly radioactive by-products could be released into the reactor building — and possibly outside the building, too.

According to Limerick emergency plans, here's what is supposed to happen now:

- The plant superintendent immediately declares a general emergency, the fourth and most serious class (after unusual event, alert and site emergency) of nuclear plant accident.
- Within 15 minutes, the superintendent taps out three numbers on a special telephone and simultaneously calls the emergency management agencies of Pennsylvania and Montgomery, Chester and Berks counties.
- The Pennsylvania emergency agency (PEMA) contacts the federal emergency agency (FEMA) and the state Bureau of Radiation Protection. The Bureau of Radiation Protection makes sure the U.S. Nuclear Regulatory Commission and other federal agencies know what is happening.
- The county emergency directors immediately give the order to sound the 106 emergency sirens within 10 miles of Limerick. The sirens tell area residents to turn on their radios.
- KYW-1060 AM radio begins emergency broadcasting to Montgomery County residents; WCOJ-1420 AM to Chester County; and WHUM 1240 AM to Berks County.
- The governor of Pennsylvania determines the situation is serious enough to move all the people out of the 42 municipalities nearest Limerick. He orders an evacuation.
- The governor directs that state police and the National Guard make sure that traffic moves smoothly out of the Limerick area, while they allow only emergency workers back into the plume exposure zone.
- County and local officials pull out emergency plans and call on local police, firemen and other emergency workers to direct traffic and transport those who cannot drive. The emergency workers pick up dosimeters and Geiger counters.
- With radioactivity escaping from the nuclear plant, the state Secretary of Health authorizes Limerick area emergency workers to take potassium iodide (KI) pills to help prevent their thyroid glands from absorbing radioactive iodine.

HMM Associates, a consulting firm for PE, estimates that such an evacuation on a fair day would take nearly 5 hours, including the estimated 2-hour delay between the time people are told to leave and the time they actually leave their homes.

The experts disagree:

If local officials refuse to plan for Limerick, will others do it?

By FRANK WARNER
Mercury Staff Writer

Anti-nuclear groups have suggested that if local governments around the Limerick nuclear power plant do not approve emergency plans, the U.S. Nuclear Regulatory Commission will not give the plant an operating license.

But some emergency officials say the groups are mistaken. "They think that if they're not going to do the emergency plans, Philadelphia Electric's not going to get a license," says A. Lindsey Bigelow, director of the Montgomery County Office of Emergency Preparedness. "Believe me, that's not true."

The Federal Emergency Management Agency (FEMA) must find Limerick area emergency plans "adequate" to protect the public before the NRC can license the plant for full-power operations.

Bigelow says if municipalities and school districts do not come up with Limerick plans for FEMA, somebody else — possibly PE itself — will do their planning for them.

Limerick Ecology Action, an anti-nuclear group, disagrees. It holds that the NRC may soon decide that if local governments find evacuations impossible to plan for, no local nuclear plant will be allowed to operate.

And some officials of townships within the Limerick 10-mile Emergency Planning Zone are bitterly opposed to having unauthorized emergency plans forced on them.

W. Richard Whitlock, chairman of the South Coventry Township supervisors, says there is no South Coventry plan unless the township supervisors approve it.

"It will not work without our approval," says Whitlock, who refuses to plan for Limerick emergencies until the state or PE comes up with the money for the expenses involved in planning.

The South Coventry supervisors have even refused to allow PE to install Limerick warning sirens in the township. PE sued the township officials in Chester County Court, and a decision from the court is not expected to be handed down until next week.

Ralph Hippert, a deputy in the Pennsylvania Emergency Management Agency (PEMA), fueled the fires of controversy on May 9, when he told an Limerick Ecology Action meeting that PEMA would insist on local approval before sending any plans to FEMA.

"We are not going to submit the municipal plans, the school plans or the county plans to FEMA for formal submission unless they are adopted by the municipalities and the counties and the school districts," Hippert told a cheering crowd.

However, even if some municipalities refuse to approve plans, PEMA still would send FEMA any local, school and county plans that had been approved. And FEMA might consider them adequate.

"If South Coventry will not make a plan, and we have the other plans, we will submit the plans for formal review to FEMA, with a letter that we do not have a plan from South Coventry," Hippert said.

James R. Asher, chief of the FEMA Region III technological hazards branch, says if local governments leave gaping holes in plans for the Limerick 10-mile Emergency Planning Zone, PE might decide to finish the plans on its own.

"There's been recent court rulings that gave the authority to the power plant to put together a plan, and if it was a feasible plan, FEMA could approve it," says Asher.

"Then the NRC would have to make a decision whether to accept plans from the utility itself."

Montgomery County's Bigelow says local governments have nothing to gain by delaying emergency planning, when PE is so close to starting operations of the 95 percent complete Limerick Unit 1.

"If they ever get a license and we're not ready," he says, "then shame on us."

NRC studies 27 ways to Limerick meltdown

The U.S. Nuclear Regulatory Commission is considering 27 different ways the Limerick nuclear power plant could meltdown and release radioactive material into the environment outside.

This list shows how the 27 different accidents vary according to the

time it takes from the beginning of the accident until meltdown, the duration of the radioactive release, and the warning time operators have between recognizing the problem and the meltdown.

