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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of)

LONG ISLAND LIGHTING COMPANY)

(Shoreham Nuclear Power Station,
Unit 1))

) Docket No. 50-322-CL-3
) (Emergency Planning)
)
)

DIRECT TESTIMONY OF DAVID HARRIS AND MARTIN MAYER
ON BEHALF OF SUFFOLK COUNTY REGARDING CONTENTIONS
24.G, 24.K, 24.P, 73 and 75.

I
INTRODUCTION

C. Please state your names and positions.

A. My name is David Harris. I am the Commissioner of Health Services for Suffolk County, New York.

My name is Martin Mayer. I am the Deputy Director of the Division of Patient Care Services in the Suffolk County Department of Health Services.

Q. Please summarize briefly your professional backgrounds.

A. (Harris) I have been Commissioner of the Suffolk County Department of Health Services since 1977. From 1975 to 1977, I

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was Deputy Commissioner of Health Services for Suffolk County. I was Associate Director of the Mt. Sinai Hospital from 1971 to 1975, and prior to that I was associated with the New York City Department of Health where I was Deputy Commissioner of Health from 1969 to 1971.

I am board certified in the medical specialties of pediatrics and preventive medicine. I am also Professor of Community and Preventive Medicine and Pediatrics, State University of New York at Stony Brook. In addition, I hold academic appointments at the Columbia University School of Public Health, at the New School for Social Research in New York City and at C.W. Post. I am a member of the New York State Advisory Council on Substance Abuse, a member of the New York State Mental Hygiene Planning Council, and the immediate past president of the New York State Public Health Association. A copy of my professional qualifications was attached to my testimony on Contention 25 and was admitted into evidence in this proceeding. See Tr. 1218.

(Mayer) A copy of my professional qualifications is Attachment 1 hereto.

Q. What is the purpose of this testimony?

A. (Harris, Mayer) The purpose of this testimony is to address Emergency Planning Contentions 24.G, 24.K, 24.P, 73 and 75. All the testimony which follows is jointly sponsored by both of us.

Q. Have you reviewed the LILCO Transition Plan?

A. We have reviewed, among others, those portions of the LILCO Plan that concern relocation centers and proposed protective actions for the homebound.

Q. What is your opinion of those provisions?

A. In our opinion, those provisions are unworkable for the reasons stated in the contentions addressed by this testimony.

II
CONTENTIONS 24.G, 24.K AND 24.P - LACK OF AGREEMENTS

Q. Are you familiar with Contentions 24.G, 24.K and 24.N?

A. Yes.

Q. Do you agree with those Contentions?

A. Yes we do. The LILCO Plan relies on the services of numerous non-LILCO organizations and individuals for implementation of its evacuation proposals. In order to prepare

patients and move patients and the homebound, and to care for those individuals in transit, LILCO needs the services of ambulance companies, their personnel, and additional medical or paramedical personnel. Further, without the services of the American Red Cross ("ARC"), LILCO's proposed relocation centers could not function. Despite their importance, however, LILCO does not have the agreements necessary to assure implementation of these essential aspects of its Plan.

Q. In your opinion are such agreements necessary?

A. Yes. We are aware of no requirement that ambulance companies, their employees, or medical or paramedical personnel cooperate with LILCO in the event of a Shoreham accident. Therefore their participation must be assured. In our opinion, agreements of proper scope and detail are the best -- and possibly the only -- way to obtain such assurance.

Q. Please state Contention 24.G.

A. Contention 24.G is as follows:

Contention 24. LILCO has failed to obtain agreements from several of the organizations, entities and individuals for performance of services required as part of the offsite response to an emergency pursuant to NUPEG 0654, as follows:

Contention 24.G. According to LILCO's

estimates (see Appendix A, at IV-175), it will require sufficient ambulances to make 113 ambulance trips and enough ambulettes to make 209 trips in order to evacuate the nursing and adult homes located in the EPZ and the homebound who reside in the EPZ. An additional number of ambulances and ambulettes will be required to evacuate the approximately 630 patients likely to be in the hospitals within (and just outside) the EPZ. (See Appendix A, at IV-172; OPIP 3.6.5.) However, LILCO has no agreements with ambulance companies to provide such equipment in such quantities. (See FEMA Report at 10.) Even the letters of intent to enter into such agreements which are contained in Appendix B do not relate to numbers of ambulances and ambulettes necessary to meet LILCO's own estimates. In the absence of such agreements, LILCO's proposed evacuation of persons in special facilities, hospitals, and the handicapped cannot and will not be implemented.

