

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of)	
)	
LONG ISLAND LIGHTING COMPANY)	Docket No. 50-322
)	(Emergency Planning)
(Shoreham Nuclear Power Plant,)	
Unit 1).)	
)	
)	

Consolidated
Emergency Planning Contentions

July 7, 1983

Filed by: Suffolk County, the Shoreham
Opponents Coalition, the
North Shore Committee Against
Thermal and Nuclear Pollution,
and the Town of Southampton

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INTRODUCTION

Pursuant to the Atomic Safety and Licensing Board Orders of April 20, 1983 ("Memorandum and Order Denying Suffolk County's Motion to Terminate the Shoreham Licensing Proceeding," LBP-83-22, 17 NRC _____), May 5, 1983 ("Order Confirming Adjustment in Schedule to File Contentions" (unpublished)), May 12, 1983 ("Order Directing Change of Service on Emergency Planning Submissions" (unpublished)), and June 10, 1983 ("Order Limiting Scope of Submissions" and "Order Denying Request for Additional Time to File Draft Emergency Planning Contentions" (both unpublished)), Intervenor Suffolk County ("SC"),

Shoreham Opponents Coalition ("SOC"), North Shore Committee Against Thermal and Nuclear Pollution ("NSC") and the Town of Southampton submit the following consolidated emergency planning contentions.

The "LILCO Plan" to which the contentions refer is the so-called "LILCO Transition Plan," consisting of the following documents:

- "SNPS Offsite Radiological Emergency Response Plan," Revision 0, with blue-colored inserts identified as "LILCO Transition" (herein referred to as the "LILCO Plan" or the "Plan");

- "SNPS Offsite Radiological Emergency Response Plan for Suffolk County, Appendix A Evacuation Plan," with gold-colored inserts (herein referred to as "Appendix A");

- "SNPS Local Offsite Radiological Emergency Response Plan Implementing Procedures," Revision 0, Volumes I and II, with blue-colored inserts identified as "LILCO Transition" (herein referred to as "OPIPs"); and

- "Emergency Procedures -- Shoreham Nuclear Power Station (Revised)" (herein referred to as "Information Brochure").

Unless otherwise stated, the "EPZ" referenced in the contentions is the 10-mile plume exposure pathway EPZ assumed in the LILCO Plan.

The consolidated contentions are joined in by all the intervenors. The primary sponsor of each is indicated in the title.

Several organizational revisions to the Draft Contentions filed on June 23, 1983, are reflected herein. The primary revisions are:

1. The SOC and Town of Southampton contentions have been integrated and consolidated, where possible, with those of the County.

2. The County's contentions have been broken down into identified "preambles," and into multiple contentions. The preambles apply and are a part of each contention with which they are identified. They have been stated only once for the sake of brevity.

The contentions are organized, by general subject matter, in a format that follows that of the Plan itself. The subject headings are the same as those contained in the Draft Contentions. Under each general subject heading are the individual contentions which relate to that subject. In general, Suffolk County's contentions are stated first, followed by those primarily sponsored by SOC and the Town of Southampton.

The contentions are organized by general subject matter as follows:

SC Contentions 1-4:	Command and Control
SC Contentions 5-6 and Town of Southampton Contention 1:	Emergency Planning Zone
SC Contentions 7-18:	Accident Assessment
SC Contentions 19-68, SOC Contentions 1-3, and Town of Southampton Contentions 2-3:	Protective Actions
SC Contention 69:	Emergency Operations Center
SC Contentions 70-76:	Security During a Radiological Emergency
SC Contention 77:	Medical and Public Health Support
SC Contentions 78-96 and SOC Contention 4:	Communications
SC Contentions 97-102 and SOC Contention 5:	Public Notification/Information
SC Contentions 103-106 and SOC Contentions 6-8:	Public Education
SC Contentions 107-124:	Training
SC Contentions 125-132:	Recovery and Reentry
SC Contention 133:	State Emergency Plan
SOC Contention 9 and Town of Southampton Contention 4:	Staffing
SOC Contentions 10-13:	Loss of Offsite Power
SOC Contention 14:	Bad Weather

CONTENTIONS

SC Contentions 1-4: Command and Control

Preamble to SC Contentions 1-4. 10 CFR Part 50, Appendix E, Section IV.A, requires emergency plans to describe "[t]he organization for coping with radiological emergencies . . . , including definition of authorities, responsibilities, and duties of individuals assigned to the licensee's emergency organization" It further requires "[i]dentification of the State and/or local officials responsible for planning for, ordering, and controlling appropriate protective actions, including evacuations when necessary." Appendix E, Section IV.A.8. In the LILCO Transition Plan, in place of "State and/or local officials," LILCO employees are identified as being responsible for "planning for, ordering, and controlling" the entire offsite emergency response. Thus, all the command and control functions, as well as all management and coordination of the entire emergency response, are to be performed by various LILCO employees. (Plan, at 3.1-1; OPIPs 2.1.1, 3.1.1, 3.6.1). Accordingly, the "offsite authorities responsible for coordinating and implementing offsite emergency measures," with whom the LILCO onsite emergency coordinator must exchange information (see 10 CFR Part 50, Appendix E, Section IV.A.2.c), are fellow LILCO employees.

As specifically alleged in Contentions 1-4 below, Suffolk County contends that there cannot and will not be "offsite emergency preparedness [that] provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency" at Shoreham because LILCO employees are not able (for both legal and factual reasons) to exercise effectively the command and control responsibilities necessary to plan for, order, manage, coordinate and control appropriate protective actions. Thus, in Contentions 1-4, below, it is contended that the LILCO Plan fails to comply with 10 CFR Sections 50.47(a)(1), 50.47(b)(1) and Appendix E, Section IV.

SC Contention 1. The LILCO Transition Plan specifies that in an emergency, the actions listed in (A) through (I) below may be ordered to be taken by LILCO personnel. LILCO personnel do not have the authority to order or to perform those actions. Indeed, New York law explicitly prohibits LILCO from performing the following actions which LILCO proposes to take under the Transition Plan:

A. Directing traffic (see OPIP 3.6.3, at 5-6, and Attachments 1 and 4 thereto; see also Appendix A "Traffic Control," at IV-5 et seq.). N.Y. Veh. & Traf. Law §§1102, 1602 (McKinney); N.Y. Penal Law §§190.25(3), 195.05, 240.20(5) (McKinney); N.Y. Transp. Corp. Law §30 (McKinney);

B. Blocking roadways (see OPIP 3.6.3, at 8). N.Y. Veh. & Traf. Law §1114 (McKinney); N.Y. Penal Law §§190.25(3), 195.05, 240.20(5) (McKinney); N.Y. Transp. Corp. §30 (McKinney);

C. Setting up barriers in roadways, or channeling traffic (id.). N.Y. Veh. & Traf. Law §1114 (McKinney); N.Y. Penal Law §§190.25(3), 195.05, 240.20(5) (McKinney); N.Y. Transp. Corp. §30 (McKinney);

D. Posting traffic signs on roadways (see OPIP 3.6.3, at 9; see also Appendix A at IV-82). N.Y. Veh. & Traf. Law §1114 (McKinney); N.Y. Penal Law §§190.25(3), 195.05, 240.20(5) (McKinney);

E. Removing obstructions from public roadways, including the towing of private vehicles (see OPIP 3.6.3, at 1, and Attachment 2 thereto). N.Y. Penal Law § 165.05 (McKinney);

F. Activating sirens and directing the broadcast and contents of emergency broadcast system ("EBS") messages to the public (see OPIP 3.3.4). N.Y. Penal Law §§190.25(3), 195.05 (McKinney);

G. Making decisions and official recommendations to the public as to the appropriate actions necessary to protect the public health and safety, including deciding upon and recommending protective actions, deciding upon and directing the

control of food, water, milk and livestock in the ingestion pathway EPZ, and deciding upon and directing recovery/reentry operations (see generally, Plan, Chapters 2 and 3). N.Y. Penal Law §§190.25(3), 195.05 (McKinney);

H. Performing law enforcement functions at the EOC and at relocation centers (see OFIP 2.1.1, at 51; OPIP 4.2.1). N.Y. Penal Law §§190.25(3), 195.05, 240.20(5) (McKinney); N.Y. Transp. Corp. §30 (McKinney); N.Y. Veh. & Traf. Law §§1102, 1602 (McKinney);

I. Dispensing fuel from tank trucks to automobiles along roadsides (see Appendix A at IV-192). Suffolk County Sanitary Code, Article 12; town fire prevention codes. The single legal authority referenced in the LILCO Plan (see Attachment 1.4.1) does not support LILCO's purported right to exercise such responsibilities, contrary to the requirement of NUREG 0654, Section II.A.2.b. Indeed, in its June 23, 1983 Report to the NRC on its review of the LILCO Transition Plan against the standards and criteria in NUREG 0654 (hereinafter, "FEMA Report"), FEMA identified as an inadequacy in the Plan constituting non-compliance with NUREG 0654, Section A.2.b, the fact that "the legal authority cited in Attachment 1.4.1 to the [P]lan (10 CFR 50.47) does not specifically grant the necessary police powers to a licensee to implement those aspects of an

off-site emergency response requiring the exercise of governmental authority." (FEMA Report, at 2-3). Accordingly, LILCO cannot, as a matter of law, exercise such responsibilities, and therefore its Plan could not and would not be implemented.

SC Contention 2. The LILCO Transition Plan is premised on the belief that LILCO personnel will, in fact, be able to exercise command and control functions which are specified in that Plan. Suffolk County contends that LILCO personnel will not be able to exercise proper or effective command and control of response to a Shoreham emergency because:

A. LILCO personnel will not be adequately familiar with the site-specific conditions in Suffolk County. The site-specific conditions as to which familiarity is essential are the County's geography, topography, road network, demography, and the locations, characteristics and capacities of schools and other institutions and volunteer organizations. It is further essential that LILCO personnel be familiar with the legal and jurisdictional limitations of their own authority and that of other entities who may assist or participate in response to a Shoreham emergency. Familiarity with, and complete understanding of, such facts and conditions are essential to

the effective management and coordination of emergency response. Those in command and control positions must be able to make prompt and informed decisions dealing with circumstances and events that may not be contemplated or specifically provided for in a written emergency plan.

LILCO personnel lack the necessary familiarity with local conditions. Many of the command and control personnel do not reside in the Shoreham vicinity and thus will not have the day-to-day familiarity with conditions in Suffolk County which is essential to effective command and control. Suffolk County does not believe that such familiarity can be taught to LILCO personnel, because the essential knowledge of such facts can only be obtained if classroom training is reinforced by day-to-day responsibilities and experience which require knowledge of the local conditions. LILCO personnel do not have such training or experience. Thus, LILCO command and control personnel will not be aware of how the various entities, institutions, organizations and the population operate, or interact with each other, on a day-to-day basis or in an emergency situation. People from outside the immediate locality, unfamiliar with the internal workings of the community and lacking necessary training and experience, will be unable to fulfill command and control responsibilities effectively during an emergency. See also SC Contentions 107-124: Training.

B. The Plan fails to identify the title of the LILCO officer who will fill the role of Director of LERO (OPIP 2.1.1 at 5), which the FEMA Report identified as an inadequacy constituting non-compliance with NUREG 0654, Section A.1.d (FEMA Report, at 2).

C. The LILCO employees in command and control positions may experience a conflict between LILCO's financial and institutional interests and the public's interest, which may substantially hamper their ability to perform the functions assigned to them in a manner that will result in adequate protection of the public. Specifically, the fact of Shoreham's operation resulting in danger to the public is contrary to LILCO's often repeated public relations statements made to the public. Suffolk County contends that LILCO employees will have an incentive to minimize the public's perception of the potential or actual danger involved an actual radiological emergency in order to avoid engendering public or LILCO shareholder disapproval of LILCO, or anti-Shoreham sentiment. Thus, for example, they may not recommend an appropriate protective action because to do so would be contrary to LILCO's financial interest in maintaining a public perception that Shoreham is not a source of danger. LILCO has failed to institute appropriate measures (comparable to those required by 10 CFR

Part 50, Appendix B, Criterion 1 for QA/QC personnel) to ensure the independence of LERO personnel. Accordingly, there is no assurance that correct and appropriate command and control decisions will be made by LILCO employees.

D. The LILCO plan is premised on the belief that LILCO personnel in command and control positions will be willing to report promptly for duty in the event of a radiological emergency. Suffolk County contends, however, that the LILCO employees in command and control positions will be reluctant to leave a relatively safe area outside the EPZ to enter into a more dangerous area within the EPZ to exercise command and control and supervisory responsibilities. This reluctance may result in some command and control personnel not reporting at all or attending to the safety of their own families prior to reporting to perform their assigned emergency functions. Role conflict for emergency workers was a documented problem at TMI, especially concerning medical personnel; behavior surveys conducted by Suffolk County demonstrate that this will be a problem in a Shoreham emergency as well.