ACCIDENT NUMBER	TIME TO MELTDOWN	RELEASE DURATION	WARNING TIME
1. I-T/DW(22)	5 hours, 10 minutes	0 hours, 30 minutes	3 hours, 40 minutes
2. I-T/WW(25)	5 hours, 10 minutes	0 hours, 30 minutes	3 hours, 40 minutes
3. I-T/WW(24)	5 hours, 10 minutes	0 hours, 30 minutes	3 hours, 40 minutes
4. I-T/SE(14)	2 hours, 24 minutes	0 hours, 30 minutes	1 hour, 0 minutes
5. I-T/HB(20)	2 hours, 24 minutes	0 hours, 30 minutes	1 hour, 0 minutes
6. I-T/LGT(26)	1 hour, 30 minutes	3 hours, 24 minutes	None
7. I-T/LGT(18)	1 hour, 30 minutes	3 hours, 24 minutes	None
8. II-T/WW(8)	24 hours, 55 minutes	3 hours, 55 minutes	5 hours, 19 minutes
9. II-T/SE(14)	27 hours, 0 minutes	0 hours, 30 minutes	7 hours, 0 minutes
10. III-T/WW(10)	2 hours, 40 minutes	1 hour, 23 minutes	2 hours, 10 minutes
11. III-T/SE(5)	2 hours, 0 minutes	0 hours, 30 minutes	1 hour, 0 minutes
12. III-T/HB(20)	2 hours, 0 minutes	0 hours, 40 minutes	1 hour, 0 minutes
13. III-T/LGT(26)	0 hours, 30 minutes	3 hours, 40 minutes	None
14. III-T/LGT(18)	0 hours, 30 minutes	3 hours, 30 minutes	None
15. IV-T/DW(2)	1 hour, 8 minutes	3 hours, 20 minutes	0 hours, 30 minutes
16. IV-T/WW(4)	1 hour, 8 minutes	3 hours, 20 minutes	0 hours, 30 minutes
17. IV-T/WW(3)	1 hour, 8 minutes	3 hours, 20 minutes	0 hours, 30 minutes
18. IV-T/SE(5)	2 hours, 0 minutes	0 hours, 30 minutes	1 hour, 30 minutes
19. I-S/DW(23)	5 hours, 7 minutes	0 hours, 30 minutes	3 hours, 46 minutes
20. IV-A/DW(1)	1 hour, 10 minutes	3 hours, 0 minutes	0 hours, 30 minutes
21. IS-C/DW(13)	0 hours, 22 minutes	3 hours, 10 minutes	0 hours, 22 minutes
22. IS-C/SE(14)	1 hour, 18 minutes	0 hours, 30 minutes	1 hour, 18 minutes
23. IS-C/DW(12)	1 hour, 28 minutes	2 hours, 54 minutes	1 hour, 28 minutes
24. IS-C/SE(14)	2 hours, 18 minutes	0 hours, 30 minutes	2 hours, 18 minutes
25. S-H20/WW(11)	2 hours, 40 minutes	4 hours, 34 minutes	2 hours, 40 minutes
26. S-H/SE(5)	3 hours, 30 minutes	0 hours, 30 minutes	3 hours, 30 minutes
27. S-H20/WW(9)	2 hours, 50 minutes	3 hours, 33 minutes	2 hours, 50 minutes

Limerick low-power tests likely before final evacuation plans

The U.S. Nuclear Regulatory Commission may give the Limerick Unit 1 power plant a license to start a low-power nuclear chain reaction by Sept. 15, as scheduled, even if Limerick area evacuation plans are not yet approved.

But full-power testing and operations of the Limerick reactor may be delayed by evacuation planning and a recent court decision.

NRC spokesman Brian Norris said the NRC may allow a nuclear plant to go up to 5 percent power without approved off-site emergency plans. Beyond that point, emergency plans must be in place and endorsed as "adequate."

The Federal Emergency Management Agency (FEMA) is to determine whether local, state and federal authorities are prepared adequately to protect the public in case of an accident at the Limerick plant.

The NRC then has to act on FEMA's recommendation in deciding whether to issue a full-power license. Philadelphia Electric Co. plans to begin full-power operations of Limerick Unit 1 next April.

FEMA's Limerick recommendation will be based in part on a scheduled July 25 "full participation exercise" — a Limerick accident drill during which sirens and communications procedures will be tested.

The NRC's Norris said a May 25 federal appeals court decision requiring the NRC to allow public hearings after a nuclear accident drill has no bearing on when the NRC may allow low-power testing.

However, the court ruling may delay full-power testing at some plants, including Limerick, where PE plans full-power testing in late November or

early December.

If groups request NRC hearings to discuss emergency plans after the July 25 Limerick exercise, the licensing process may be prolonged.

The 2-1 court decision found the NRC was wrong in forcing low emergency plan exercises after all public hearings were concluded. The court ruled the public must have a chance to debate the results of an exercise.

PE spokesman Ron Harper said the extra round of hearings "means a triplicate of effort, or at least duplicate."

The NRC licensing board already has emergency planning hearings scheduled before the Limerick exercise and FEMA has its own hearings scheduled after the exercise.

"Now the NRC is going to hold another public hearing," said Harper. "Another layer of paperwork and procedure can definitely add to time lag."

The appeals court ruled the hearings must be completed before the NRC issues a "final operating license" for any nuclear plant.

The NRC has not yet ruled on whether the lengthy nuclear exercise hearings could postpone full-power testing of a nuclear plant. A delay in full-power testing might delay the start of full-power commercial operations.

PE has said delays can add up to \$1 million a day to the cost of building the Limerick plant. The current \$6.7 billion Limerick cost estimate for two reactor units is 18 times the original 1969 price tag.

For Limerick, a plan to move 170,000 to safety

By Sara Schwieder
Inquirer Staff Writer

Philadelphia Electric Co. paid its consultants \$2 million to calculate the likelihood that the Limerick nuclear power plant might suddenly go haywire and cough radiation over millions of its neighbors.

The consultants set to work. They compiled thousands of pages of information, calculations, charts and maps; dreamed up complicated accident scenarios and an evacuation plan for the more than 170,000 people who would have to be relocated during a serious accident; tried to imagine whether, during a meltdown, nuclear fuel would eat through the floor or simply flow under the door, and calculated such esoterica as how much radiation a human might inhale during an "undesired event," as they delicately termed an accident.

When the report was completed March 17, the consultants found that the risk to the public would be negli-

(See LIMERICK on 8-A)

Inquirer 4/6/81

LIMERICK, from 1-A

gible from the half-completed Montgomery County plant, which is scheduled to begin operation in 1985. They contended that Limerick, 27 miles from Center City and surrounded by the third-largest population of any nuclear reactor in the United States, is safer than the average reactor. They also calculated that the chance of a core meltdown accident that would produce one or more long-term cancers was one in 100,000 population a year.

But then, they left out quite a few possibilities that might trigger an accident, such as fire, sabotage, flood, tornado, hurricane, earthquake or airplane crash. They also assumed that the plant would operate as it was designed to, and that the control-room operator would not halt emergency systems once the systems had flipped on automatically during the early stages of an accident — something that did occur during the accident at Three Mile Island on March 28, 1979.

And then there was the matter of the plant site — 600 acres on the Schuylkill in Limerick Township, Montgomery County — that has proved the most difficult aspect of the plan for PE to defend and that has been cited by federal officials as the plant's chief shortcoming. But the report tries gamely to defend the site and even rhapsodizes about one

advantage of an inland location: The plant would not be vulnerable to tsunamis (great oceanic waves).

The PE consultants did not do all this work for fun. They did it because the federal Nuclear Regulatory Commission (NRC) would not consider a license without it. It was a report ordered almost a year ago because of concern for the large population surrounding the plant. Limerick opponents still are not satisfied.

Before the report was even officially finished, a spokesman for the Keystone Alliance, an anti-nuclear group, was attacking it on grounds that it minimized the risks by using incorrect assumptions and mathematical gymnastics, a charge vigorously disputed by one of the report's authors.

Employees of several companies helped with the report, including PE, Science Applications Inc. of Belair, Md.; General Electric Co., the builder of the reactor, and NUS Corp. of Rockville, Md. It was completed March 17 and submitted to the NRC along with PE's application for an operating license.