Q. What is the status of LILCO's attempts to obtain agreements with ambulance companies?

A. The County received on February 15, 1984, copies of agreements between LILCO and some ambulance companies. Those agreements are not contained in the Plan, however, and as to several of the ambulance companies upon which LILCO apparently relies, there exist only letters of intent to enter into agreements in the unspecified future, as Contention 24.C states. Furthermore, in our opinion, neither the agreements (which are not in the Plan), nor the letters of intent which are in the Plan, provide the necessary assurance that LILCO's proposals for

evacuating special facilities and the homebound could or would be implemented.

Q. Why not?

A. LILCO does not have agreements involving a sufficient number of ambulances. On page IV-175 of Appendix A, LILCO estimates that it would take 113 ambulance trips and 209 ambulette trips to evacuate the nursing and adult homes and a portion of the homebound handicapped in the EPZ. The agreements that LILCO has obtained provide for only 45 ambulances and 106ambulettes. It is not clear from the Plan whether LILCO assumes that ambulances and ambulettes make more than one trip during an evacuation. Its time estimates suggest that only one trip is made per ambulance. LILCO has agreements relating to roughly half the ambulances and ambulettes it estimates would be needed if each made only one trip. An assumption that a timely evacuation could be conducted if more than one trip were required in light of the time necessary for notification, mobilization and transporting patients to receiving hospitals which (although not identified by LILCO) are likely to be far away from the EPZ, would be unrealistic. In addition, LILCO's estimates of how many ambulance and ambulette trips would be necessary in an evacuation are unrealistically low for two reasons.

First, the LILCO estimates do not include any ambulances or ambulettes for the three hospitals in the EPZ -- i.e., John T. Mather Memorial, Central Suffolk and St. Charles. Those facilities have, on average, a census of about 630 patients. Clearly to evacuate that many patients would require a very large number of ambulances and ambulettes. In Revision 3 of its Plan, LILCO asserts that it intends to evacuate the hospitals on an ad hoc basis, using vehicles intended for other purposes as they become available after their other uses are complete. But, as we will discuss in more detail in our later Group II testimony on Contention 72, this ad hoc arrangement would not protect the patients of the hospitals. That is, LILCO could not provide adequate protection to the patients of hospitals, unless it had enough ambulances and ambulettes ready to evacuate those facilities in a timely manner. This would necessarily increase the number of ambulances and ambulettes that would be needed.

Second, LILCO's estimate of the number of handicapped persons residing at home in the EPZ and requiring evacuation by special vehicle is too low for the reasons described below in discussing Contention 73.A. LILCO is very likely to need more ambulances and ambulettes to evacuate the homebound than it expects. For these reasons, LILCO's agreements with ambulance companies provide for too few ambulances and ambulettes.

Appendix B of the LILCO Plan includes some letters from some additional ambulance companies, which indicate an intent to enter into agreements with LILCO in the future. However, those letters of intent do not change the fact that LILCO does not have agreements that assure enough ambulances and ambulettes to implement its evacuation proposals. First, the letters are only assertions that companies may enter into agreements some time in the future. They are not actual agreements, and no commitments now exist with the companies that have signed such letters. But even if these letters were for the sake of argument assumed to provide assurance of the availability of emergency vehicles, the letters and contracts together relate to only 74 ambulances and 154 ambulettes, still short of meeting LILCO's estimates of 113 and 209, respectively. That is, even with the letters, LILCO has arranged for only about two thirds of the vehicles it expects it will need. And, for the reasons we stated above, LILCO's estimates are unrealistically low.