The "Emergency Worker Tracker System," which LILCO asserts will "ensure that the immediate families of all emergency workers are provided for throughout the incident," (Plan, at 2.1-7 and 2.1-8) has not even been developed yet, and therefore cannot be relied upon by LILCO to eliminate role conflict.

E. The LILCO Plan is premised on the assumption that LILCO employees will be available to implement command and control directives. However, the LILCO employee work force upon which the Plan relies will not be promptly available to perform the duties and emergency response functions assigned to them under the LILCO Plan due to notification difficulties (workers may not be reachable when needed because they are away from home; if there is a delay in notification, telephone lines used for notification may be jammed), extended mobilization times (although the LILCO Plan fails to provide estimated notification and mobilization times for emergency response personnel, the County believes, based on surveys of emergency mobilization of its police force, that LERO mobilization will take at least 4-6 hours; further, role conflict difficulties for LILCO personnel will result in lack of or further delay in arrival of LILCO personnel), and labor strikes or work stoppages. As a result of LILCO worker unavailability and delays in reporting, command and control directives would not be implemented.

SC Contention 3. The LILCO Plan assigns to LILCO employees the responsibility of command and control over the personnel in various support organizations, including unidentified medical personnel, the American Red Cross, Brookhaven National Laboratory ("BNL") personnel, and ambulance/fire/rescue

personnel. (See OPIP 2.1.1). LILCO's attempt to exercise such authority conflicts with the normal chains of command, assignment of responsibilities, and internal operating procedures according to which these organizations function. It is thus likely that these support personnel will fail to carry out tasks and responsibilities unilaterally assigned to them under the LILCO Plan or ordered by LILCO command and control personnel in that:

A. LILCO has no agreements from these organizations or individuals to follow LILCO's command and control directives. Therefore, there is no assurance that the procedures set forth in the Plan, or other procedures that may be ordered by LILCO personnel during an emergency, will be followed by non-LILCO employees, particularly in the event that the support organization supervisors or the individual emergency workers decide that a different procedure would be better or more appropriate in a given situation. Indeed, support organizations have their own plans and procedures which may differ significantly from the LILCO Plan and its implementing procedures. The LILCO Plan is deficient in failing to include plans and procedures covering the performance of emergency services by the support organizations relied upon in the LILCO Plan.

B. LILCO has provided no training for non-LILCO support personnel and the training which supposedly is planned is not described in the Plan. Thus there is no assurance that necessary training required by 10 CFR §50.47(b)(14) and (15) can and will be provided. See also SC Contentions 107-124: Training.

C. The Plan fails to indicate that the emergency response personnel relied upon in the LILCO Plan (both LILCO employees and other support personnel), will be indemnified by LILCO for injuries or liabilities to third parties which may be incurred during training drills or exercises, or in responding to an emergency under the command and control of LILCO personnel. As a result, emergency response personnel, particularly those not employed by LILCO, may refuse to obey command/control directives, and thus may not carry out tasks and responsibilities assigned to them under the LILCO Plan.

D. LILCO is not considered by the public to be a credible source of information. Indeed, in a detailed survey conducted on behalf of Suffolk County by Social Data Analysts, it was determined that more than 60 percent of the people in Suffolk County (including 62-65 percent of the population within 10 miles of the plant) would not trust LILCO officials at all to tell the truth about an accident. Individuals in

voluntary support organizations or other response personnel upon whom the LILCO Plan relies, being members of the public, can be expected to share this opinion. Persons are more likely to question or disobey orders given by persons whom they do not believe than orders given by authorities they trust and consider credible. Therefore, it is likely that orders from LILCO employees will not be obeyed by the volunteer non-LILCO workers relied upon in the Plan. Accordingly, there is no assurance that the portions of the LILCO Plan involving participation of non-LILCO personnel can or will be implemented.

SC Contention 4. The residents of Long Island do not view LILCO as a credible source of information. (See SC Contention 3, subpart D). As a result, the LILCO employees in command and control positions, as well as any statements or recommendations they make, will be viewed with skepticism and suspicion, and perhaps hostility. LILCO's lack of credibility will cause a substantial portion of the public to ignore orders or recommendations given to them by LILCO employees. As a result, there is no assurance that with LILCO employees in positions of command and control, adequate protective measures will in fact be accomplished in the event of an emergency.

SC Contentions 5-6 and Town of Southampton Contention 1:
Emergency Planning Zone ("EPZ")

Preamble to SC Contentions 5-6. 10 CFR Section

50.47(a)(1) prohibits the NRC from issuing an operating license absent a finding that emergency preparedness exists for the offsite area surrounding a nuclear power plant. The Commission must find that the state of emergency preparedness provides "reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency." Id.

A major source of radiation exposure in the event of a radiological emergency is that received as a result of direct contact with a radioactive plume and/or from inhalation of radioactive gases and particles within the plume. Thus, the NRC requires the development of a plume exposure EPZ around each plant as the basis for planning for a radiological emergency. 10 CFR Sections 50.47(b)(10), 50.47(c)(2) and Appendix E, Sections II.n.2 and IV.

"EPZs are defined as the areas for which planning is needed to assure that prompt and effective actions can be taken to protect the public in the event of an accident." NUREG 0654, Section I.D.2. The "overall objective" is to provide planning and a state of preparedness that will prevent exposure to the public above the EPA's Protective Action Guides

("PAGs"). 10 CFR Section 50.47(b)(10) requires that planning for protective actions must be consistent with Federal guidance such as the PAGs. Under the PAGs, protective actions should be commenced in the event of potential exposure of members of the public in the range of one to five rems. NUREG 0654, Section I.D.1.

Under the NRC's rules, plume exposure EPZs are generally 10 miles in radius. However, the rules make clear that the 10-mile size is not an absolute; "[t]he exact size and configuration of the EPZs surrounding a particular nuclear power reactor shall be determined in relation to local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries." 10 CFR Section 50.47(c)(2).

SC Contention 5. LILCO's Plan proposes a plume exposure pathway EPZ of approximately 10 miles in radius. (See Plan Figure 3.5.1 and Appendix A, Figure 3.) Suffolk County contends that LILCO's proposed 10-mile EPZ is inadequate in size. In fact, an EPZ of approximately 20 miles is necessary under the site specific circumstances existing on Long Island because: (a) radiation doses in excess of 1-5 rems will occur out to approximately 20 miles and, accordingly, the Plan must provide for protective actions for those persons residing in

those areas; and (b) persons beyond 10 miles from the plant can be expected to evacuate voluntarily or to take other protective actions in the event of a Shoreham emergency and, accordingly, the EPZ must be sized appropriately to account for these persons. Because LILCO has failed to plan for adequate protective measures for persons beyond the 10-mile zone who have a substantial chance of receiving health-threatening doses in the event of a radiological emergency, the Plan fails to comply with 10 CFR Section 50.47(b)(10). Thus, there can be no reasonable assurance of emergency preparedness as required by 10 CFR Section 50.47(a)(1). The bases for this need for a 20-mile EPZ are set forth below:

A. Health Consequences. A Shoreham-specific consequence analysis (F.C. Finlayson and Edward P. Radford, "Basis for Selection of Emergency Planning Zones for the Shoreham Nuclear Power Plant, Suffolk County, New York," (Draft), October, 1982) has been conducted which takes into account, among other things, the meteorological and topographic characteristics of the areas surrounding the Shoreham plant. This analysis demonstrates that in the event of a core-melt accident at Shoreham, there could be doses far in excess of PAG levels at the edge of the 10-mile EPZ. In the event of an especially severe accident, persons in areas beyond the LILCO 10-mile EPZ would

have a 35 percent chance of receiving 200 rems and a 60 percent chance of receiving 30 rems. (200 rems represents the threshold level for early deaths; 30 rems is the level at which detectable damage to the body occurs). These consequences are more severe than those contemplated when the generic 10-mile EPZ was devised (see NUREG 0396; NUREG 0654). Even in the event of a less severe accident, persons in areas beyond the LILCO 10-mile EPZ would have a 50 percent chance of receiving 10 rems, and a 20 percent chance of receiving 30 rems. Again, these projected doses are well above PAG levels.

Under the site-specific circumstances existing on Long Island, at 20 miles from the plant there is less than a one percent chance of receiving a 30 rem dose (detectable physical damage can result from such a dose) for the spectrum of core melt accidents. For more severe core melt accidents, at 20 miles there is less than a one percent chance of receiving 200 rems. Thus, a 20 mile EPZ is necessary in order to provide planning and preparedness for protective actions necessary to mitigate doses that could produce early injuries or death.

Suffolk County contends that such preparedness is required by 10 CFR Section 50.47(b)(10), since "[g]uidelines for the choice of protective actions during an emergency, consistent with Federal guidance, [must be] developed and in place." The

Shoreham-specific consequence analysis demonstrates that under certain accident scenarios exposures of five rems or more are likely out to 20 miles from the plant. The Federal PAGs require the commencement of protective actions at a potential exposure of one to five rems. In failing to provide for the commencement of protective actions anywhere beyond the 10 mile area defined by LILCO, the LILCO Plan is thus inconsistent with Federal PAGs and in violation of 10 CFR Section 50.47(b)(10).

B. Planning for the Population Which Will Respond to a Shoreham Accident. The need for a 20-mile EPZ is also supported by the fact that significant numbers of people outside of 10 miles from the plant will voluntarily evacuate or otherwise take protective actions even if not ordered to do so. A high proportion of the voluntary evacuees will be from the eastern end of Long Island. Due to their perception that they would be trapped if the wind blew to the east, many east end residents will choose to evacuate in the event of an emergency at Shoreham. In voluntarily evacuating, they will move to the west, in some cases entering the 10-mile EPZ. In order to protect these people, and to ensure that their voluntary evacuation does not adversely affect people within 10 miles of the plant, the EPZ must be extended so that detailed planning encompasses the people to the east of the plant. Further, large

numbers of people to the west of the plant may voluntarily evacuate, creating congestion for those attempting to leave the 10-mile EPZ proposed by LILCO and also affecting the safety of those people east of the plant who may voluntarily evacuate. Again, extension of the EPZ to the west to encompass those persons who may be involved in protective actions is essential.

There is concrete evidence to support the need in Suffolk County for planning beyond 10 miles to account for those people evacuating voluntarily. First, during the TMI accident, large numbers of people evacuated voluntarily. Whereas the evacuation order recommended that 2500 pregnant women and preschool children within 5 miles of the plant leave as a precaution, in fact over 144,000 people left. The TMI accident thus documented the existence of the "evacuation shadow phenomenon," which is the propensity for people to evacuate from areas perceived to be dangerous, even though such evacuation may not be ordered or recommended.

A detailed survey of Long Island residents conducted by Social Data Analysts and carefully reviewed by Drs. James Johnson and Donald Zeigler, Suffolk County consultants, has indicated that in the event of a radiological emergency at Shoreham, the evacuation shadow would be quite large. In fact, voluntary evacuees will outnumber, by many times, the number of

persons who will evacuate because they are ordered to do so. For instance, 31,000 families live within 10 miles of the Shoreham plant. If there were a recommendation to evacuate only the 10-mile EPZ around Shoreham, approximately 432,000 families (about half the population of Long Island) would attempt to evacuate. Even if a sheltering recommendation were made only for the population within five miles of the plant, approximately 217,000 families would attempt to evacuate.

Accordingly, in addition to the significant health reasons discussed above, an EPZ of at least 20 miles is necessary in order to provide planning and preparedness for the movement and relocation of the large number of people likely to be on the roads in the event of a Shoreham emergency. This is especially so given the facts that Suffolk County is densely populated, especially to the west of the plant, and that only a limited east-west roadway network is available to accommodate the hundreds of thousands of cars expected to be on the roads in the event of an accident at Shoreham. Almost all evacuees, whether voluntary or not, will choose to travel toward the west.

Furthermore, analyses have shown that there will be considerable queuing in areas outside of the 10-mile EPZ, but well within 20 miles of the plant. As discussed above, evacuees

caught in such queues may receive substantial and unacceptable doses of radiation.

In light of the anticipated reaction of a large segment of the public in the event of an emergency, and the resulting effects on health and traffic in the area, means must be established for all persons within at least 20 miles of the plant to be notified promptly of a radiological emergency. In this way, those who do decide to evacuate will be properly alerted and will be provided with necessary factual information about the emergency and the appropriate response, thereby diminishing somewhat the fear and lack of knowledge that could cause confusion and impede an evacuation. For the same reason, LILCO should provide adequate educational materials to all persons within 20 miles of Shoreham. Without such preparedness, there can be no assurance that (a) evacuees from beyond the 10 mile EPZ will not impede the evacuation of those who are ordered to evacuate, resulting in evacuees receiving health-threatening radiation doses; or (b) those who choose to evacuate will be able to do so safely and efficiently.