Some of the report's other findings include:

- If a nuclear accident did occur at the plant in Limerick Township, the prevailing winds almost always blow directly toward Philadelphia, which would tend to spread radiation over the largest population in the 50-mile radius of the plant.

- In a preliminary evacuation plan submitted along with the risk-assessment study, PE listed 15 nursing homes, prisons and hospitals within 10 miles of the plant and a population of 173,704 that would have to be evacuated during a serious accident. The maximum estimated time it would take to evacuate — which the company called "conservative" and which local officials termed "far too optimistic" — was 11 hours, 15 minutes. Moving vans would haul out bedridden patients at some institutions.

- The most likely type of accident, though improbable, would involve a core meltdown in which the huge steel-and-concrete containment building where the reactor is housed would slowly build up pressure until it failed, like a pressure cooker bursting its top.

There was a section on the "health effects" of such an accident, in which the radiation doses to bone marrow within a half-mile of the reactor were listed, but the explanation was so vague in the text, and the figures on an accompanying chart were so tiny and so technical, that PE officials could not figure out what the section meant.

Still, in another place, the report did address health effects. It calculated, based partly on studies of Japanese survivors of the atomic bombs dropped at the end of World War II, the sort of latent cancers that a severe radiation release might produce.

"Except for a few individuals who might be irradiated by the passing cloud very close to the reactor, the dose rates to the whole body would be less than one rem per day which, with respect to latent cancer induction, is a low dose rate," the study reads. One rem equals 1,000 millirems; an average American's yearly dosage from normal background sources is about 120 millirems.

After the statisticians compared the dosages between the Japanese bomb victims and hypothetical vic-

The PE report tries gamely to defend the Limerick site and even rhapsodizes about one advantage of an inland location: The plant would not be vulnerable to tsunamis (great oceanic waves).

tims of a nuclear reactor accident, the estimates showed very little health effect on the public.

Doctors found no observable effect in people who had received a continuing dose of one rem per day to the whole body when compared with a control population that had received no extraordinary radiation.

Even very high doses could be reduced by quick evacuation and early warnings to the public to take shelter, the report said. It would also be affected by the number of people in the path of the radiation-carrying plume.

To determine the most likely course the radiation would tend to take, the report cited actual wind-direction statistics at two heights over the plant from 1972 to 1976. The calculations show the wind almost always at its strongest blowing toward Philadelphia in every season. About seven million people live within 30 miles of the plant, in and around the city.

Meanwhile, the report also includes emergency procedures that would be used to deal with an accident, an accident classification system, charts with lists of agencies to notify and a separate preliminary emergency preparedness study.

The emergency preparedness study lists 15 hospitals, nursing homes and prisons within a 10-mile radius that would be evacuated in the event of a serious accident.

Those institutions include Pennhurst State Hospital, with 1,000 mentally handicapped residents, and Phoenixville Hospital, plus four nursing homes — Coventry Manor, Mary Hill Rest Haven, Phoenixville Manor and Manatawny Manor, all in Chester County.

In Montgomery County, hospitals include Pottstown Memorial Medical Center, with 275 beds, which is closest at 1.8 miles from the plant, and Eagleville Hospital and Rehabilitation Center; plus nursing homes including the Leader Nursing and Rehabilitation Center, Manatawny Manor and Residential Care, the Frederick Mennonite Home, and the 600-patient Montgomery County Geriatric and Rehabilitation Center. Graterford Prison, a maximum-security institution with 1,800 inmates, is also in Montgomery County. In Berks County, there are two nursing homes — the Douglassville Home and the River Road Home.

The report notes that the crucial time factor for institutions is the time needed to prepare the residents. At the Pottstown Hospital, officials estimated that it would take three to nine hours to remove patients, assuming those on respirators or orthopedic cases could be picked up by a moving van. They and other institutions also assumed that, during an accident, the entire staff would arrive to help.

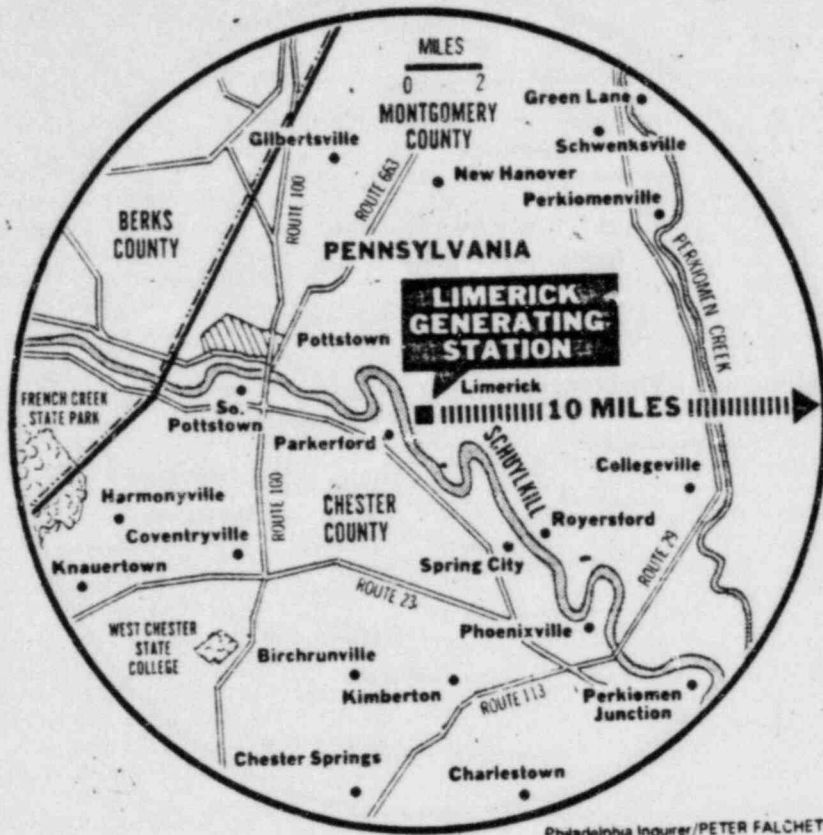
The state corrections official estimated total evacuation time for Graterford Prison at five hours, 30 minutes in daytime, assuming the availability of 90 buses. The inmates would not be moved at all during the night, he said.

The rest of the 173,000 residents inside the 10-mile limit would move, too, mostly by private cars with those nearest the plant going first, in two hours or so, and those on the outer rim leaving within 11 hours, 15 minutes.

Though the emergency plan is still in its early stages — it does not have to be completed until the plant is ready for operation — it drew a cool reception from local officials.

Timothy R. S. Campbell of the Chester County Department of Emergency Services wrote that PE had not taken into account poor roads, breakdowns on the roads and severe snow and ice storms.