Q. Please state Contention 24.K.

A. The contention states:

Contention 24. LILCO has failed to obtain agreements from several of the organizations, entities required as part of the offsite response to an emergency pursuant to NUREG 0654, as follows:

Contention 24.K. The LILCO Plan relies upon non-LILCO personnel to drive ambulances and ambulettes and to provide the necessary medical and paramedical support services in the buses, ambulances, and ambulettes to be used in evacuating special facilities and the handicapped. (See Appendix A, at IV-166 to IV-168, IV-172 to IV-178.) The LILCO Plan includes no agreements from any such individuals or related entities to perform such services, under LILCO's direction, in the event of an emergency at Shoreham. In the absence of such agreements, LILCO's proposed evacuation of special facilities and the handicapped cannot and will not be implemented. There is also no assurance that contaminated injured persons, or persons injured during the evacuation, will be transported to hospitals for treatment as required by 10 CFP Section 50.47(b)(12).

Q. Why do you agree with that Contention.

A. The patients of hospitals, other special facilities and many of the homebound will require medical attention while they are being evacuated. To ensure that the medical and paramedical personnel necessary to provide this care are available, LILCO needs agreements with such individuals. Although some of LILCO's agreements with ambulance companies provide for "manned vehicles," there is no indication that a sufficient number of vehicles will actually be "manned" with proper personnel since there are no agreements with medical personnel.^{1/}

^{1/} The agreements generally provide that the companies will furnish "vehicles and drivers (and where applicable medical technicians)."

LILCO has no agreements with the medical personal involved. Moreover, LILCO's evacuation proposals include plans to evacuate substantial numbers of special facility patients by buses driven by LILCO employees. The Plan has no provisions for or agreements with skilled health professionals to accompany patients on buses. This is clearly a serious deficiency because there can be no safe transport, much less evacuation, of special facility patients unless there are attending skilled health professionals. Thus, there is no assurance that the evacuating special facility patients or the homebound would receive needed medical attention on buses or in ambulettes and ambulances in the event of an evacuation.

Q. Plase state Contention 24.P.

A. Contention 24.P reads as follows:

Contention 24. LILCO has failed to obtain agreements from several of the organizations, entities and individuals for performance of services required as part of the offsite space to an emergency pursuant to NUREG 0654, as follows:

Contention 24.P. LILCO relies upon the ARC to provide services, including medical and counseling services, at relocation centers. (Plan 2.2-1, 2.2-2, 3.6-7 and at 4.2-1). However, LILCO has no agreement with the ARC to provide such services. In the absence of such agreements, LILCO's proposed protective action of evacuation cannot and will not be implemented.

Q. What is the status of LILCO's efforts to obtain an agreement with the APC?

A. The LILCO Plan contains no such agreement, although at APP-B-9 of the Plan there is a letter from LILCO to the ARC describing LILCO's understanding of some conversations which apparently took place during the early summer of 1982 between representatives of LILCO and the ARC. The Plan contains no statement by or on behalf of the ARC which indicates either that it endorses or agrees with LILCO's understanding of such conversations, or that it intends to perform the functions assigned to it by LILCO in the Plan. Furthermore, LILCO's letter states only that in the event of a Shoreham emergency, LILCO expects the ARC to perform its "usual" emergency response functions "including setting up and operating relocation centers for the public." There is no indication in LILCO's letter or elsewhere that the ARC's "usual" functions coincide with or include all those expected of it under the LILCO Plan.

Thus, there is no basis in the Plan or elsewhere for LILCO's apparent belief that all the functions assigned to the APC in the LILCO Plan would actually be performed by the ARC in the event of a Shoreham emergency. LILCO has not obtained the agreement of the ARC or any other entity to provide them. As a

result, LILCO has provided no assurance that the needs of evacuees at relocation centers would be met.

III

CONTENTION 73 - EVACUATION OF THE HANDICAPPED PERSONS AT HOME

Q. Please state Contention 73.

A. Contention 73 as admitted by the Board states:

Contention 73. The LILCO Plan proposes to use ambulances to evacuate handicapped people who are not in special facilities. (OPIP 3.6.5). Intervenors contend that this aspect of the LILCO Plan cannot be implemented in a timely manner and therefore will not provide adequate protection to handicapped persons in the EPZ. Thus, this aspect of the Plan fails to comply with 10 CFR Sections 50.47(a)(1), 50.47(b)(1), 50.47(b)(3) and 50.47(b)(10), and NUPEG 0654, Sections II.A.3, C.4 and J, as specified in paragraphs A and B below.