SC Contention 6. 10 CFR Section 50.47(c)(2) provides that one of the elements essential to defining the configuration of an EPZ is the location of local jurisdictional boundaries. Thus, it is good emergency planning practice to

include, if possible, the entire area of a local municipality within the boundaries of an EPZ. At a minimum, an EPZ should avoid dividing major population centers within a local municipality. See NUREG 0654, Section I.D.a.

Suffolk County contends that LILCO's EPZ fails to meet the criteria of 10 CFR Section 50.47(c)(2) and NUREG 0654 because the proposed LILCO EPZ runs through and divides the village of Port Jefferson and Terryville and the town of Riverhead. The EPZ should be extended to include the entirety of Port Jefferson and Terryville and additional portions of Riverhead (those portions in the area 1-2 miles to the immediate east of the proposed EPZ which contain dense population and Riverhead's business district).

Town of Southampton Contention 1. 10 CFR 50.47(a)(1) prohibits the NRC from issuing an operating license unless it finds that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. Adequate emergency planning requires, inter alia, a finding that procedures for notification of the public and a range of protective actions have been developed for the plume exposure pathway for workers and the public. The regulations further provide that "generally, the plume exposure EPZ for nuclear power plants shall consist of an area about two

miles (16 km) in radius, with the exact size and configuration of the EPZ to be determined in relation to local emergency response needs and capabilities as they are affected by such conditions and demography, topography, land characteristics, access routes and jurisdictional boundaries".

The area of Long Island which lies east of the Shoreham nuclear plant and east of LILCO's proposed EPZ (including the towns of East Hampton, Southold, Shelter Island, most of Riverhead and virtually all of Southampton) possesses a number of distinguishing characteristics, which taken together, make this area unique from the point of view of emergency planning. Among these distinguishing characteristics are such characteristics as the following:

A. Significant seasonal increase in population, particularly during the five months of May through September;

B. A highly transient, dispersed seasonal population, much of which depends upon inadequate public and private transportation;

C. A road network which is seriously inadequate to accommodate this seasonal population and which is heavily congested during ordinary seasonal conditions;

D. Due to Long Island's configuration, the inadequate road network on the north and south forks connects to two

principal east-west arteries, the Long Island Expressway and Sunrise Highway, both of which pass through LILCO's proposed EPZ;

E. The area east of the EPZ provides no means of exodus to the east, meaning that persons deciding to evacuate must travel towards and through LILCO's EPZ;

F. The governmental resources available to control, communicate with, direct, shelter, provide security and otherwise accommodate this seasonal population are seriously inadequate;

G. Studies have demonstrated that significant portions of the population east of the EPZ will in fact evacuate, even if told not to, which may lead to a doubling of the population which LILCO assumes will pass through its proposed EPZ;

H. One of the five towns east of the EPZ (Shelter Island) is itself an island, which further aggravates its traffic and transportation concerns; and

I. In addition to the complications caused by seasonal population, transportation east of the EPZ is seriously affected by flooding and snow storms at various times during the year.

Southampton contends that LILCO has failed to take these factors into account in developing its EPZ and its protective actions and accordingly, that its emergency plan will not

adequate protect the public as required by 10 CFR 50.47(a)(1), (b) and (c)(2). Specifically, Southampton contends that:

(i) LILCO has not evaluated the impact of spontaneous evacuation east of the zone in terms of its effect on evacuation from within the zone;

(ii) LILCO has not considered whether the emergency planning measures proposed for its EPZ provide an adequate response base to support similar measures beyond the EPZ should that be necessary. Southampton contends that these measures do not provide an adequate response base and that this requires emergency planning at this time for the area east of the EPZ;

(iii) Failure to develop emergency planning measures for the area east of the EPZ at this time will result in uncontrolled, chaotic evacuation should a serious accident occur at Shoreham, thereby affecting LILCO's efforts to manage evacuation from within its EPZ and causing fear, panic, accidents, looting, possible violence and other phenomena beyond the control of the officials in the area east of the EPZ;

(iv) LILCO's emergency plan must be expanded to include the area east of the EPZ in that the spontaneous evacuation of that area's population may bring them in

contact with levels of radiation requiring protective action; and

(v) LILCO has not adequately provided for communications, security, blockades, relocation centers, medical facilities or any other protective actions required by 10 CFR 50.47(b) for the area east of the EPZ in order to mitigate the impact of spontaneous evacuation on LILCO's proposed EPZ or to prevent any such impact altogether.

SC Contentions 7-18: Accident Assessment

Preamble to SC Contention 7-18. 10 CFR Section

50.47(b)(9) requires offsite plans to provide that:

Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.

Part 50, Appendix E similarly requires that "[t]he means to be used for determining the magnitude of and for continually assessing the impact of the release of radioactive materials shall be described" 10 CFR Section 50, Appendix E, at Section IV.B. Similarly, NUREG 0654, Section II.I.8, requires the identification of an appropriate organization which

shall provide methods, equipment and expertise to make rapid assessments of the actual or potential magnitude and locations of any radiological hazards through liquid or gaseous release pathways. This shall include activation, notification means, field team composition, transportation, communication, monitoring equipment and estimated deployment times.

Appendix E further provides that the plan must include a description of "the emergency action levels that are to be used for determining when and what type of protective measures should be considered within and outside the site boundary to protect health and safety. The emergency action levels shall be based on in-plant conditions and instrumentation in addition to onsite and offsite monitoring." Id.

Suffolk County contends that the LILCO Plan fails to comply with these requirements for the reasons set forth in SC Contentions 7-18.

SC Contention 7. The LILCO Plan appears to rely exclusively on personnel from Brookhaven National Laboratory ("BNL") for all offsite accident and dose assessment and projection, as well as for all command, control and coordination functions related to offsite accident assessment and the decision to recommend particular protective actions to the LILCO Director of LERO (i.e., the Radiation Health Coordinator, Environmental Assessment Coordinator, Dose Assessment Teams, Environmental Survey Coordinator, and Offsite Survey Teams). (Plan, Section 3.5.B; Figure 3.5.2; OPIPs 2.1.1, 3.5.1, 3.5.2, 3.5.3 and 3.5.6) The Plan does not identify by name, title or qualification the BNL and/or FRMAP personnel who are expected to perform offsite accident and dose assessment functions and thus fails to comply with NUREG 0654, Section II.A.2.a.

SC Contention 8. The Plan does not describe the training to be provided for BNL and/or FRMAP personnel which is necessary to ensure adequate performance of offsite accident and dose assessment functions and thus fails to comply with 10 CFR Section 50.47(b)(15) and NUREG 0654 Section II.0.C.

SC Contention 9. The Plan does not include any agreements with BNL, FRMAP or BNL employees which identify the services to be provided, the criteria for their implementation or the arrangements for exchange of information, or which obligate them to perform the functions for which they are relied upon by LILCO. The Plan thus fails to comply with NUREG 0654, Section II.A.3.

SC Contention 10. The Plan does not identify an individual at BNL who will be responsible for assuring continuity of technical, administrative and material resources. In addition, there is no assurance that BNL is capable of providing continuous services (24-hour) for a protracted period. Thus the Plan fails to comply with NUREG 0654, Section II.A.4. Indeed, the Plan provides for: only one BNL representative, respectively, to act as Radiation Health Coordinator, Environmental Assessment Coordinator, and Environmental Survey Coordinator; only two BNL representatives to comprise the Dose Assessment Staff; and only four BNL representatives to comprise the two Survey Teams. (Plan, Figure 2.2.1 at 2) Thus, even assuming arguendo that the initial staffing for offsite monitoring and dose assessment were adequate, there is no provision in the LILCO Plan for augmentation of that initial staffing on a continuous basis as required under 10 CFR Section 50.47(b)(1) and NUREG 0654, Sections II.A.1.e and A.4.

SC Contention 11. The Plan does not include expected times of arrival of BNL or FRMAP personnel at the emergency operations center ("EOC") or other locations where they are expected to provide emergency services, and therefore fails to comply with NUREG 0654, Section II.C.1.b. This fact was identified by FEMA as an inadequacy constituting non-compliance with NUREG 0654 Section I.8. (FEMA Report at 7) There is thus no assurance that the necessary BNL or FRMAP personnel would be capable of providing necessary accident and dose assessment services on a timely basis.

SC Contention 12. The Plan relies upon commercial telephone for notification of the necessary BNL personnel (Plan, Attachment 2.2.1, at 2); no backup communication system is provided. In the event of an emergency, commercial telephone lines are likely to be overloaded. (See SC Contentions 78-96 -- Communications) Further, there is no assurance, even if telephones are not overloaded, that necessary BNL personnel will be able to be contacted by phone. A system for notification of these personnel when they are away from phones is necessary but has not been provided. There is thus no assurance that the necessary offsite accident and dose assessment personnel will receive timely notification of an emergency, and thus the Plan fails to comply with 10 CFR Sections 50.47(b)(3),

50.47(b)(6) and Appendix E, Section IV.D.1, and NUREG 0654, Section II.F.1.

SC Contention 13. The LILCO Plan indicates that the information on fission product releases to be provided by Shoreham to LERO is limited to noble gases and iodines. (Plan, Figure 3.3.3, at 2). Thus, LILCO has failed to comply with NUREG 0654 Section II.E.4.f, which requires such messages to include the "chemical and physical form of released material, including estimates of the relative quantities and concentration of noble gases, iodines, and particulates." (Emphasis added).

Similarly, NUREG 0654 Section II.I.10 requires that means be established

for relating the various measured parameters (e.g., contamination levels, water and air activity levels) to dose rates for key isotopes (i.e., those given in Table 3, page 18) and gross radioactivity measurements. Provisions shall be made for estimating integrated dose from the projected and actual dose rates and for comparing these estimates with the protective action guides.

The referenced Table 3 lists radionuclides with significant contribution to dominant exposure modes, and includes several radionuclides in addition to noble gases and iodines. Neither the release information provided by Shoreham to BNL or LERO,

the dose projections developed by Shoreham, nor the dose projections to be calculated by BNL personnel include or take into account isotopes other than noble gases and iodines. (See OPIPs 3.5.2 and 3.6.1). Thus, LILCO has failed to comply with this requirement of NUREG 0654, and 10 CFR Section 50.47(b)(9). This noncompliance with NUREG 0654 Section I.10 was also identified by FEMA. (FEMA Report at 7) The result of LILCO's failure to take into account isotopes other than noble gases and iodines is that the dose projections to be used by the Director of LERO in making protective action recommendations to the public will be inaccurate and will be too low (i.e., non-conservative).

An example of a release isotope which should be included in dose projection calculations is Tellurium-132, which may have a life-threatening impact due to external exposure and/or inhalation. It has been predicted that 80 percent of the Tellurium inventory would be released in a severe core melt accident; this release isotope is identified as one of the largest health risks. (See WASH 1400, Appendix VI, Figure 13.1 and Figure 13.2). The Plan's failure to measure key isotopes such as Tellurium-132 (e.g. OPIP 3.6.1) is thus a significant deficiency contrary to the guidance of NUREG 0654, Section II.I.10.

SC Contention 14. The most sensitive scale (0-50mR/hr) of the instrument to be used in offsite radiation surveys (R0-2A) is not sensitive enough to provide accurate low level radiation measurements (i.e., one mR/hr) as required. (OPIP 3.5.1, at 4). Thus, LILCO has failed to comply with Section 50.47(b)(9).

SC Contention 15. The dose projection worksheets, liquid release worksheets, ground deposition calculations and required computations used for dose assessment projections and downwind surveys (OPIPs 3.5.2 and 3.5.3), are overly complicated and require unrealistically accurate communications of complex data from survey teams to assessment teams in order to obtain the required calculated results. In addition, there are no provisions in OPIPs 3.5.2 or 3.5.3 for dealing with missing data, failure of communications, conversion of units or use of conversion factors for alternate equipment. Thus, there is no assurance that those procedures will provide reliable data for use in making protective action decisions and, accordingly, there is no compliance with the Section 50.47(b)(9) requirement that an adequate method be provided for assessing the potential consequences of an offsite release.

SC Contention 16. The LILCO Plan does not include a description of the methods used for deriving the values for

calculating atmospheric transport and diffusion of the plume (see OPIP 3.5.2), and therefore there is no assurance that LILCO has complied with NUREG 0654, Section II.I.5.