"I feel that my best comment is that it is overall far too optimistic," he wrote of the plan.



Philadelphia Inquirer/PETER FALCHETTA

One factor on which the emergency preparation hinges is whether the accident develops slowly, providing time for people to prepare, or whether it erupts so suddenly that immediate action is necessary, the report notes.

The consultants studied various types of accidents, and concluded if one ever occurred, it would probably develop slowly and might involve a

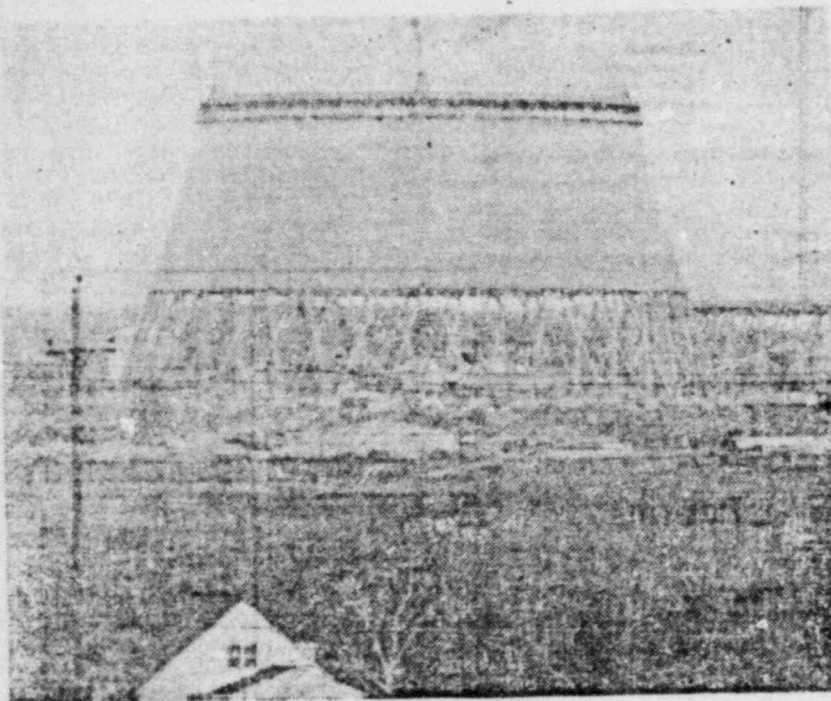
core melt, plus overpressurization of the containment building. Other accidents that seemed to have the best chances of occurring involved a steam explosion in the reactor vessel and a loss of power from the site, which would interfere with instruments controlling the reactor and various kinds of loss of reactor coolant, the report theorized.

It said the public faced little chance of danger from other sources of radioactivity at the power plant, such as shipping casks or leaks of liquid waste.

But the company does not expect any of the things that their consultants dreamed up in the way of accidents to happen in real life — only in its computers.

"Because of the 'defense in depth' concept used in nuclear plant design, it is highly probable that a given accident sequence will be terminated before it can affect the public," the report says.

And it says, "While risk analysts cannot devise means to eliminate all risks, they can advise on how to best allocate safety resources to minimize societal risk. People must invariably assume or endure risks and hazards of some amount, and thus it is important that information be made available so that intelligent choices can



Philadelphia Inquirer / ROBERT L. MOONEY

A cooling tower is built at the PE plant in Limerick Township

Limerick: too close for comfort?

By CRAIG R. McCOY
Reporter Staff Writer
Part One

abridged from The Reporter, Lansdale, Pa., Jan. 23 & 24, 1980

It's not surprising that Thomas M. Gerusky, director of the state's Bureau of Radiation Protection, still swears by the view he held eight years ago.

The official has not wavered in his opinion that the nuclear power plant under construction in Limerick Township, less than 30 miles from Philadelphia, is at a poor site.

"It would never be licensed in that location if we were to start over," said Gerusky, who criticized the plant's site at a 1972 hearing of a board of the old Atomic Energy Commission (AEC).

What is surprising, however, is that the federal bureaucracy which once found Gerusky unpersuasive has now come around to his position. In a series of recent interviews, officials of the U.S. Nuclear Regulatory Commission (NRC), which took over from the AEC in 1975, agreed it's unlikely that Limerick today would win approval.

Although the owners of the \$3.1 billion,

twin-reactor facility, the Philadelphia Electric (PE) Co., asserts that the site near Pottstown is above reproach, federal regulators now say Limerick appears to be placed too close to too many people.

THEIR STATEMENTS come as part of a crescendo of criticism in recent weeks about the locations of several of the nation's 111 operating or planned nuclear reactors, and warnings about the difficulty of emergency planning near almost all of them.

That criticism, coming from the NRC itself, other federal agencies, academic experts, congressional committees and grass-roots anti-nuclear groups, began even before the accident last March at the Three Mile Island plant in Middletown, about 30 miles from Harrisburg.

But Three Mile Island profoundly shocked the public, elected officials, the regulatory apparatus and the nuclear industry itself. It led the President's Commission on Three

Mile Island to warn against placing plants in densely populated areas, and added urgency to a previously begun NRC review of its policy toward site approvals.

The most recent salvo in the debate was fired late last month when The New York Times printed leaked sections of a consultant's report to the NRC that called for "serious consideration" of the shutdown of any plant whose operator could not develop plans to evacuate everyone within 30 miles of where an accident took place.