Contention 73.A. All handicapped persons in need of special evacuation services will not be known to LILCO and therefore will not be evacuated in the event of an emergency. The pre-registration system proposed by LILCO (Plan, Appendix A, at II-18; see also Information Brochure), will not result in identification of a substantial number of persons who may need assistance in order to evacuate because:

1. Many people who will require assistance will not return the post cards to LILCO because they do not: (a) perceive themselves to be handicapped; (b) desire to be identified as handicapped; (c) understand the reason or need to return the cards; (d) remember to return the cards; and/or (e) desire to rely on LILCO assistance in the event of an emergency.

2. There is no provision for verifying the completeness of the LILCO listing to be compiled from the returned post cards.

3. There is no provision for regularly updating the listing.

Contention 73.B. The LILCO Plan does not provide for the assistance and equipment necessary to accomplish an evacuation of handicapped persons at home, and thus fails to comply with 10 CFR Sections 50.47(b)(1), 50.47(b)(3), 50.47(b)(5) and 50.47(b)(8), and NUREG 0654, Sections II.A.3, C.4, F and J. Specifically:

1. The only provision for notifying non-deaf handicapped individuals of a pending evacuation is by means of a telephone call from the LILCO Home Coordinator. (OPIP 3.6.5). This is an inadequate and ineffective means of notifying many handicapped individuals such as those who are bedridden, unable to get to a telephone or unable to communicate on a telephone, and thus LILCO fails to comply with 10 CFR Section 50.47(b)(5) and NUREG 0654, Sections II.E.5 and E.6. (See FEMA Report at 9.)

3. One LILCO employee -- the Home Coordinator -- is responsible for contacting all the handicapped persons and identifying and contacting all reception centers (none of which are identified in the Plan). (OPIP 3.6.5, Section 5.1.2.) While OPIP 3.6.5 provides that the Home Coordinator should "[d]raw on Communications and Administrative Support personnel to assist in this effort," there is no indication that such personnel will be available. Thus, there is no assurance that disabled persons will be notified promptly enough to permit timely evacuation.

4. The proposed evacuation would take far too long, and as a result, handicapped people would be likely to receive health-threatening doses of radiation because evacuating vehicles would encounter congestion from other mobilization and evacuation traffic, and thus would be substantially delayed in traveling to the homes of handicapped individuals, and to relocation centers.

5. The LILCO Plan calls for the deaf to be alerted of an accident, and advised of the appropriate protective action, by LILCO route alert drivers who are expected to drive to the home of each deaf resident within the EPZ (OPIP 3.6.5). This proposed notification will not be timely, however, since route alert drivers will be delayed by mobilization and evacuation traffic. Furthermore, even disregarding expected traffic conditions, there is no assurance that enough route alert drivers will be assigned to this function to enable LILCO to carry out such notification promptly.

Q. Do you agree with Contention 73?

A. Yes, we do. LILCO's proposals for the evacuation of handicapped persons from their homes could not be implemented for several reasons.

First, as stated in subpart A of Contention 73, LILCO would not have an accurate list of the people who would actually need assistance in the event of a Shoreham emergency. LILCO's proposed method for identifying such individuals is seriously flawed. In an attempt to identify those individuals,

in August, 1983, LILCO mailed a letter containing a return post card to all the residents of the EPZ, and asked them to return the card if they felt they would need transportation assistance. LILCO apparently compiled its list of the homebound and arrived at its estimate of 345 homebound, 99 of whom would require ambulance or ambulette transportation (Appendix A, at 175), based on the returned cards. Revision 3 of the Public Information Brochure also includes a returnable post card and a request that "if you need special help, or if you know of someone who does, please fill out and return the post card"

LILCO's method is badly designed. If someone in the area of public health were to attempt to identify individuals with particular health-related characteristics, he or she would not use a system that relied on voluntary, positive action by the individuals. That kind of system is unlikely to produce reliable data, because you cannot distinguish between a non-response and a negative response. That is, not every non-response means the individual would not need assistance in an emergency. Such a system does not identify those people who would need help but did not return cards for any number of reasons. LILCO's assumption that all non-responders (people who did not return the cards) are persons who would have submitted a negative response (i.e., they need no assistance) is unwarranted.