SC Contention 17. The Plan provides for integrated dose calculation updates once every hour or once every four hours. The Plan also provides for analyses of samples at laboratories in Philadelphia, Pennsylvania; Maplewood, New Jersey; Rockville, Maryland; Pittsburgh, Pennsylvania; and Westwood, New Jersey. (See Plan, at 3.5-2 to 3.5-4). The wind speed on Long Island ranges from five to ten miles per hour 70 percent of the time and wind direction changes frequently, which could cause the plume to travel at a rate of speed and in directions that would make the proposed intervals between dose updates and the time necessary to obtain analyses results far too long. Such delays in obtaining accurate dose assessments could lead to incorrect protective action recommendations since by the time a dose calculation is made for one area the plume could have already proceeded to other areas. The failure to provide for integrated dose calculations every 15-30 minutes is a violation of 10 CFR Section 50.47(b)(9) and NUREG 0654 Section II.I.8.

SC Contention 18. The LILCO Plan identifies preselected dose sampling locations for areas within 11 miles

of the plant. (Plan, at Table 3.5.1). The Plan thus fails to comply with NUREG 0654 Section II.J.10.a, which requires the identification of sampling and monitoring points for areas up to 50 miles from the plant. Sampling and monitoring beyond the 10-mile EPZ is required to ascertain whether doses beyond the EPZ exceed the PAGs, requiring the initiation of protective actions.

SC Contentions 19-68, SOC Contention 1-3, and Town of
Southampton Contention 2-3: Protective Actions

Preamble to SC Contentions 19-68. 10 CFR Section
50.47(a)(1) provides:

No operating license for a nuclear power reactor will be issued unless a finding is made by NRC that the state of onsite and offsite emergency preparedness provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.

(Emphasis added). In addition, 10 CFR Section 50.47(b)(10) requires the development of a range of protective actions for the public; guidelines for the choice of protective actions must be consistent with Federal guidance. Such guidance includes the Manual of Protective Action Guides ("PAGs") (EPA-520/1-75-001), which sets forth the threshold projected dose levels at which protective actions are to be commenced. The PAGs are embraced in NUREG 0654, Sections II.J.7 and J.9, and are referenced in the LILCO Plan, at Section 3.6, and OPIP 3.6.1. NUREG 0654, in Sections II.J.9 and J.10, requires that there be established "a capability for implementing protective measures based upon protective action guides and other criteria." (Emphasis added).

A radiological emergency at the Shoreham plant could result in releases of radioactive fission products that would

subject the population in the 10-mile EPZ to doses substantially in excess of the PAGs. Specifically, in the event of a severe core melt accident, a person at the outer boundary of the 10-mile EPZ would have a 35 percent chance of receiving a 200 rem dose, and a 60 percent chance of receiving a 30 rem dose. Even in a less severe core melt accident, there would be a 20 percent chance of his receiving a 30 rem dose and a 50 percent chance of a 10 rem dose. Persons exposed to these dose levels are likely to experience adverse health effects which in some cases could be life-threatening. Specifically, 200 rems represents the threshold level for early deaths and 30 rems represents the dose level at which detectable damage to the body occurs. Cancer incidences and deaths attributable to radiation exposure increase in proportion to the increase in dose levels. Thus, persons within the EPZ will be exposed to dose levels that will result in early injuries, early deaths and increased incidences of cancer (about half of which will result in death).

Suffolk County contends that LILCO's Plan does not provide reasonable assurance that adequate protective measures can and will be implemented to protect the population from the hazards described above. Thus, Suffolk County contends that: (a) there is no reasonable assurance that the measures proposed in the

IMAGE EVALUATION
TEST TARGET (MT-3)

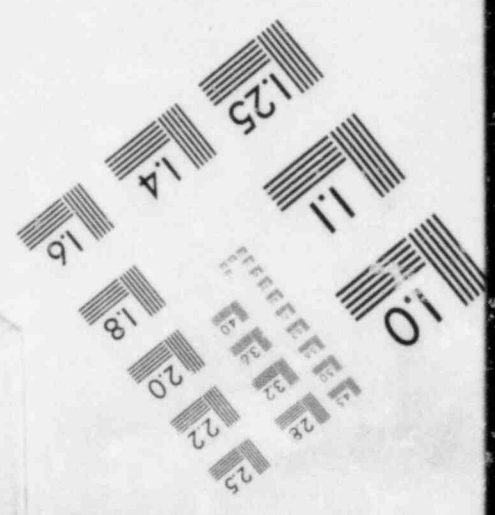
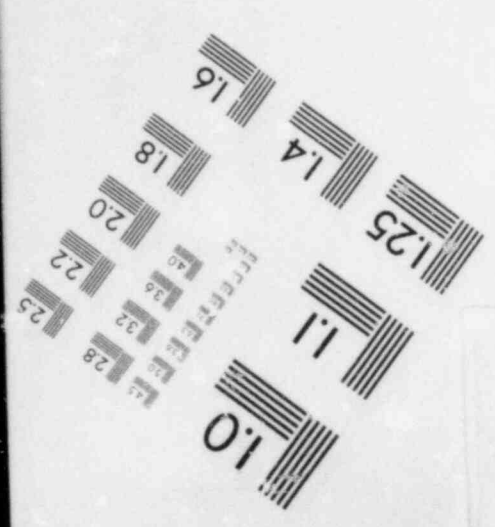
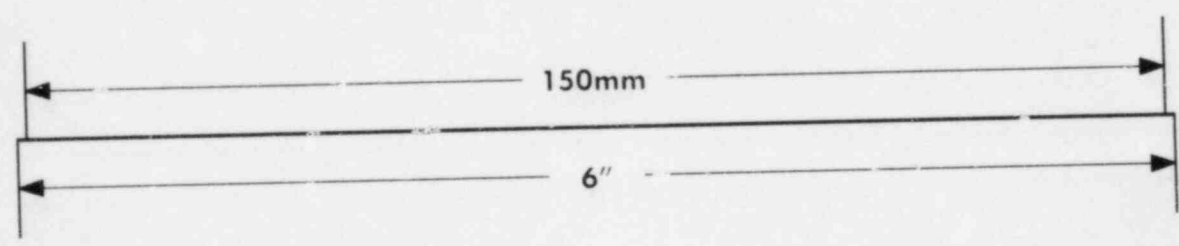
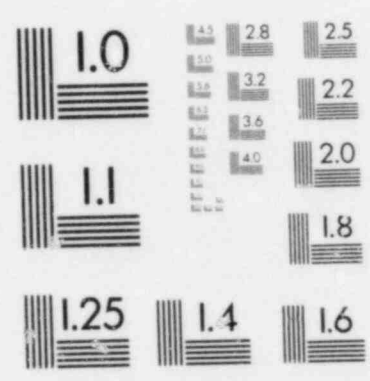
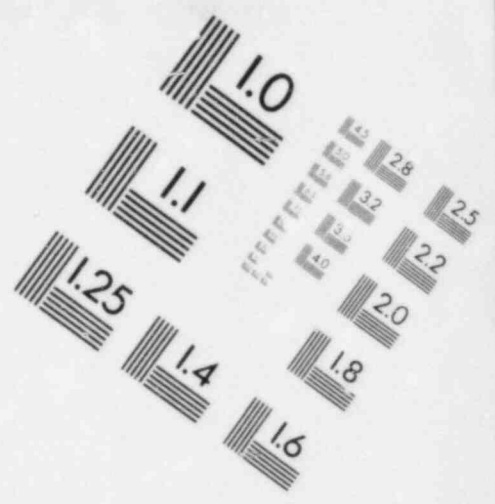
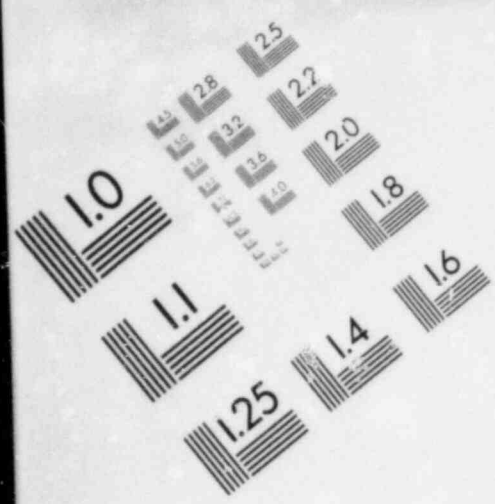
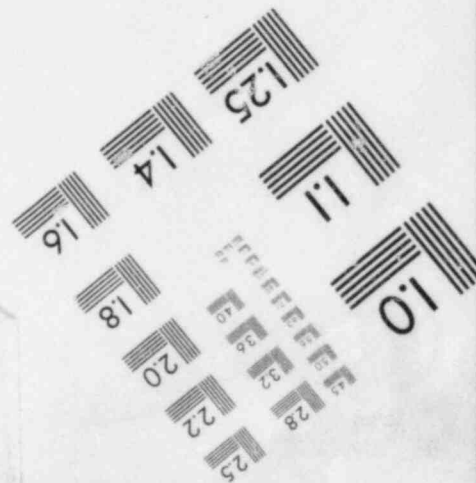
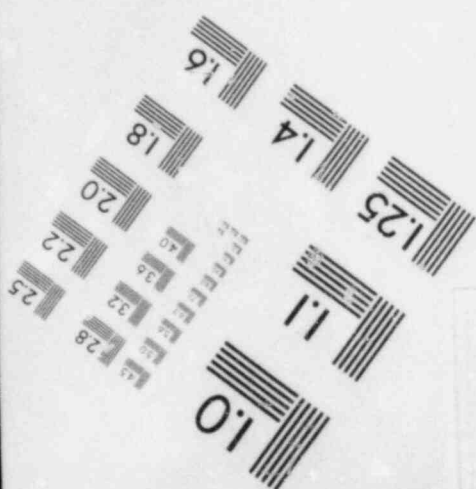
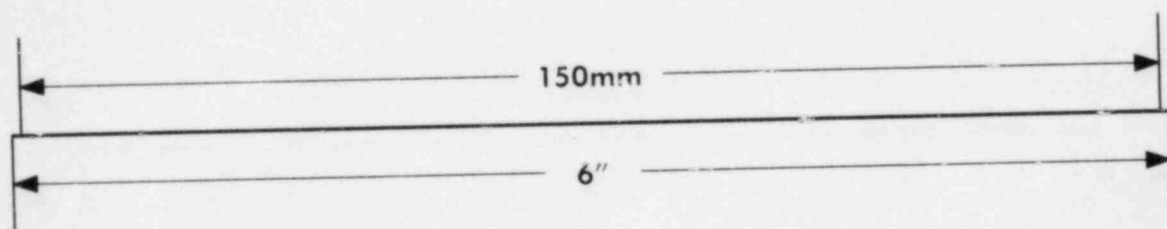
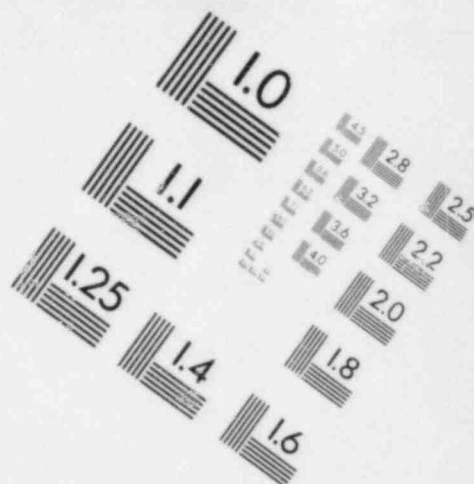
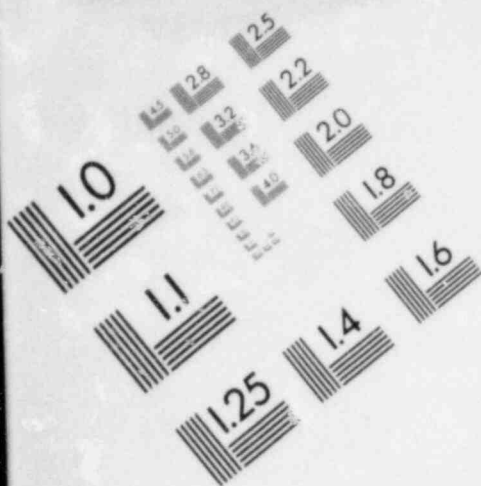


IMAGE EVALUATION
TEST TARGET (MT-3)



LILCO Plan would, if taken, provide adequate protection from the potential consequences of an emergency at Shoreham; and (b) there is no reasonable assurance that the proposed measures could or would in fact be taken in the event of an emergency.

The contentions which follow are divided into three broad groups (Sheltering, Evacuation, and Food, Milk, Water and Live-stock Control) and detailed contentions which apply to each protective action as proposed in the LILCO Plan.

SC Contentions 19-24: Sheltering

SC Contention 19. At page 3.6-5 of the LILCO Plan, LILCO states:

Th[e] protective action [of selective sheltering] may be ordered at projected doses below the accepted PAGs to minimize radioactive exposure, particularly to pregnant women and children In addition, the Selective Sheltering option may be recommended as an effective option for individuals who could not be safely evacuated. This would include individuals who have been designated medically unable to withstand the physical stress of an evacuation, as well as those individuals who require constant, sophisticated medical attention.