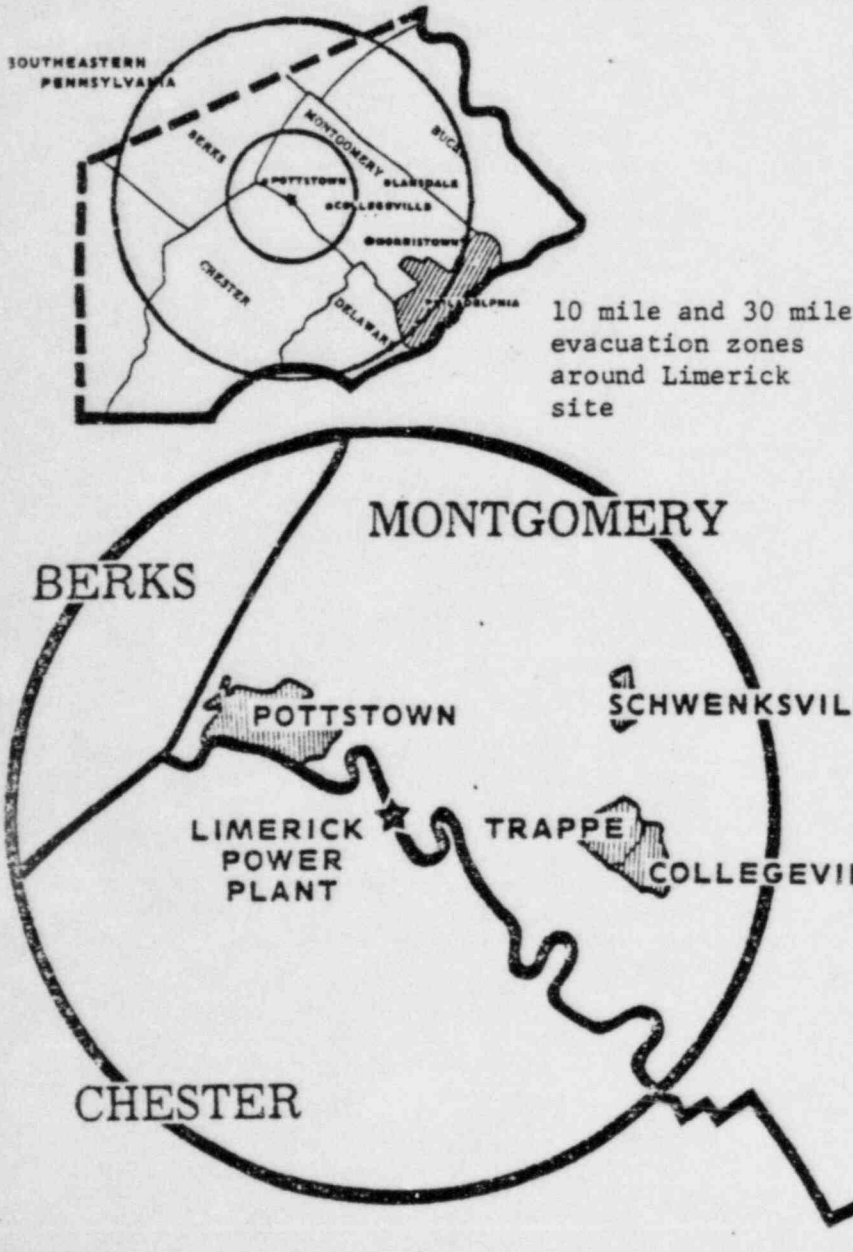
By that standard, planning for Limerick may be one of the toughest tasks in the nation. According to the U.S. Census, 3.8 million people live within 30 miles of the plant.

Only the operating Indian Point plant in Buchanan, N.Y., 40 miles from Manhattan, has more people living within that radius. That plant, which has slightly less than 4 million people within 30 miles, has become the focal point for much of the controversy over plant locations.

But the storm of debate will eventually move south to Limerick. Push will come to shove on the day the NRC holds its first hearing on PE's request for an operating license for its completed plant.

What follows is a look at the policies that led to the granting of the go-sign for Limerick, and an assessment of how the nation's attitude toward nuclear power — and the regulatory climate — has changed since that time.

Tomorrow, The Reporter will examine the plant's chances of getting an operating license, and take a look at the special difficulties that complicate emergency planning about the site.



PE PUBLICLY unveiled its plans for Limerick in 1969. It was a time when the region's economy was still flush from the growth of the '60s and the sustained spending of the Vietnam years.

Demand for electricity was booming, and there seemed no reason why that demand should not keep climbing in years to come. The company planners who envisioned Limerick, and selected its 590-acre site on the banks of the Schuylkill River, saw the facility as a way to meet that demand.

The utility moved onto the site in 1970 — even before hearings on its construction permit had begun — and built a work force of 500.

The company took the step, spokesman Ronald Harper noted in a recent interview, after a preliminary AEC review found the site acceptable.

The utility has consistently maintained that delays in construction would needlessly inflate the project's cost — pegged at \$480 million in 1971 — and limit its ability to meet the region's need for power in the future.

Typical was a PE warning in 1972 that a slowdown in construction could mean the firm would find itself five years later with less than the 13 percent reserve generating capacity that the Federal Power Commission called essential as a cushion for a well-run utility.

That dire prophecy proved false. The utility actually found itself with a reported reserve capacity of about 33 percent in 1977 — without Limerick. Demand for electricity is now growing at about 2 percent a year, well below the 6 to 7 percent rate predicted by the firm at the start of the decade.

What the company had not bargained on was that energy consumption in this region steadied about 1973. The stabilization in demand, which confounded PE officials and other experts, forced the company to delay voluntarily its scheduled starting date for Limerick.

The company originally hoped to put the facility "on line" in 1975. Due to the series of hearings on the plant, a large number of court actions and company delays, current plans call for one reactor to start generating electricity in 1985 and the other in 1987.

PE recently asked the Commonwealth for permission to move those starting dates up two years, on grounds that energy demand was picking up again, partially due to the loss of Three Mile Island's output. The state has not ruled on the request.)

BUT THE company's aggressive attitude toward construction — in the project's early days at least — was not without its critics.

One such critic was Republican U.S. Rep. Lawrence Coughlin, in whose 13th District Limerick was prior to a reapportionment. Coughlin faulted the utility for its start on preliminary site work before hearings had begun on the construction permit.

The utility moved its crews onto the site, it should be noted, under AEC rules that permitted early jumps on construction, provided work was limited to excavations or laying of sewer and electrical lines.

And the company called off its men in 1972, shortly before full hearings on the site began and just as it had reached the point where above-ground structures were called for.

In an argument certain to surface again when hearings are held on the completed plant's operating license, Coughlin charged that PE's management has presented regulators with a fait accompli.

Permitting non-nuclear work at the site, Coughlin said shortly after Limerick won its construction permit, "affords the unfair argument that the public utility has invested considerable sums of money and thus should be permitted to install nuclear facilities.

"Yet this (was) part of the board's reasoning that the Limerick site meets the test for approval . . ."

Not that it's likely to be any solace to Coughlin, but the atomic energy oversight agency did impose stricter controls on early starts in 1972. But that policy shift came too late to affect Limerick. . . .

THE PRELIMINARY sparring before the AEC's Atomic Safety and Licensing Board began in 1971. When the hearings concluded in 1974, they had won the distinction of being the longest such proceedings ever held in the history of commercial nuclear power.

Given the length of the hearings, it would seem logical they explored every conceivable aspect of the plant's operation, every conceivable form of hypothetical accident. That was not the case.

The only breakdowns that could be considering during AEC hearings were ones called "design-basis" accidents — defined as malfunctions that would release radiation that the plant's protective systems could either contain or drastically limit.

More serious occurrences, which the jargon of the field dubbed "Class Nine accidents," were seen as so unlikely that there was no point in planning for them or even discussing them.

In the years before Three Mile Island, the conventional wisdom was that Three Mile Island could not happen.

That's not to say that the old AEC policies completely discounted the risk of placing sites in densely populated areas.