In addition, LILCO's proposed method includes no provision for verifying the accuracy of the estimates obtained from the post cards. Indeed, LILCO apparently has not tried to determine how many people, who in fact would need assistance, failed to return the August post cards, and there is no indication that it intends to verify whatever listing it may compile after the Public Information Prochure is released. Thus, there is no assurance that listings based on returned post cards represent the true number of individuals who would actually need assistance.

Finally, whatever list LILCO ultimately compiled would have to be updated regularly. Such lists become obsolete, and the purpose of the list is too important to let it become inaccurate with the passage of time. Nonetheless, LILCO's Plan has no provision for updating the list. For of all these reasons, it is clear that LILCO does not and will not know of all the handicapped people in the 10-mile EPZ who would need assistance in the event of a Shoreham emergency.

Q. Do you agree with subpart B of Contention 73 which concerns LILCO's proposals to evacuate the homebound themselves?

A. Yes. Those proposals could not be implemented.

As stated in Contention 73.B.1, LILCO plans to notify the non-deaf homebound by telephone (OPIP 3.6.5, Section 5.1.2). However, the telephone is an inappropriate means of notification for handicapped individuals. Many handicapped persons are impaired in their ability to do many things the rest of us consider commonplace, including using a telephone. For many reasons a handicapped or invalid individual might not be able to answer a telephone call. Moreover, many of those who can use a telephone are likely to need a long time to answer. According to the Plan, only one LILCO worker -- the Home Coordinator -- is assigned the task of calling hundreds of people in a hurry; he or she could not afford to wait a long time for a response. As subpart B.3 of Contention 73 states, OPIP 3.6.5 does assert that the Home Coordinator could "draw on" other LERO support personnel to assist in the calling effort. However, presumably all LERO workers will have their own job assignments; given the many duties and responsibilities for workers set forth in the Plan and OPIPs, there is no assurance that such additional personnel would in fact be available to assist the Home Coordinator. At any rate, it is inadequate planning to rely on such an ad hoc recruiting process for notification of handicapped individuals. Thus, under the

conditions of an emergency it is likely that LILCO would not be able to contact many of the homebound.

But, even if contact with the homebound could be made by telephone, the required calls would take too long. Handicapped individuals, like anyone else, are unlikely to listen in silence to the LILCO caller's announcement and/or instructions and then hang up. Instead, they are likely to ask the LILCO caller questions about the emergency and the proposed evacuation. The process would substantially slow down the LILCO caller in the process of telephoning all the homebound. Given the tremendous number of calls the Home Coordinator would be expected to make and the limited time available, the LILCO caller probably would not be inclined to take the time to answer questions. This could cause minor conflicts that in turn would cause delays. Furthermore, many of the homebound are likely to suffer from disabilities that make it difficult for them to hear, speak or even understand. This would result in even more delay. Therefore, LILCO's proposal to contact the non-deaf homebound by telephone is unacceptable, because there is too much chance that many of the homebound would not be able to evacuate in a timely manner due to inadequate notification.

Q. Subpart B.4 of Contention 73 concerns the time necessary to conduct an evacuation of the handicapped from their homes in the EPZ. Do you have concerns related to that subpart?

A. Yes we do. The testimony of other Suffolk County witnesses on Contentions 65 and 27 supports the portion of that subpart relating to the likelihood that ambulances attempting to evacuate handicapped persons from their homes will encounter traffic congestion that will slow down the proposed evacuation. We have an additional concern. Still more delay in the evacuation of the handicapped will result because many of the ambulance and ambulette companies relied upon by LILCO are located in areas distant from the EPZ. See Suffolk County testimony on Contention 27 for details on mileage. This means that many ambulance drivers are likely to be unfamiliar with the EPZ, and therefore they could get lost attempting to find private residences. Even under normal circumstances involving an ambulance company responding to a call in a relatively familiar area, drivers frequently have trouble locating particular homes, especially when residences are poorly marked or streets are poorly lit.