The Plan fails to set forth guidelines to be used by command and control personnel: (a) in choosing to recommend the protective action of selective sheltering; or (b) in determining the individuals who should or would be subject to such a recommendation. Rather, as quoted above, the Plan contains only generalized statements which, in fact, provide no adequate guidance at all. In addition, there are no procedures which indicate the means by which such a recommendation would or could be implemented. The Plan thus fails to comply with 10 CFR Section 50.47(b)(10) and NUREG 0654, Sections II.J.7, J.9 and J.10.m.

SC Contention 20. Contrary to the requirement of 10 CFR Part 50, Appendix E, Section IV, the Plan does not contain an

analysis of the time required for taking the protective action of selective sheltering. Thus, 10 CFR Section 50.47(a)(1) has not been satisfied because there is no assurance that selective sheltering constitutes an adequate protective measure that could or would be taken in the event of an emergency at Shoreham.

Further Preamble to SC Contentions 21-24. The LILCO Plan provides that the protective action of sheltering may be recommended (Plan, at 3.6-5), and that it is "the preferred protective action if sufficient protection is offered by sheltering, or if no additional benefit is gained by evacuation." (OPIP 3.6.1, Section 3.2). Suffolk County contends that as to the proposed protective action of sheltering, the LILCO Plan fails to comply with 10 CFR Section 50.47(a)(1) and NUREG 0654, Section II.J.9, because there is no assurance that sheltering, as a protective action, could or would be effectively implemented in the event of an emergency in a manner which would protect the public. Indeed, the facts indicate that many people will refuse to shelter and will, instead, choose to evacuate, and that many other persons, as a practical matter, will be unable to shelter. Thus, sheltering cannot be viewed as an adequate protective action, as LILCO appears to believe, for the reasons set forth in SC Contentions 21-24.

SC Contention 21. Suffolk County contends that a protective action recommendation of sheltering would not or could not be implemented. A survey of Long Island residents and the experience at TMI indicate that a substantial number of the people advised to shelter will choose to evacuate instead. Their reasons are likely to include the following:

A. Fear of a radiological emergency, heightened by their perception that such emergencies are unlike other disasters;

B. Lack of trust in LILCO's interest or ability to properly and objectively determine and recommend actions that are in the best interests of the public (see SC Contention 97); and

C. Lack of adequate and correct information due to LILCO's flawed public education program (see SC Contentions 103-106).

In addition, a substantial number of the people who might be advised to shelter, as a practical matter, will be unable to do so because:

D. A large number of the homes and other structures in the EPZ are constructed of wood and have no basements. According to LILCO's shielding factors (Plan, Table 3.6.5), the protection offered by such shelter is limited, at most, to a

reduction in dose of only 10 percent from that received with no shelter. As a practical matter, persons with access to such structures have little "shelter" available.

E. Persons who are traveling in their cars or other vehicles at the time of a sheltering recommendation may not be able to reach shelter fast enough to obtain any protection from a release of radioactive fission products. Vehicles offer essentially no protection from radioactive doses.

F. The Plan makes no provision for sheltering children in schools. There are no procedures indicating how, or under what circumstances, a sheltering order for schools would be made; nor are there any procedures indicating how, if at all, such an order could or would be implemented by the schools. In addition, if LILCO were to recommend that schools institute an early dismissal, and school authorities were to follow that recommendation, school children would not have access to shelter for hours (see SC Contention 40-42).

G. Transients who are on beaches, in parks or in other outdoor recreation areas will have no access to shelter.

H. Persons who are in boats in the EPZ will have no access to shelter.

I. Contrary to the requirement of NUREG 0654 Section J.10.a, the Plan fails to identify public sheltering areas.

This noncompliance was also identified by FEMA (FEMA Report, at 8).

SC Contention 22. Even if an initial announcement of an emergency indicates that persons in certain portions of the EPZ need not take any protective action, a survey of Long Island residents and the experience at TMI indicate that a substantial portion of the population, upon learning of the existence of an emergency at Shoreham, will decide to evacuate. This means that if the event were to escalate and a sheltering recommendation were then to be made, the voluntary evacuees would be unable to shelter because they would be in transit in their vehicles and sheltering would not be a viable protective action. Thus, they would be subjected to the full exposure of the passing radiation.

SC Contention 23. Even if people were willing and able to follow a sheltering recommendation, there is no assurance that taking such action would prevent persons in the EPZ from receiving health-threatening radiation doses. Thus, sheltering is not an adequate protective action in the event of a severe emergency at Shoreham, and the Plan, therefore, fails to comply with 10 CFR Sections 50.47(a)(1) and 50.47(b)(10), and NUREG 0654 Section II.J.9.

A. Based on LILCO's shielding factors (Plan, Table 3.6.5), those who take shelter in wood frame buildings without basements will receive 90 percent of the dose they would receive from the plume if they were outside the shelter.

B. Further, many other homes in the EPZ, even if they provide more shielding than a wood house, will only reduce doses about 50 percent. In a severe accident, a 50 percent dose reduction will still result in health-threatening doses.

C. According to LILCO, the average shielding factor available in the EPZ is 0.7, which means that, on the average, those who follow a sheltering recommendation will nonetheless receive 70 percent of the dose they would receive from the plume if they were outside the shelter.

D. The cloud doses resulting from a release of radioactive fission products from the Shoreham plant could be so substantial that even taking into account the 30 percent average dose reduction provided by shelter in the EPZ, persons who follow a sheltering recommendation could still receive doses that would cause adverse health effects. Thus, sheltering cannot be considered to be an adequate protective action.

SC Contention 24. The LILCO Plan makes no provision for relocation, or for monitoring the radiological exposure, of persons who have taken shelter from a passing plume. Rather,

after a sheltering order, the LILCO plan is silent regarding what action(s) a person is supposed to take at a later time. Relocation of sheltered persons and monitoring are likely to be necessary after plume passage to prevent people from receiving substantial doses, in addition to those received while in shelters, from ground contamination which will remain even after plume passage.

SC Contentions 25-60, SOC Contentions 1-3, and Town of
Southampton Contention 2: Evacuation
SC Contention 25. The LILCO Plan states at pages

3.6-5 to 3.6-6:

Selective Evacuation may be implemented to evacuate from the affected area of the plume exposure EPZ members of the general public who might have a low tolerance to radiation exposure. Specifically, this would include pregnant women and children 12 years and under.

The Plan fails to set forth guidelines to be used by command and control personnel: (a) in choosing to recommend the protective action of selective evacuation; or (b) in determining, identifying and locating the individuals who should be subject to such a recommendation. In addition, there are no procedures which indicate the means by which such a recommendation could or would be implemented. The Plan thus fails to comply with 10 CFR Section 50.47(b)(10) and NUREG 0654 Sections II.J.7, 9 and 10.

In addition, the Plan does not include an analysis of the time required for taking this protective action, and thus fails to comply with 10 CFR Part 50, Appendix E, Section IV, and NUREG 0654 Section II.J.8. There is thus no assurance that under the LILCO Plan, selective evacuation constitutes an adequate protective measure that could or would be taken in the event of an emergency at Shoreham.

Further Preamble to SC Contentions 26-35: Evacuation Time Estimates. Section IV of Appendix E to 10 CFR Part 50 requires that "[t]he nuclear power reactor operating license applicant shall also provide an analysis of the time required to evacuate and for taking other protective actions for various sectors and distances within the plume exposure pathway EPZ for transient and permanent populations." See also, NUREG 0654, Section II.J.8 and Appendix 4. Accurate estimates of the time necessary to evacuate the Shoreham EPZ (or portions thereof) are essential to evaluating the evacuation route system. In particular, such estimates must be accurate and reliable so that command and control personnel who are considering what protective actions might be ordered for particular persons can estimate whether, given projected release and dispersion of health-threatening fission products from the Shoreham plant, evacuation can be accomplished before such dispersion takes place. A decision to order evacuation, if based on inaccurate evacuation time estimates, could result in evacuees being trapped in queues or slow moving traffic inside or outside the EPZ during a release of fission products from the Shoreham plant, thus exposing those evacuees to potentially harmful doses of radiation.

LILCO has submitted evacuation time estimates for the 10-mile EPZ, which estimates are contained in Appendix A, at V-3, and OPIP 3.6.1, Attachment 4. LILCO estimates that the time for evacuation will vary from about two to two-and-one-half hours for only the inner EPZ sectors, to a maximum of approximately six hours for evacuation of the entire EPZ under adverse weather conditions.

LILCO's evacuation time estimates are so underestimated that an evacuation may be ordered which realistically cannot be completed prior to release and dispersion of fission products from the Shoreham plant. Evacuees will be caught in queues or delayed in heavily congested traffic within the EPZ. Under many accident conditions, there will be a dispersal of radioactive materials while such traffic conditions still exist, resulting in unacceptable health-threatening exposure to the evacuees. See Shoreham-specific consequence analysis (Finlayson, Radford, "Basis For Selection of Emergency Planning Zones for The Shoreham Nuclear Power Plant, Suffolk County, New York", Oct. 1982) which indicates that persons caught in those areas of congestion will be exposed to radiation doses well in excess of the PAG levels, and, therefore, will require protective actions. The automobiles of the evacuees will offer them essentially no protection from the plume.

Suffolk County contends that LILCO's evacuation time estimates are inaccurate, unreliable and, in fact, should be far longer. The specific deficiencies in the estimates are set forth in SC Contentions 26-35 below.

SC Contention 26. The LILCO evacuation time estimates ignore or underestimate the time required to mobilize people to be ready to evacuate. The LILCO estimates in Appendix A include only the time involved in the actual evacuation trip out of the EPZ. (Appendix A, Table XIV). On the other hand, LILCO assumes in OPIP 3.6.1 that mobilization of the public will take about 20 minutes from receiving notification.^{1/} LILCO thus grossly underestimates the time it will take to mobilize the population, especially during working hours. In fact, it will likely take at least from one to more than three hours for people to mobilize before they can begin to evacuate. This mobilization time will be required because:

A. Following activation of the prompt notification system, it will take time for people to become aware of the emergency, to become informed of the recommended protective actions and to determine their own course of action.

^{1/} The FEMA Report at 11-12 notes that the time estimates are inadequate in part because the estimates in OPIP 3.6.1 are incomparable to those in Appendix A.

B. Where possible, most families will seek to evacuate as a unit. Therefore, mobilization time must include time for travel necessary to assemble family groups, such as travel from work or other locations to home, and from work or home to schools and other locations to pick up children and relatives. In addition, some persons will seek to go to banks, stores and other such facilities for money and provisions.

C. It will take time for the evacuees to gather necessary provisions before evacuating. (See "Emergency Procedures: Shoreham Nuclear Power Station," at 8).

SC Contention 27. Travel within the EPZ during the mobilization period (work/home, home/school, to banks and stores, etc.) prior to commencing evacuation will result in heavy traffic congestion due to high demand and conflicting traffic flow (i.e., some traffic flow in directions different than prescribed evacuation directions). Such mobilization traffic will thus lengthen evacuation times. LILCO's estimates do not appear to take this cause of congestion and resulting evacuation delay into consideration. Thus, Suffolk County contends that the LILCO estimates are inaccurate for this additional reason.

SC Contention 28. The LILCO time estimates assume that in the event of an emergency, all people will know the

evacuation zone in which they are located, and the specific evacuation route prescribed by LILCO. (Appendix A, at V-2 see Plan, at 3.8.1 (EBS messages)). LILCO relies on its information brochure, telephone book inserts and posters to provide this information to the public. (Plan, at 3.8-2 to 3.8-4). However, LILCO's assumption that individuals will know their designated zones and prescribed routes is erroneous and unrealistic. (See listing of reasons in SC Contentions 104-106). If LILCO took into account the failure of evacuees to know and to be able to follow the prescribed evacuation routes, LILCO's evacuation time estimates would substantially increase.

SC Contention 29. The LILCO evacuation estimates and the computer model from which they are derived not only assume that the public will know the prescribed evacuation routes, but also that all persons will use only those prescribed evacuation routes. See, for example, Appendix A, at IV-19 which states:

It is essential . . . that each motorist enter the evacuation network on the specified links, and on no other network link.

If the motorist errs in this respect, he may find it impossible to travel toward his assigned destination without disrupting the flow of evacuating automobiles, increasing his own delay and that of many other evacuees.

(See also, Appendix A, at V-2). In fact, however, LILCO will

not be able to ensure that motorists will use only the prescribed routes for the reasons set forth below and thus the LILCO time estimates are inaccurate. Without LILCO's assumption that evacuees will follow prescribed evacuation routes, the LILCO evacuation time estimates would increase substantially.