Reactor sites did have to meet rules about adjacent population in the early '70s. But when PE asked to build Limerick in 1971, regulators were bound by a set of standards that officials now believe are inadequate.

A special regulatory commission task force on plant siting last August — five months after the Three Mile Island emergency — called for the rules to be junked. But they remain in effect today, and were the law of the land nine years ago.

These regulations were written in 1961, at a time when the nation's handful of reactors were small units with a peak generating capacity of perhaps 300 megawatts.

Limerick has a planned output of 2,110 megawatts.

THE RULES did say a utility's proposed site could be rejected if the plant would be placed in a too densely populated area. But, in the words of the 'siting' task force, that goal, in reality, was subject to "some erosion."

Here are the two key tests that a site had to pass to win approval, and here's how policies limiting nearby population tended to get eroded:

Test One: The utility had to map out a "low population zone" about its proposed site. No numerical limits were put on the number of people who could live within this zone. Nor did it have to be any particular size. But the utility did have to prove it could be easily evacuated.

No small task, one might imagine, when picking a site such as Limerick. In 1970, according to the U.S. Census, about 150,000 people lived within 10 miles of the reactor. And the number jumped to 780,000 if the radius were extended to 20 miles.

But the job becomes easier, obviously, the smaller the zone. And the size of the low population zone proposed by PE was small indeed.

According to the utility's 1971 safety report to the AEC, the zone subject to scrutiny needed extend only 1.2 miles from the reactor. The census found only 5,000 residents within that radius.

The utility was able to focus attention on such a small zone because of those 1961 regulations drawn up for plants with limited generating capacity.

The regulations, based on the premise that only a "design-basis" accident could happen, permitted plant operators to continually narrow the size of the zone, provided the reactor was equipped with "compensating engineering features."

Such safeguards, such as an extra-thick concrete around the reactor's radioactive core, could be plugged into a complex formula that produced the length of the low-population zone right down to the foot. Other factors in the computation were the intensity of the plant's radioactive material and the prevailing weather in the area.

PE also asserted at the hearings that the nearby area could be safely evacuated even if its population grew from its few thousand to 100,000.

"They evacuate 100,000 people from an Army-Navy game in Philadelphia and we could too," a utility vice president told the hearing panel.

The firm's witness said that any future population growth near Limerick would be accompanied by an equal growth in the area's street and highway network. "If they can get in there to live there, they can get out," said the spokesman.

Test Two: Even if a site's surrounding zone were acceptable, the regulations called for rejection if a reactor was too near a "densely populated center." That was defined as a place with more than 25,000 residents.

But what was "too near"?

Here's how the regulations spelled that out: A site was unacceptable if an adjacent town was closer than the number 1-and-1/3 multiplied by the length of the low population zone.

Pottstown, which had 25,325 residents in 1970, fit the definition of a "densely-populated center." It is 1.7 miles from the reactor.

Let's do the calculation: 1-and-1/3 multiplied times 1.27 — which is the exact length of the planning zone about Limerick — equals 1.7.

Pottstown was exactly far enough away for Limerick to pass both tests. And the plant won a construction license.

IF IT all sounds complicated, that's because it is. But the bottom line of the regulations was that almost any reactor could win approval, no matter what the location.

Limerick may have shaved it close to Pottstown, according to officials of the Nuclear Regulatory Commission, but so did several of the nation's plants located in densely populated areas.

"I don't think it (density problem) is that common," said official Stephen N. Salomon, who works with the commission division that helps states prepare for emergencies. "But a lot of them went right up against the legal requirements."

Another senior official, Daniel R. Muller, who headed the task force that studied the 1961 regulations, said the Limerick-Pottstown relationship was an example of why the policy needed to be overhauled.

"You've hit on exactly what the problem was that we perceived with siting under the old policy," said Muller, deputy director of the agency's division of site safety and environmental analysis.

"It was designed to keep plants away from populated zones," he said. "It was designed to keep plants away from people and it didn't quite do the job that the framers anticipated."

In taking that position, agency officials have adopted a stand long held by anti-nuclear activists, such as former Penn State University professor Judith Johnsrud.

"The whole thing is so sloppy and open to interpretation and the juggling of statistics," according to Johnsrud, an expert in urban demographics, who criticized Limerick's proposed zone at one of the hearings eight years ago.

"We have always said that these (regulations) were absolutely meaningless in terms of providing safety to the public," . . .

Muller's task force called for replacement of the 1962 regulations by a requirement that all future plants be surrounded by "emergency planning zones" of about 10 miles.

A reactor would be blocked, the report recommended, if the number of people within that zone exceeded a fixed number.

The report did not come up with a hard figure as a lid for allowable population within the zone. But the study did make some tentative suggestions — and the Limerick plant's adjacent population is far greater than what is proposed.

The report is now before the five-commission board in Washington, D.C., for possible adoption. And the \$3.1 billion question for Limerick is whether the board will want the rules applied to plants under construction.

NRC official Salomon put it this way: "If you do tighten up," he said, "what do you do with the old plants that got through before you tightened?"

(Part Two)

A work force of about 1,500 now swarms about the half-completed Philadelphia Electric (PE) nuclear power plant in rural Limerick Township, sealing off its twin cooling towers and outfitting its reactors' containment shell.

At another location, about seven miles from the plant site, a much smaller crew is also at work.

Only eight people labor here, and in a structure infinitesimally smaller and less expensive than the \$3.1 billion Limerick nuclear facility.

But the job entrusted to this group led by Samuel Ely III, director of Montgomery County's office of emergency preparedness, could determine whether the nuclear plant closes before it ever opens.

Ely's staff has the task of drawing up, publicizing and testing emergency plans that would kick into action should an accident happen at Limerick. Those plans must cover the gamut from an accident so sudden that nearby residents would have time only to take shelter in their homes to one slow-breaking enough to allow evacuation.

If the plans meet muster, they could play a key role in PE's bid to win a federal license to operate its twin-reactor plant. The firm hopes to have one reactor ready to operate by 1981 and the other by 1983.

If emergency measures are judged to be difficult or impossible to carry out, that could mean federal officials could refuse Limerick a license, rendering the plant a billion-dollar white elephant.

Whether Limerick is to operate will be determined after a broad debate over public policy. It will have many participants, ranging from PE executives to legislators, from top-level regulators in Washington, D.C., to anti-nuclear activists in the village of Summertown.

Although Ely's role in the debate may be crucial, he does not intend to take part in the argument. He sees himself simply as a planner.

"I live within two miles of the plant. I'm not going to say whether it should or shouldn't be there," the 53-year-old official said recently in an interview at his new bunker-like underground command center near Collegeville.

"The very fact of the matter is that it is there. And it's my job to develop emergency planning to save people."

BY ANY measure, Ely has a tough task in front of him. The Limerick site is one of the most densely populated such locations in the country.