Q. Please describe LILCO's proposals for notifying deaf residents of the EPZ which are referenced in subpart B.5 of Contention 73.

A. Under the LILCO Plan, if sheltering were the recommended protective action, LILCO proposes to send Route Alert Drivers to the homes of the deaf residents of affected portions of the 10-mile EPZ to notify those individuals. If evacuation were recommended, LILCO route alert drivers would be sent only to homes of the "ambulatory deaf"; no notification of the need to evacuate, or forthcoming LILCO evacuation assistance, would be given to the "nonambulatory deaf" prior to the arrival of an ambulance or ambulette assigned to transport them. (OPIP 3.3.4, Section 5.4.) This LILCO proposal would not work, first because LILCO would not know of all the deaf residents of the 10-mile EPZ, and second, because the process would take far too long.

LILCO would not know of all the deaf residents of the EPZ for the reasons discussed above in connection with the home-bound in general.

The Plan's provisions for notification of the deaf could result in notification coming too late for two reasons. First, the LILCO Plan does not provide for notification of deaf people until there has been a recommendation of sheltering or evacuation. Thus, under the LILCO Plan the deaf would have no opportunity to prepare to take protective actions, contrary to the

situation for the non-deaf population who would receive notice from sirens and radio at initial stages of the emergency, even before any protective actions were advised. Although it is likely that some deaf individuals would learn of the emergency earlier from friends or relatives, a prudent planner would not rely on a mere possibility that something desirable might occur.

Second, the LILCO Plan does not identify individuals who are specifically assigned the task of notifying the deaf. Instead, LILCO plans to "dispatch available Route Alert Drivers to notify . . . deaf people." (OPIP 3.3.4, Section 5.4.1) However, Route Alert Drivers are assigned the primary job of providing a backup to the sirens (see Suffolk County Testimony on Contention 56), and the need to fulfill that assignment and to notify the deaf could, under many circumstances, arise at the same time. Thus, the Plan provides no assurance that anyone will be "available" to perform the job of notifying the deaf.

In our opinion, the LILCO Plan provides no assurance that deaf residents of the EPZ would be identified or receive timely notification of an emergency and, consequently, there is no assurance that they could or would be protected adequately.

Q. Please summarize your conclusions regarding Contention 73.

A. LILCO's proposals for evacuating the homebound could not be implemented because they are the result of a flawed planning effort. In order to plan effectively for any contingency, one must make realistic and conservative assumptions. One must not make optimistic estimates, or unwarranted assumptions, or ignore significant contingencies. The LILCO Plan includes all those things and as a result, its proposals for evacuating the handicapped at home are not workable.

IV

CONTENTION 75 - RELOCATION CENTERS

Q. Please state Contention 75.

A. Contention 75 and its preamble read as follows:

Contention 75. The LILCO plan provides no estimates of the number of evacuees who may require shelter in a relocation center, and the Plan fails to demonstrate that each such facility has adequate space, toilet and shower facilities, food and food preparation areas, drinking water, sleeping accommodations and other necessary facilities. Accordingly, there is no assurance that the relocation centers designated by LILCO will be sufficient in capacity to provide necessary services for the number of evacuees that will require them. Thus, LILCO fails to comply with NUREG 0654, Sections II.J.10.g and J.12.

Q. Do you agree with Contention 75?

A. Yes, we do. It appears that LILCO's planning efforts with respect to relocation centers have consisted primarily of an assertion that the American Red Cross (the "ARC") is responsible for operating the centers. In our opinion, LILCO has failed to consider, much less plan to deal with, the numerous practical problems involved in establishing and running relocation centers. As a result, the centers proposed by LILCO will not provide necessary services to those evacuees who need shelter.^{2/}

^{2/} Of course, as noted in Contentions 24.N, 24.O, the testimony of President Kreiling of Suffolk County Community