A. Evacuees will not know the prescribed routes (see SC Contentions 28 and 104-106), or may intentionally attempt to avoid prescribed routes in order to avoid congestion.

B. The County disagrees with the rigid and complex traffic control strategy envisioned by Appendix A. However, the County contends that it is necessary for duly authorized officers to be available at important locations to attempt to facilitate traffic flow. However, LILCO has no agreement with the County to provide such personnel, nor would they be available pursuant to County Resolution No. 456-1982 and County Resolution No. 111-1983.

C. To ensure use of prescribed evacuation routes, LILCO assumes that its "traffic guides" will be "mobilized and in place at their prescribed locations at [the] outset of the evacuation process." (Appendix A, at V-2). However, the LILCO traffic guides will be unavailable for such duty and unable to arrive at their assigned locations in a timely manner, due to:

1. LILCO's traffic guides do not have the authority to direct traffic in any manner. See SC Contention 1; N.Y. Veh. & Traf. Law §§ 1102, 1602 (McKinney); N.Y. Penal Law §§ 190.25(3) 195.05, 240.20(5) (McKinney).

2. The time required to contact all traffic guides. It will take a significant amount of time to reach a sufficient number of traffic guides because:

a. LILCO relies on commercial telephones to notify most of its traffic guides. (OPIP 3.3.2, at 74-91). However, in the event of a radiological emergency at Shoreham, commercial telephone lines may be overloaded and thus unavailable for use by LILCO personnel (see SC Contentions 78-96 -- Communications);

b. Even if all necessary telephone lines are operating, it will take a significant amount of time to telephone 21 people, as each caller must do. (OPIP 3.3.2, at 74-91);

c. LILCO has designated its meter readers to be the primary traffic guides. (OPIP 2.1.1, at 28). Meter readers, however, are not equipped with radios or other means of notification when performing their regular duties for LILCO and, therefore, will be unable to be contacted while on duty;

d. During off-duty hours, traffic guides may not be at home and therefore cannot be contacted.

3. Anticipated traffic congestion from mobilization and evacuation travel;

4. Their need to ensure the safety of their own families prior to responding as part of LERO; and

5. The long distances which some traffic guides will need to travel to get to their staging areas and then to their assigned posts.

D. Even assuming arguendo the legality of the traffic control measures assumed in the LILCO Plan (see SC Contention 1), LILCO's traffic guides, as noted in the FEMA Report at 2, 10-11, possess no authority to enforce their objectives nor will they be perceived as having the same authority as policemen. These factors, when combined with LILCO's lack of credibility (see, e.g., SC Contentions 97, 100), will mean that LILCO's traffic guides will be disobeyed by motorists. Such disobedience is especially likely in light of the heightened fear and anxiety caused by a radiological emergency which is perceived to be different from other emergencies.

E. The LILCO evacuation time estimates also rely on traffic control devices such as roadblocks, prescribed turn movements, channelization treatment, one-way roads and blocking

lanes on the Long Island Expressway. (See Appendix A, Section IV for listing of traffic control devices which LILCO assumes will be used). However, LILCO and its "traffic guides" lack legal authority to implement such traffic controls and, in fact, are explicitly prohibited from taking such action under New York State Law. (See SC Contention 1); see also FEMA Report at 2-3, 10-11; N.Y. Veh. & Traf. Law § 1114 (McKinney); N.Y. Penal Law §§ 190.25(3), 190.05, 240.20(5) (McKinney). Accordingly, LILCO cannot rely on the use of traffic control devices to ensure the use of prescribed evacuation routes.

F. The LILCO estimates also assume that "trail blazer" signs will be installed as permanent roadway hardware to direct the public in the event of an evacuation. (Appendix A, at IV-82). In fact, however, Suffolk County contends such signs will not be installed (see Suffolk County Legislature Resolution 456-1982) and, further, that it is unlawful for LILCO to install such signs (see SC Contention 1); therefore, LILCO cannot rely on such signs to ensure the use of prescribed evacuation routes. See N.Y. Veh. & Traff. Law § 1114 (McKinney); N.Y. Penal Law §§ 190.25(3), 195.05, 240.20(5) (McKinney).

SC Contention 30. The LILCO traffic control plan, as described in Appendix A, even if assumed arguendo to be lawful, will, in fact, constitute an additional source of congestion

which has been ignored in LILCO's evacuation time estimates. If such congestion were taken into account, the LILCO estimates would increase substantially. The Plan will cause additional congestion for the following reasons:

A. LILCO's estimates assume that its traffic guides will screen all motorists moving in a direction contrary to its prescribed traffic flow to determine whether that person has "good reason" for going in that direction. (Appendix A, at IV-83; see also, IV-8). Thus, a traffic guide presumably would stop or otherwise delay all such motorists, question them and attempt to persuade or order them not to go in their intended directions if their reasons for doing so were judged not to be sufficient. This screening process will impede traffic flow, resulting in congestion and further increasing the evacuation time estimates. It will also require more traffic guides than LILCO has designated for each traffic post. Furthermore, screening motorists will increase the risk of hostile confrontation between the traffic guides and the public (see B below).

B. LILCO's attempted use of traffic controls may cause aggressive behavior on the part of those attempting to take protective actions. This aggressive behavior will stem in part from fear of a radiological emergency (which is perceived by the population to be different from other emergencies) and in

part from confrontations that will result when motorists wish to travel contrary to the directions of the LILCO traffic guide. The situation will be aggravated by LILCO's lack of credibility and the view during an emergency that the LILCO traffic guides, being part of the LILCO organization, are associated with the cause of the problem in the first place. LILCO's traffic guides, who will be inexperienced, poorly trained and unknowledgeable in handling such situations, may also react in such a way as to further exacerbate the situation. Conflicts between motorists and traffic guides will result in traffic congestion, confusion, accidents and possibly injuries.

C. Neither LILCO's traffic guides nor any other LERO personnel have the authority to alter traffic signal lights. Therefore, traffic guides may attempt to implement a control strategy counter to the direction given by the signals. See FEMA Report at 10 citing non-compliance with NUREG 0654, Section II.J.10.j. Such simultaneous and potentially contradictory instructions to motorists will cause confusion and congestion, thus further delaying traffic movement. Id.

D. In some cases, LILCO's prescribed routes direct motorists to travel contrary to their perceptions of the most expeditious way out of the EPZ. (See, e.g., Post #19 described

in Appendix A, at IV-56). This will cause confusion and anxiety on the part of the motorists and confrontations with traffic guides.

It is essential that each traffic guide have the capability to communicate directly with those traffic guides at nearby posts in order to coordinate traffic control strategy and to be aware of what traffic conditions may be coming. LILCO's traffic guides, however, will not have that capability because, for reasons set forth in SC Contentions 78-96: Communications, they will not have adequate radio equipment or frequencies. The result of such attempted traffic control without adequate means for coordination will result in further congestion and extended time for evacuation.

SC Contention 31. Suffolk County contends that large numbers of people outside the EPZ will evacuate voluntarily during a Shoreham emergency, resulting in a much larger number of people attempting to evacuate (and thus using the limited capacity of the existing road network) than is assumed by LILCO in its time estimates. The numbers of people expected to evacuate voluntarily, the locations from which they will evacuate, and the circumstances under which they will evacuate are set forth in a survey and studies which the County has provided to all parties. These additional vehicles will create congestion

both in the EPZ and in the regions just outside the EPZ, which will cause queuing and impede traffic evacuating from the EPZ. While LILCO acknowledges that persons not specifically instructed to evacuate will, in fact, attempt to evacuate (Appendix A, at I-5), the LILCO evacuation time estimates ignore the number of vehicles which will be on the roads due to such voluntary evacuation both from outside the EPZ and from those zones within the EPZ not ordered to be evacuated.^{2/} The LILCO evacuation time estimates are inaccurate for failing to take into account the numbers and locations of people who will evacuate voluntarily contrary to instructions. If voluntary evacuation were properly taken into account, the LILCO estimates would increase substantially.

SC Contention 32. The LILCO time estimates assume that "[n]o major vehicle breakdown or other types of incidents [will] occur which block major routes for an extended time." (Appendix A, at V-2). This assumption is unrealistic and leads to an under-estimation of the time required for evacuation.

^{2/} LILCO has recently provided the County with a new KLD study which purports to take into account voluntary evacuations from outside the EPZ. The study is not part of the Plan and the County has not had sufficient time to evaluate it completely. As appropriate at a later time, this contention may be revised to include this KLD study if LILCO's Plan takes it into account.

Examples of factors which increase congestion and thus increase time estimates, and which should have been included in LILCO's estimates, include:

A. Anticipated traffic accidents and automobile breakdowns, including running out of gas (for example, the County police responded in 1982 to 10,000 incidents such as accidents and breakdowns on the Suffolk County portion of the Long Island Expressway, thus indicating the potential for this factor to influence severely evacuation times);

B. The absence of shoulders on some primary or secondary routes which will be used during an evacuation;

C. Road construction/repair work which can be assumed to be ongoing at any time;

D. Abandonment of vehicles under emergency conditions;
and

E. The impact of adverse weather on any of these factors.

SC Contention 33. The LILCO evacuation time estimates do not include the times necessary for evacuation of those with special needs who cannot rely on private transportation, such as school children, persons without cars, persons in health care facilities, the elderly and the handicapped. Thus, as cited in the FEMA report at 11, the time estimates are not in compliance with NUREG 0654, Section J.10.1 and Appendix 4,

at 4-9 to 4-10. The individuals in charge of making protective action recommendations must know how long it will take to evacuate this portion of the population. In addition, the LILCO evacuation time estimates do not take into account the additional congestion to be encountered by evacuating motorists that will result from the evacuation of those with special needs. Such evacuation will involve the use of large numbers of buses, ambulances and trains. These vehicles will be traveling through the EPZ, in all directions, on prescribed evacuation routes and other roads, making frequent stops. If special evacuations were taken into account, the LILCO estimates would increase substantially.

SC Contention 34. Behavior research demonstrates that stress and anxiety induced by a radiological emergency at Shoreham will diminish driving skills and awareness, and impede the processing of information necessary for a driver to make decisions and drive properly. The geography of Long Island, with its narrow, limited land area, may create a feeling of being "closed-in," which may further result in poor driver behavior. Decreased driver skills and awareness will cause confusion, congestion and accidents and, if properly taken into account, would increase LILCO's evacuation times. LILCO, however, has failed to account for these factors in its evacuation time estimates.

SC Contention 35. The LILCO Plan (OPIP 3.6.3) provides for two evacuation route spotters to report information to the EOC regarding traffic congestion on evacuation routes. Without the ability to spot congested areas effectively, LILCO will be unable to implement appropriate measures for evacuees to avoid such congestion, resulting in increased evacuation times. LILCO's route spotters will be ineffective because:

A. LILCO has not provided enough route spotters to cover the evacuation routes. See FEMA Report at 11.

B. The LILCO route spotters will be unable to move expeditiously through heavily congested traffic, especially since the evacuating motorists will not defer to LERO vehicles operating without police sirens or flashers. Id.

SOC Contention 1. SOC contends that working parents of school children can be expected to leave work in order to return home and evacuate them, particularly if there is no one waiting at home for the child. This will cause a significant influx of unnecessary auto traffic into the plume EPZ and will extend the duration of the evacuation substantially.

SOC Contention 2. SOC contends that in the case of families that are planning to evacuate, the length of time

required for early dismissals of schools (see Appendix A at IV-182) means that they must delay their departure until the early dismissal procedure is complete. In the case of families with several children in different schools, the delayed return home of a single child will effectively force the entire family to remain the plume EPZ long beyond the evacuation order.

Further Preamble to SC Contention 36: Removal of Obstacles from the Roadway and Provisions for Fuel. In accordance with the requirement that means be developed for the public to take effective protective actions in the event of a radiological emergency at Shoreham (10 CFR Section 50.47(b)(10)), it is necessary that an offsite plan provide "[i]dentification of and means for dealing with potential impediments . . . to use of evacuation routes, and contingency measures." NUREG 0654, Section II.J.10.k.

In the event of a radiological emergency at Shoreham and subsequent evacuation (recommended and/or voluntary), it is likely that there will be many instances of automobile accidents and vehicle breakdowns caused by the large number of vehicles on the road, stop-and-go conditions, overheating while idling in queues, driver inattention, failure to obey the rules of the road and other such conditions. In addition, it is likely that many evacuees will not begin the evacuation with a full tank of gas. Many cars may run out of gas, both inside and outside the EPZ, as a result of extended operation times due to congestion, stop-and-go conditions and time spent sitting in queues. Such occurrences, along with abandonment of vehicles and construction which may be in progress at the time an evacuation is ordered, will result in obstructions and

blockages on roadways in use during the evacuation. Taking such occurrences into account would cause LILCO's evacuation time estimates to increase. (See SC Contention 32). In addition, it is essential that such obstacles be removed in a timely manner so that evacuation times will not increase even more due to substantial periods of reduced roadway capacity.