Among the nation's 111 sites for planned or operating nuclear plants, Limerick is among the top five in terms of nearby population. It has 65,000 adjacent residents at a five-mile radius, 150,000 at 10 miles, 775,000 at 20 miles and 3.8 million at 30 miles.

Although the locations of several of the nation's planned or operating reactors have provoked concern, one plant in particular stands as a near-twin to Limerick.

That plant is the operating Indian Point station in Buchanan, N.Y., 40 miles from Manhattan. And officials of the federal Nuclear Regulatory Commission (NRC), which oversees atomic energy, say that as Indian Point goes, so goes Limerick.

The furor about Indian Point has grown so intense that a senior NRC official told reporters last month the plant should be shut down or "derated" — reduced in power output — within about a year's time if the site can't be made safer.

The official, Robert Ryan, director of the agency's Office of State Programs, told The Reporter in a recent interview that the major concern at Indian Point is that a fast-breaking accident would not give nearby residents enough time to get away.

"The problem with evacuations is time," said Ryan, whose office advises state officials on emergency planning. "I could evacuate New York City if I had the authority and the time. And I could — it might take a year, but I could do it."

But the problem, according to Ryan, is that the latest federal studies now say a serious nuclear accident, while still viewed as an unlikely event, could spread radiation over a 10-mile radius in only a half-hour.

He said federal officials now are involved in two parallel efforts to improve the Indian Point plant. One, he said, is a review of the engineering safeguards at the reactor itself and the other is a hard-nosed analysis of whether an evacuation is indeed feasible.

He said the agency hopes to come up with ways to "buy time" should an accident take place. He said options include installation of a so-called "core-catcher" under the reactor — a device akin to a firewall that would slow the escape of radiation — or the construction of a \$600 million pit around the reactor that also would slow escaping radiation.

The analysis of evacuation strategies includes a detailed look at where population is concentrated around the plant, the natural shape of the land nearby and prevailing weather patterns. Such information, officials believe, can be fed into a computer that will forecast precisely the path and intensity of radiation in any accident.

Ryan said emergency planners need to be equipped with tools at least as sophisticated as the plants they must watch.

"The technologies don't match," Ryan said. "It's like dragging up a space rocket to a launcher with an ox cart."

Ryan said Indian Point posed a tough planning problem, not only because of the sheer numbers of adjacent residents, but also because of some special institutions that lie nearby. He said these include the former Sing Sing Prison, now renamed but still home for 2,500 inmates, and several state parks, which might hold more than 100,000 vacationers on a hot, summer day.

Will the engineering changes, if instituted, work? Will planners decide the area can safely take a nuclear accident? Will Indian Point continue operating, will it be reduced in power, or will it be shut down?

"It's too close to tell," Ryan said. "I don't know."

ALTHOUGH SAM Ely knows the problems that confront him at Limerick are sizable, he thinks he can develop a workable plan.

But the real burden of carrying out an evacuation — or of issuing warnings to stay inside — will fall upon the hundreds of local officials and volunteers, from township supervisors to firemen, who must deal with the ordinary public.

And the not-so-ordinary public. Ely estimates he has at least 800 bedridden people in the plant's vicinity. Those people, Ely notes, would have to be shuttled out of the area by the county's 88 volunteer-staffed ambulances.

He added, with a bit of a gallows smile, that his office has a list of undertakers who can supply about 40 hearses to move the sick, aged or handicapped.

Any evacuation must also contend with the state prison at Graterford, seven miles from the reactor. The maximum-security prison holds 1,650 inmates, who, as NRC official Ryan observed in connection with the old Sing Sing's prisoners, did not receive potential exposure to fallout as part of their sentence.

The county official last October began his first round of meetings with PE executives and planners from the neighboring counties. "Out of those meetings came some primitive but essential starting plans," he said. But the job is far from over.

Still to be done, he said, is development and testing of a system to alert nearby residents. He has yet to meet with the elected officials from the 13 township and four boroughs that lie within 10 miles of the plant.

The first stop, he said, will be Pottstown, whose 25,000 residents form the most concentrated pocket of population within the zone.

Yet another meeting must be held with mass transit authorities and school officials, to line up use of trains and buses to move people.

At least one key part of Ely's task — finding temporary shelter for evacuees — is already partially complete. When an evacuation of residents near the Three Mile Island plant appeared imminent after last March's accident, Ely's staff received pledges from various county school districts that about 50 buildings could be used to house Dauphin County residents.

Those pledges remain in force for Limerick, according to the county official, giving him a bottom-line supply of shelter for perhaps 20,000 people.

MUCH REMAINS to be done: the job ahead is immense. But what makes Ely's task particularly difficult is the tremendous state of uncertainty that now prevails about nuclear power and its hazards.

The job's difficulty is further compounded because planners have had little experience with large-scale evacuations and even less with nuclear emergencies.

Experts are buoyed by the success of last November's mass evacuation in a suburb of Toronto, an exodus that saw more than 220,000 people in a 60-square-mile area flee without mishap from a potentially deadly chemical-train derailment.

But the Three Mile Island experience was less heartening.

Although pregnant women were advised to leave the vicinity of the plant, no mass evacuation was conducted at Three Mile Island. But Thomas M. Gerusky, director of the state Bureau of Radiation Protection, said evacuation plans for the area would not have worked had they been tried.

And Montgomery County's Ely said his problems were more intense than those faced by his counterparts in Dauphin County last March.

"My problem is that I have a much larger population to move than they did at Three Mile Island ... That was primarily a farming community," he said.

It was only last year that the federal government issued a report giving state officials like Ely guidance about exactly what kind of potential nuclear accident they should plan for. The report came after local officials complained they had no ground rules to follow about how long an accident might last and how far dangerous radiation might spread.

Ely is now following the report's recommendations, which call for plans for evacuating people within 10 miles of the plant. (Previously, planning had been for a five-mile zone or less.)

The report said as little time as a half-hour could pass between the moment when a plant malfunctioned and radiation was released, and that fall-out could be generated for as little as a half-hour and as long as a several days.

The report also said that planners should define a 50-mile "food pathway zone" to ensure that contaminated food — especially milk — would not reach the Public. Ely also is meeting this requirement.

But another federal study, according to a draft report obtained by The New York Times last month, calls for evacuation plans at distances as far as 30 miles from a plant.

This study, under preparation by an outside consultant to the regulatory commission, reportedly calls for "serious consideration" of shutting any of the nation's plants for which such an evacuation can't be done.

Many experts, including civil defense officials in Pennsylvania, have derided the proposed 30-mile zone as unworkable and unnecessary. But its very suggestion demonstrates how uncertain the field of emergency planning remains.

The new commission stance on emergency planning has drawn the ire of the nuclear industry.