First, LILCO has ignored the need for coordination among the APC and the various LILCO employees who supposedly would also be involved in relocation center operations. According to the LILCO Plan, the ARC is expected to operate those portions of the relocation centers in which uncontaminated evacuees will live. (See OPIP 4.2.1.) But LILCO personnel are supposed to perform radiological monitoring and decontamination, control traffic and maintain security under the direction of the LILCO employees designated as the Security Coordinator, the Traffic Control Coordinator and the Decontamination Leader. (Plan, at 4.2-2) The Plan contains no substantive information indicating how all these groups are to work together or coordinate their actions in a way that would make operation of the centers possible. The LILCO personnel at the relocation centers (totalling approximately 48 at each center) would be responsible to three different LILCO coordinators. Approximately 99

(Footnote cont'd from previous page)

College, and our testimony on Contention 24.N, LILCO's assumption that the Suffolk County Community College would be available as a relocation center is unfounded, and LILCO has no agreements with any of the other facilities proposed in its Plan indicating that any of those facilities would be available either. Our testimony on Contention 75, however, assumes for the sake of argument, that LILCO could obtain the agreement of facility owners other than the Suffolk County Community College to permit their facilities to be relocation centers.

ARC personnel at each center would be neither subordinate nor superior to the LILCO personnel, even though they would have to work together. Under such an arrangement, it would be almost impossible to determine what supplies and facilities were available, obtain those that were needed, or provide adequate services to evacuees.^{3/}

Second, although the Plan asserts at 4.2-2 that the five relocation centers proposed by LILCO were selected "[i]n accordance with ARC procedures," it appears that the statement is incorrect. For example, page 4.2-3 of the Plan states that 20 square feet per bed was considered adequate for sleeping accommodations; however, Shelter Management - A Guide For Trainers, ARC 3074, American Red Cross, 1980, at 6, states that "[a]n allowance of 60 square feet per bed is recommended; the minimum allowance should be 40 square feet." Thus, the selection criteria for sleeping space used by LILCO was apparently substantially below that recommended by the ARC: only one third of the recommended ARC sleeping space and only one half of the

^{3/} The Plan does assert that the ARC representative expected to be stationed at the EOC, will "act as the liason between the centers and the other portions of [LERO]." (Plan, at 4.2-2). Clearly, while such an individual could deal with problems that may arise at the EOC or among the various EOC coordinators, he or she, as a practical matter, could have little if any impact on the operations actually taking place at the relocation centers.

minimum suggested by the ARC. This is important because adequate sleeping space is an essential element in maintaining public health in a mass shelter situation.

Furthermore, the list of other factors considered by LILCO in selecting its relocation centers (see Plan, at 4.2-3) fails to include waste removal. Wastes are one of the leading sources of public health problems, particularly in a mass care situation. Moreover, waste removal would be an especially significant problem at LILCO's relocation centers because it would be complicated by the potential need to deal with wastes contaminated by radioactivity, such as contaminated water, clothing and personal possessions of contaminated evacuees as well as normal waste. LILCO's Plan provisions concerning relocation centers ignore this crucial problem.

Similarly, there is no indication in the Plan that LILCO either considered or dealt with the problem of disposing of all the contaminated water that would be produced by LILCO's proposed decontamination operations. For example, showers cannot be used to wash contaminated evacuees, if the contaminated water simply drains into a sewer. Notwithstanding this fact, the LILCO Plan contains no indication that LILCO's proposed relocation centers have showers that in fact could be used by

contaminated individuals. And, other than some lists of supplies such as toilet paper, cots, paper cups, towels and trash cans which the Plan asserts will be available at LILCO's proposed relocation centers, there is no indication in the Plan that a sufficient supply of such materials, acknowledged by LILCO to be necessary to protect public health (OPIP 3.7.1, at Section 5.1), actually would be available at the centers during a Shoreham emergency.

Third, the LILCO Plan fails to specify which buildings or portions of buildings LILCO has "selected" for its relocation centers. Each of the proposed centers is a large facility. For example, SUNY at Stony Brook is a very large complex, consisting of many buildings. Telling either potential evacuees or response workers to report to SUNY at Stony Brook tells them very little. Furthermore, since LILCO has failed to identify any specific areas, buildings or facilities at any of its proposed relocation centers, it is impossible to determine whether the proposed facilities would be adequate or available for the use intended by LILCO.