Although LILCO has not included the effects of accidents, breakdowns and other road blockages in its evacuation time estimates, its Plan does state that removal of obstacles will be performed by road crews (LILCO personnel) using LILCO tow trucks and line trucks. (Plan, at 4.4-3). (LILCO has informed the County that no private tow truck operators will be involved in removing obstacles from the roads, contrary to the language of its Plan at 4.4-3 and 4.)

Appendix A of the Plan (at IV-192), states that a gasoline contingency plan is "under development," and the Plan (at 4.4-4) states that "[g]asoline, diesel fuel, motor oil, etc., will be provided . . . by Private Gasoline and Diesel Fuel Companies." Appendix A further states that "[o]nce the methodology for providing gasoline has been determined, an allocation system will have to be derived specifying the number of gallons allowed, etc." (Appendix A, at IV-192). (LILCO has subsequently informed the County that the fuel will be obtained from

private companies pursuant to agreements already in place and that LILCO fuel trucks will actually distribute the fuel.)

SC Contention 36. Suffolk County contends that the LILCO Plan fails to comply with 10 CFR Sections 50.47(a)(1), 50.47(b)(10) and NUREG 0654, Section II.J, because LILCO will be unable to provide for obstacles to be removed from the roads, or to provide adequate fuel supplies for evacuees for the following reasons:

A. LILCO does not have an adequate number of tow trucks to enable LILCO personnel to remove all potential road obstructions, nor does the Plan specify the number of such vehicles at its disposal. See FEMA Report at 11, citing non-compliance with NUREG 0654, Section II.J.10.k.

B. Even though LILCO has general agreements with private fuel companies for the provision of fuel to LILCO, there are no agreements to provide such fuel during a radiological emergency, and the agreements are not included in the Plan. Further, the drivers and other employees of such companies will first attend to the safety of their families in the event of an emergency. Therefore, there is no assurance that the personnel relied upon by LILCO will be available to deliver all required fuel in a timely manner.

C. Many of LILCO's vehicles are stationed too far away to respond promptly to the location of obstacles on evacuation routes.

D. It will take many hours to notify and mobilize the LILCO road crews (see OPIPs 3.3.2 (Procedures 22-24) and 3.6.3) and fuel truck drivers, resulting in additional delay in reaching obstruction sites or fuel allocation locations. Delays in mobilization will be caused by:

1. The time required to notify road crews and drivers;
2. The time required for the road crews and drivers to travel through mobilization and evacuation traffic to reach the location of tow trucks, fuel trucks, and other heavy equipment;
3. The time required to drive the trucks through congested traffic to designated dispatch locations.

E. There are no provisions for adequate radio communications between LERO and all LILCO tow trucks. See FEMA Report at 11, citing non-compliance with NUREG 0654, Section II.J.10.k. Therefore, there is no assurance that the LILCO tow trucks will be dispatched expeditiously to the location of roadway obstructions.

F. Once they have been dispatched to an obstruction location, the tow trucks and other heavy equipment will only be able to move as fast as the traffic flow, which will be extremely slow. Therefore, they will be unable to respond to the site of an obstruction in an expeditious manner.

G. Assuming there are fuel trucks and drivers available, and that they can be notified and dispatched to "key locations," there is no assurance that, given congested traffic conditions, the trucks will be able to reach their assigned locations in a timely manner.

H. LILCO's Plan makes no provision for the evacuation of persons whose cars break down or are in accidents.

I. LILCO is not authorized to distribute fuel along the roadsides as is proposed in the LILCO Plan. See Suffolk County Sanitary Code, Art. 12; Town fire prevention codes. (See SC Contention 1).

J. No provisions have been made to handle queues at fuel allocation sites which may back up into evacuating traffic, thus causing further congestion and delays.

K. The LILCO Plan does not provide for security at fuel allocation sites. (See SC Contentions 70-76).

L. The LILCO Plan does not provide for snow removal. See FEMA Report at 11, citing non-compliance with NUREG 0654, Section II.J.10.k.

M. LILCO's fuel trucks, which are designed for transporting fuel, are not equipped to pump fuel in the manner necessary to refuel automobiles. Furthermore, LILCO's fuel trucks are not equipped with necessary fire prevention equipment, such as is found on gasoline pumps and trucks designed for refueling aircraft. Therefore, the public will be subjected to an unacceptable risk of fire and/or explosions.

N. Even assuming that LILCO has on hand a sufficiently large supply of gasoline, the amount of time required to pump fuel out of storage tanks and into the fuel trucks will further delay the arrival of the trucks to fuel allocation sites.

Further Preamble to SC Contentions 37-51: Evacuation of Persons with Special Needs. 10 CFR Section 50.47(b)(10) requires that a range of protective actions be developed for members of the public. One such protective action for which there must be planning and preparedness is an evacuation of all or part of the EPZ. LILCO assumes that in the event an evacuation is ordered, most members of the population will attempt to leave using their personal vehicles. However, a substantial portion of the population in the EPZ does not own or have access to an automobile or, due to age, handicap or infirmity, cannot operate a vehicle. Still others who reside in special facilities, such as nursing or adult homes or hospitals, would require special means of evacuation transportation such as ambulances.

People with special needs cannot be ignored in the event an evacuation is ordered. Indeed, NUREG 0654, Section II.J.10.d, specifically requires that there be planning and preparedness "for protecting those persons whose mobility may be impaired due to such factors as institutional or other confinement." Unless people with special transportation needs can be evacuated in a timely fashion, they may be subjected to health-threatening levels of radiation.

LILCO's Plan does not provide adequate measures, capable of implementation, for evacuating those with special needs, and thus fails to comply with 10 CFR Section 50.47(a)(1) and NUREG 0654, Sections II.J.9 and J.10. In addition, the LILCO Plan does not comply with 10 CFR Sections 50.47(b)(1), 50.47(b)(3), 50.47(b)(8), and 50.47(b)(10) and NUREG 0654, Sections II.A, C, H and J, because organizations capable of performing the functions relied upon by LILCO have not been identified; appropriate letters of agreement with such organizations do not exist; and equipment, personnel and facilities necessary to accomplish an evacuation will not be available to LILCO. An evacuation of the number of persons with special needs which LILCO estimates are in the EPZ would require a large number of buses, ambulances, railroad passenger cars and airplanes. Most buses located within a reasonable distance of SNPS are under contract to school districts and other entities, and would be required for a school evacuation or early dismissal, or otherwise would be in use, and would therefore be unavailable to LILCO. In addition, there are only 40 ambulances located within approximately 12 miles of Shoreham.

SC Contention 37. LILCO proposes that people who do not have access to an automobile at the time of an evacuation order will be evacuated by buses running special evacuation

routes, with bus stops purportedly no more than one-half mile from each such person's home. (Plan at 3.6-6; Appendix A, at III-35 and III-36, IV-87 to IV-178; OPIP 3.6.4). However, LILCO's proposal cannot be implemented and therefore LILCO fails to comply with 10 CFR Section 50.47(a)(1), 50.47(b)(10), and NUREG 0654 Section II.J.9 for the following reasons:

A. According to LILCO's estimates, approximately 285 forty-passenger buses are required to transport those able-bodied persons who would need transportation out of the EPZ (see Appendix A, at IV-87 to IV-178; OPIP 3.6.4). That number of buses will not be available for use by LILCO because:

1. LILCO has no agreements under which such vehicles will be available (Appendix A, at III-36). FEMA identified this fact as an inadequacy and noncompliance with NUREG 0654 Section J.10.g. (FEMA Report at 9).

2. Most buses within a reasonable distance of the EPZ are under contract to school districts or other entities and therefore could not be relied upon by LILCO for use to evacuate persons without access to cars.

3. Many buses within a reasonable distance of the EPZ have capacities substantially less than 40 passengers.

4. LILCO itself does not possess 285 forty-passenger buses.

B. In fact, however, LILCO will need more than 285 buses because LILCO has substantially underestimated the number of people who will need transportation:

1. LILCO appears to base its estimates solely on the number of households without cars. (See Appendix A at III-35). Its estimates thus ignore the significant number of people who belong to households with automobiles, but who may not have access to such vehicles because at the time of an evacuation order, the vehicles are in use by another member of the household. LILCO's proposal for evacuating persons without access to transportation must include adequate methods of evacuating the members of vehicle-owning households who may not have access to a car. LILCO's estimates of the number of buses required do not appear to take such people into account.

2. The LILCO estimates also fail to take into account those persons who rely on public transportation to get into the EPZ but who, in the event of an emergency, may not be able to rely on such means to evacuate.

SC Contention 38. LILCO's proposed evacuation of people without access to cars would not provide adequate protection for such people, and thus the LILCO Plan fails to comply with 10 CFR Section 50.47(a)(1), because the evacuation would take too long. As a result of the time necessary to

complete the evacuation, persons may be exposed to health-threatening radiation doses.

1. Mobilization of the necessary number of LILCO employees expected to drive buses (OPIPs 3.3.2, 3.3.3 and 3.6.4) will require many hours.

2. Even assuming the eventual availability of some buses for LILCO's use, the proposed procedure for contacting bus companies and locating a sufficient number of buses (see OPIP 3.6.4) will require substantial time.

3. Since many of the bus companies which LILCO may rely upon (see Plan, Attachment 3.11.1) are located substantial distances away from the staging areas where drivers will be mobilized, transporting bus drivers to the bus company locations and driving the buses to the appropriate zones to begin evacuation (see OPIP 3.6.4) will require substantial time.

4. Substantial time will also be required for LILCO bus drivers to gain access to the buses (e.g., by "utiliz[ing] tool kits to gain entrance into the Bus Company garages" (OPIP 3.6.4, at 6)) and to prepare them for use (e.g., obtaining gasoline and checking oil, see OPIP 3.6.4, at 7).

5. The staggered departures and multiple bus runs necessary under LILCO's plan to evacuate the people in each zone (Appendix A, at IV-87 to IV-178; OPIP 3.6.4, at 11-32),

even using LILCO's underestimated figures, will result in lengthy evacuation travel times.

6. LILCO's "estimated route times" for the evacuation buses in each EPZ zone (OPIP 3.6.4, at 11-32) are unrealistically low, in that they fail to take into account the congested conditions that will exist due to the factors set forth in SC Contentions 26-35. In addition, the LILCO Plan provides that in the many cases where buses are required to make more than one run, the bus routes will terminate at designated "transfer points." Of the 285 buses which LILCO estimates it will require, 109 are expected to perform two runs and 14 are expected to perform three runs. As buses finish the required number of runs, people who have been deposited at transfer points will be bused from the transfer points to relocation centers. LILCO's estimated route times begin and end with the assumed transfer points. (See Appendix A, at IV-87 to IV-178; OPIP 3.6.4). However, contrary to the requirement of NUREG 0654, Sections II.A.3, and C.4, LILCO does not have agreements with school districts permitting LILCO to use the schools relied upon in the Plan as transfer points. In fact, such transfer points are likely to be unavailable for use by LILCO if an emergency were to occur during school hours. Without such transfer points, each bus route would have to

terminate at a relocation center rather than at a transfer point, resulting in a substantial increase in the estimated route times.

Moreover, although OPIP 3.6.4 instructs LILCO employees to inform evacuees at transfer points "that they are outside of the 10-mile EPZ," in fact, four of the twelve transfer points are inside the EPZ, and three are practically on the boundary of the EPZ. In addition, of the remaining five transfer points, three are located approximately one mile beyond the EPZ boundary, and two are approximately two and a half miles beyond the boundary. Under the LILCO Plan, people are likely to be kept waiting, for substantial time periods, before they are transported from transfer points to relocation centers. Leaving people at the seven transfer points within the EPZ will not provide protection for them. Leaving them at the other five transfer points, all less than five miles beyond the EPZ boundary, conflicts with the intent of NUREG 0654, Section II.J.10.h, and could result in these people also receiving health-threatening radiation doses.

SC Contention 39. The LILCO Plan fails to include evacuation time estimates for the people in the EPZ without access to transportation, and thus fails to comply with 10 CFR Appendix E, Section IV, and NUREG 0654, Section II.J.8. FEMA

identified this inadequacy as noncompliance with NUREG 0654 Section II.J.10.1. (FEMA Report at 11). In fact, the time necessary to accomplish such an evacuation would be far too long to provide adequate protection for such people. Evacuation time estimates for this segment of the population must take into account all the facts set forth in SC Contentions 37 and 38.