Atomic Industrial Forum spokesman Stetson said his group feels the commission is attempting to unfairly expand its power.

"The Nuclear Regulatory Commission is attempting to use the licensee — the utility — to gain leverage with the localities, such as the county and state, over which it has no authority," said Stetson.

Stetson's view has its root in the fact that the commission now has no power to compel states to engage in emergency planning. It can make suggestions, set standards, and hopes municipalities will seek its approval, but it cannot accept or reject a plan.

The NRC's Ryan frankly said his authority is limited to "persuasion, cajolery ... and beeswax."

The agency has tried to get around this roadblock by creation of a policy called "concurrence." Translated, that means the agency hopes states will submit plans with which it can "concur."

Only 12 of the 42 states with operating plants have achieved concurrence. Pennsylvania is not one of them, though state officials expect to join the group shortly.

BUT PERHAPS, for Limerick, the most serious new regulatory development on the horizon is a proposed NRC overhaul of its policy toward site approvals.

Agency officials last August proposed an entirely new set of rules that would govern location of nuclear plants.

The agency staffers who developed the new rules say they deliberately made no recommendations about applying the standards retroactively. But at least one of the five NRC commissioners — who ultimately make policy — has said he will consider imposing them on operating plants or those under construction.

"I would look at all the plants from the point of view of these new standards," NRC Commissioner Victor Gilinsky recently told a reporter for the Washington, D.C.-based States News Service. "The less that has been done to them (plants under construction), the lower the threshold for changing our mind."

The rub for Limerick is that it would not qualify as an acceptable site under the new siting policy as sketched out.

The new policy calls for rejection of a plant site if its adjacent population exceeds certain criteria. Here's how the rules would work for Limerick.

— Within five miles of the reactor, population density should not exceed one-half of the average density of the entire region in which the plant is located.

NRC officials have said the "region" may be defined as the state in which the plant sits. Pennsylvania, with 262 residents per square mile, is the nation's eighth most densely populated state, according to 1970 census figures.

The population density for Limerick within five miles is 856 people per square mile — a density six times greater than the standard would permit.

— From five to 10 miles from the plant, population density should not exceed three-quarters that of the state. Limerick also could not meet this test — its density in this geographic ring is 363 people per square mile.

— From 10 to 20 miles, the density should not exceed twice the average for the state. So Pennsylvania's limit would be 524, and Limerick — which has a density of 662 in this ring — would fail again.

"Limerick today would probably not meet our population density siting requirements," States News Service was told by Brian K. Grimes, director of an NRC task force on emergency preparedness.

A SPOKESMAN for PE, Ronald Harper, said he couldn't comment on the proposed changes in site policy. He said that's a subject solely up to the "regulatory commission and Congress."

But Harper, who has steadfastly maintained that Limerick will be "a plant that operates safely in our back yard," indicated he was concerned that federal officials were trying to "make a cookie-cutter policy and apply it to all plants."

The utility spokesman also said PE couldn't be expected to take the financial loss that a shutdown of the Limerick facility would entail.

"No corporation can carry that kind of financial burden without clearing some kind of return," Harper said.

State radiation expert Gerusky disagrees.

"The Nuclear Regulatory Commission has an attitude they've expressed this constantly — that it's the utility's risk to build the power plant," Gerusky said. "The whole idea has been that it's at PE's risk. That plant may never operate, but if they want to build it, go ahead."

The Atomic Industrial Forum is not as reticent as PE about stating its views of the proposed new siting rules. Stetson, manager of licensing and safety projects for the Washington, D.C.-based group, said he does not see the need for a new policy.

Stetson said the need for new rules for future site request was moot because the industry itself stopping proposing sites in densely populated areas in the early '70s. And he said he was concerned that an unfair "value judgment" about present plants was implied in the call for a redrafted policy.

Stetson's opinion will surely be tested when the regulatory commission holds its hearings on PE's request for an operating license for Limerick.

Few can dispute state official Gerusky's summing-up.

"The hearing on that plant is going to be something else. I'll tell you."

CERTIFICATE OF SERVICE

I, Maureen Mulligan, hereby certify that I have served the following individuals on the service list below by first class mail, postage prepaid with the following information on August 31, 1984;

Limerick Ecology Action's supplementary responses to Philadelphia Electric Company Interrogatories from June 25, 1984

- a) Additional identification of documents & related info
- b) LEA's answer to Philadelphia Electric Company's proposed Stipulation of August 10, 1984
- c) Affidavit of Maureen Mulligan, as requested

Lawrence Brenner, Chairman (2)
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

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

Troy B. Conner, Jr., Esq.
Conner and Wetterhahn
1747 Pennsylvania Ave., NW
Washington, DC 20006

Docketing and Service Section
Office of the Secretary
U.S. Nuclear Regulatory
Commission
Washington, DC 20555

Philadelphia Electric Company
Attn: Edward G. Bauer, Jr.
VP and General Counsel
2301 Market St.
Phila., PA 19101

Atomic Safety and
Licensing Board Panel
U.S. Nuclear Regulatory
Commission
Washington, DC 20555

Thomas Gerusky, Director
Bureau of Radiation Protection, DER
5th fl, Fulton Bank Bldg.
Third and Locust Sts.
Harrisburg, PA 17120

Atomic Safety and
Licensing Appeal Panel
U.S. Nuclear Regulatory
Commission
Washington, DC 20555

Spence W. Perry, Esq.
Associate General Counsel
FEMA
Room 840
500 C St., SW
Washington, DC 20472

Zori Ferkin, Esq.
Governor's Energy Council
P.O. Box 8010
1625 Front St.
Harrisburg, PA 17105

Jay M. Gutierrez, Esq.
U.S. Nuclear Regulatory Commission
Region I
631 Park Ave.
King of Prussia, PA 19406

Director, PEMA
Basement, Transportation
and Safety Building
Harrisburg, PA 17120

Angus Love, Esq. / ^{Hoyle Co} (Legal Aid)
107 East Main St.
Norristown, PA 19401

Robert Anthony
103 Vernon Lane
Moylan, PA 19065

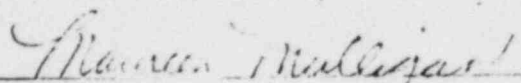
Martha W. Bush, Esq.
Kathryn S. Lewis, Esq.
Solicitor's Office
City of Philadelphia
Municipal Services Building
Phila., PA 19107

Robert Sugarman, Esq.
Sugarman and Denworth
101 Broad Street, 16th. Floor
Philadelphia, Pa. 19107

Timothy Campbell
Chester County Dept.
of Emergency Services
14 East Biddle Street
West Chester, Pa. 19380

Frank Romano
61 Forest Ave.
Ambler, PA 19002

August 31, 1984


Maureen Huilgan, Vice President