Fourth, the LILCO Plan contains practically no information concerning how LILCO proposes to solve the logistical problems involved in conducting the monitoring and decontamination

functions that LILCO expects to take place at the relocation centers. OPIP 3.9.2 contains material concerning techniques for monitoring and decontaminating people, and the Plan contains some drawings of how evacuees should be "routed" from one monitoring or decontamination "station" to another. However, the Plan fails to identify where in LILCO's proposed relocation centers it intends to set up these operations. In our opinion, it is unlikely that LILCO's proposed relocation centers would have the facilities or the equipment necessary to shelter and monitor/decontaminate evacuees for the following reason.

Judging from the description of its relocation center "selection" process, it appears that LILCO ignored the logistical difficulties posed by the dual functions that LILCO expects to be performed at those centers. The list of criteria on pages 4.2-2 and 4.2-3 of the Plan is almost an identical copy of the list of criteria contained on page 4 of the APC's shelter management booklet mentioned above. Obviously those criteria concern the provision of healthy living quarters for persons in need of temporary shelter. That is what the APC does. Those criteria, however, ignore a crucial additional requirement of the relocation centers necessary under the LILCO Plan: LILCO's relocation centers would need two sets of many facilities, such

as reception areas, waiting rooms, showers, toilets, storage areas, waste disposal facilities, nursing and first aid facilities, and possibly cooking and dining facilities, as well as adequate supplies and equipment for such double sets of facilities. Dual facilities would be necessary in order to accommodate separately the potentially or actually contaminated evacuees, and those who are not contaminated.

Clearly, LILCO's Plan has failed to come to grips with the practical problems involved in doing what LILCO proposes to do. The Plan therefore provides no assurance that the proposals with respect to LILCO's provisions of relocation, monitoring and decontamination services could ever be implemented by LILCO. In our opinion, they could not.

Q. Does that conclude your testimony?

A. Yes.

ATTACHMENT 1

CURRICULUM VITAE

Martin David Mayer, M.D., M.P.H.

Present Position: (as of September, 1972)

Deputy Director of Public Health
Suffolk County Department of Health Services
Division of Public Health
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Education:

1. Stuyvesant High School, New York, New York; graduated June, 1957
2. City College of New York, New York, New York; September 1957 to January, 1962; received BChE Degree, January, 1962

Professional Education:

1. State University of New York, Upstate Medical Center Medical School; Syracuse, New York; September, 1965 to June, 1969; Received M.D., Cum Laude, June, 1969.
2. Kings County Hospital; Brooklyn, New York; Straight Pathology Internship; July, 1969 through June, 1970.
3. University of Michigan; Ann Arbor, Michigan, September, 1971 through August, 1972, received M.P.H., August, 1972.

Licensure:

New York State, Physician License MD106724, August 5, 1970
Diplomat, National Board of Medical Examiners, Certificate No. 102795, July, 1970

Curriculum Vitae
Martin David Mayer, M.D., M.P.H.
Page Two

Honors:

1. Winner, competitive New York State Regents Scholarship, 1957-1961
2. Elected to Tau Beta Pi, National Engineering Honor Society (1960)
3. Elected to Omega Chi Epsilon, National Chemical Engineering Honor Society (1961)
4. Elected to Alpha Omega Alpha, National Medical Honor Society (1968)

Employment:

1. August 1970 through August 1971 - Resident Physician in the New York State Department of Health Residency Program in Public Health and Preventive Medicine; Assigned to Westchester County Health Department, White Plains, New York
2. Summer 1966, Summer 1967, Summer 1968 - Assistant Sanitary Engineer, Division of Air Pollution, New York State Department of Health, 84 Holland Avenue, Albany, New York
3. July 1963 through July 1965 - Senior Assistant Sanitary Engineer, U.S. Public Health Service, Robert A. Taft Sanitary Engineering Center, Cincinnati, Ohio
4. February 1962 through January 1963 - Assistant Process Engineer, ESSO Research and Development Corporation, Florham Park, New Jersey

Publications:

Martin Mayer, A Compilation of Air Pollution Emission Factors for Combustion Processes, Gasoline Evaporation, and Selected Industrial Processes, U.S. Department of Health, Education and Welfare, Public Health Service, National Center for Air Pollution Control - May, 1965