Further Preamble to SC Contentions 40-43: School Children. The LILCO Plan proposes two means of implementing a protective action of evacuation with respect to children who are in schools at the time of an evacuation order: (1) by recommending that schools implement existing early dismissal policies so children may return to their homes and evacuate with their parents (Plan, at 3.3-5, 3.6-6; Appendix A, at IV-182 to IV-185); and (2) by performing a bus evacuation of the children directly from the schools to relocation centers (Plan, at 2.1-5, 3.6-5 to 7; Appendix A, at IV-182 to 185; OPIP 3.6.5). Suffolk County contends for reasons set forth in SC Contentions 40-43, that the LILCO Plan does not provide an adequate and implementable means of evacuating school children, and thus fails to comply with 10 CFR Sections 50.47(a)(1), 50.47(b)(10), and NUREG 0654, Sections II.J.9 and J.10.

SC Contention 40. LILCO has no agreements, with the schools or school districts located in the EPZ, to implement any of the proposed protective measures for school children contained in the Plan, and thus fails to comply with 10 CFR Sections 50.47(b)(1) and 50.47(b)(3), and NUREG 0654, Sections II.A.3 and C.4. There is no assurance that the schools or the school districts are able or willing to implement the measures proposed by LILCO.

SC Contention 41. The LILCO Plan fails to specify the bases upon which a protective action recommendation of early dismissal (as opposed to sheltering or evacuation) would be made, and thus does not comply with 10 CFR Section 50.47(b)(10), and NUREG 0654, Section II.J.10.m. Although Appendix A states (at IV-182) that schools "will probably be advised to institute an early dismissal "(emphasis added) when they receive a tone alert radio notification, via EBS, of the "declaration of an alert or above classification," the basis to be used by LILCO in deciding to issue such a "probable" advisory is not stated. There is also no basis provided for the possible early dismissal of the South Country, Three Village, and Sachem School Districts. (See Appendix A at IV-183).

SC Contention 42. LILCO appears to assume that its recommendation that schools implement an early dismissal will result in children being protected in the event of an evacuation order, because children could thereby evacuate with their parents. (See Appendix A, at II-20). In fact, there is no assurance that early dismissal will provide children with adequate protection from health-threatening radiation doses, and therefore the Plan fails to comply with 10 CFR Section 50.47(a)(1), 50-47(b)(10), and NUREG 0654 Sections II.I.9 and J.10, for the following reasons:

A. Under the LILCO Plan, the decision to implement an early dismissal rests with the schools. (See Appendix A, at IV-182). The recommendation to dismiss early will be made over the EBS radio (Plan at 3.6-6; Appendix A at IV-182). The Plan contains no provisions for the transmission of any detailed information to school authorities about the emergency, its anticipated or potential progress, or the possible dangers involved in implementing an early dismissal. Therefore, under the LILCO Plan, the appropriate school authorities will be unable to obtain the information necessary to permit an informed and timely decision. The Plan also fails to provide indemnification for the school authorities in the event they make an incorrect decision, with respect to an early dismissal, which results in injury to children. Therefore, there is no assurance that the schools will be able to, or actually will, make the appropriate decision with respect to early dismissal.

B. Early dismissal will not result in the timely arrival of children at their homes so they can be protected by their parents because:

1. Even under non-emergency conditions it takes hours to implement early dismissals due to the time required to make the necessary decision, to mobilize the necessary personnel and vehicles, and to perform the necessary number of bus

runs. Under emergency conditions, the time required to accomplish an early dismissal is likely to be substantially greater. In addition, early dismissal policies rely upon large numbers of children walking home, distances of up to two to three miles, which can take a substantial amount of time.

2. Under the LILCO Plan, schools will receive notification of an emergency at the same time as the rest of the public (by means of tone alert radios activated by the EBS announcement (see Plan, at 3.3-4 and 3.3-5)). Therefore early dismissal traffic, including those children expected to walk home, will encounter early evacuation and mobilization traffic.

3. The LILCO Plan fails to take into account the role conflict that is likely to be experienced by school bus drivers. In fact, a substantial number of school bus drivers are likely to attend to the safety of their own families before they report, with their buses, to perform their bus driving duties. LILCO has no agreements with bus companies to provide buses or drivers necessary to accomplish an early dismissal. FEMA noted this inadequacy as a noncompliance with NUREG 0654 Section II.J.10.g. (FEMA Report at 9-10). Accordingly, there will not be an adequate number of buses or bus drivers available to implement an early dismissal.

4. The Plan fails to take into account the role conflict that is likely to be experienced by teachers, other school employees and crossing guards. In fact, a substantial number of such personnel are likely to attend to the safety of their own families rather than remaining at the schools or at their posts in the event of an emergency. Accordingly, there is no assurance that adequate personnel will be available to supervise children, including those required to walk home, during the early dismissal process.

C. The Plan does not provide for prior notification of parents if early dismissal is going to occur. As a result, many children will be sent home to empty houses, and may be uncared for during the emergency.

D. The Plan fails to provide a means of dealing with an escalation of the emergency (and accompanying need to recommend protective actions of sheltering or evacuation) that may occur during the lengthy process of early dismissal. In the event of such an escalation, children are likely to be stranded in schools, or en route to their homes (walking or on buses), without available shelter, means of evacuation or other protection.

SC Contention 43. The LILCO Plan states that the Shoreham-Wading River School District "is the only district

which has the option of relocating its students." (Appendix A at IV-183). Thus the Plan does not identify relocation centers for, or the means or procedures to evacuate, any schools other than those in the Shoreham-Wading River School District. Suffolk County contends that in failing to provide for evacuation even in the event of a fast moving event, of the school children in the 16 other school districts in the EPZ (See Appendix A at IV-183), the LILCO Plan fails to comply with 10 CFR Sections 50.47(a)(1), 50.47(b)(10), and NUREG 0654 Sections II.J.9 and II.J.10.

In addition, the County contends that the Plan's provisions for evacuation of school children are deficient for the following reasons:

A. The relocation center proposed for the Shoreham-Wading River School District is Suffolk County Community College. LILCO has no agreement with Suffolk County for use of County facilities as relocation centers. In addition, pursuant to Suffolk County Resolution 456-1982, it cannot be assumed that the County will permit use of such County facilities. Accordingly, Suffolk County Community College is not available for use by LILCO as a relocation center. Thus, the Plan does not comply with 10 CFR Sections 50.47(b)(3), 50.47(b)(8) or NUREG 0654, Sections II.A.3, C.4, J.9, and J.10.

B. Assuming arguendo there were relocation centers available for evacuated school children, under the LILCO Plan, a timely evacuation of the schools in the EPZ could not be implemented because:

1. LILCO has no agreements with bus companies to provide the number of buses needed to perform an evacuation, and thus fails to comply with 10 CFR Sections 50.47(b)(3), 50.47(b)(8), and NUREG 0654, Sections II.A.3 and C.4. Accordingly, there is no assurance that an adequate number of buses will be available for use by LILCO.

2. Even if such agreements did exist, many of the buses would not be accessible to LILCO employees because they would be in the custody of the normal bus drivers, or the buses would be located substantial distances away.

3. The LILCO Plan has no provision for supervision of children at schools, on buses or at relocation centers, or for indemnification of school authorities in the event children are injured or contaminated in connection with an evacuation.

C. An evacuation of schools, using LILCO employees as bus drivers, would take too long and children would not be adequately protected from health threatening radiation doses because:

1. Notification and mobilization of LILCO bus drivers to staging areas (OPIP 3.6.4) would take hours.

2. The procedure for contacting bus companies, locating buses, transporting drivers from staging areas to bus locations, gaining access to and preparing buses for operation, and driving buses to schools to begin evacuation (OPIP 3.6.4) would take hours.

3. Evacuating buses would encounter congestion from other mobilization and evacuation traffic, and thus would be substantially delayed in traveling from schools to relocation centers (assuming such relocation centers existed).

4. Normal school dismissals require substantial numbers of multiple bus runs as well as staggered dismissal times. In the event of an evacuation, a large number of multiple bus runs (requiring several hours) would be necessary to transport all children out of the EPZ.

D. The LILCO Plan does not include evacuation time estimates for evacuation of schools, and thus fails to comply with 10 CFR Part 50, Appendix E, Section IV, and NUREG 0654 Section II.J.8. Such estimates must take into account the factors identified in sections A, B and C above.

SOC Contention 3. The LILCO Plan provides that, in the event of a general emergency at Shoreham, schools will be both dismissed according to existing early dismissal plans (Plan at 3.6-6) and evacuated by LERO personnel (Plan at 3.6-7). Assuming that LILCO actually means the former, the Plan is insufficiently protective of the public health and safety because:

a. the LILCO Plan neither incorporates nor references the early dismissal plans for each school. It is thus impossible to tell whether such plans actually exist and, if so, the extent to which they are compatible with the LILCO Plan;

b. at some schools within the plume EPZ the existing early dismissal plans call for students living within close proximity (i.e., less than two miles) to the school to walk home. These children would be exposed to potentially huge radiation doses in the event of a radioactive release from Shoreham;

c. according to surveys, between 30 and 40 percent of the school children within the plume EPZ return from school to an empty home because both parents hold daytime jobs (or, in the case of single-parent families, the sole parent holds a daytime job). Thus, in the event of an early dismissal, these

children would be at home alone. The LILCO Plan makes no provision for evacuating such children.

Further Preamble to SC Contentions 44-49: People in Special Facilities. The LILCO Plan proposes to evacuate all hospitals, nursing homes and other special health care facilities in the EPZ using buses, ambulances, the Long Island Railroad ("LIRR"), and airplanes. (Plan, Appendix A at II-28 to 30, III-37, IV-179 to 180, IV-185 to 192; OPIP 3.6.5). This aspect of the Plan cannot be implemented; accordingly, people in special facilities will not be adequately protected in the event of an emergency. Suffolk County contends that the LILCO Plan fails to comply with 10 CFR Sections 50.47(a)(1), 50.47(b)(3), 50.47(b)(8), 50.47(b)(10) and NUREG 0654, Sections II.A.3, C and J for the reasons set forth in SC Contentions 44-49.

SC Contention 44. The LILCO Plan does not include agreements with the special facilities in the EPZ to implement the evacuation procedures set forth in the Plan, and thus fails to comply with 10 CFR Sections 50.47(b)(1), 50.47(b)(3), 50.47(b)(8) and NUREG 0654, Sections II.A.3, C.4, J.9 and J.10.

SC Contention 45. According to LILCO's estimates (see Appendix A, at IV-189 to 191), it will require approximately 25 forty-passenger buses (in addition to the number required to evacuate persons without access to cars and school children), sufficient ambulances to make approximately 348

ambulance trips, and enough LIRR passenger cars to transport approximately 215 patients, in order to evacuate just the nursing and adult homes located in the EPZ. An additional and substantial number of buses, ambulances, LIRR passenger cars and airplanes 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-185 to 188). LILCO has no agreements with bus companies, ambulance or rescue services, the LIRR, or airlines to provide such equipment in such quantities. (See FEMA Report at 10). In fact, there are only 40 ambulances located within approximately 12 miles of Shoreham, some of which, of course, would likely be occupied by duties outside the EPZ at time an emergency arose. The number of vehicles necessary to perform a timely evacuation of the special facilities in the EPZ will not be available to LILCO.

SC Contention 46. The LILCO Plan relies upon volunteer non-LILCO personnel to drive ambulances and to provide the necessary medical and paramedical support services in the buses, ambulances, railroad cars and airplanes to be used in evacuating special facilities. LILCO also appears to rely upon LIRR personnel, private airplane crews and employees of an unnamed lumber company to perform substantial and essential roles in the proposed evacuation. (See Appendix A, at IV-185

to 192). The LILCO Plan includes no agreements from any such individuals or entities to perform such services, under LILCO's direction, in the event of an emergency at Shoreham. In this respect, the Plan fails to comply with 10 CFR Sections 50.47(b)(1), 50.47(b)(3), and NUREG 0654, Sections II.A.3, C.4, J.9 and J.10. In addition, the Plan fails to take into account the role conflict that is likely to be experienced by such individuals. A substantial number of such individuals will attend to the safety of their own families before reporting to perform emergency services. Accordingly, there is no assurance that the number of persons required to perform necessary driving, medical support and other essential support services will be available to implement the proposed evacuation of special facilities.

SC Contention 47. The Plan does not include estimates of the time necessary to evacuate special facilities, and thus fails to comply with 10 CFR Part 50, Appendix E, Section IV, and NUREG 0654, Section II.J.8. In fact, it will take several hours to notify and mobilize LILCO and non-LILCO emergency workers to staging areas, and to obtain the necessary vehicles and LIRR trains (see OPIP 3.6.5), before evacuation of special facilities could even begin. Following mobilization, the time necessary to accomplish the evacuation will be too

long to provide adequate protection from health-threatening radiation doses. Evacuation will take too long as a result of: the large number of trips necessary to transport persons individually to relocation centers or to LIRR stations; the other mobilization and evacuation traffic congestion which the evacuation vehicles will encounter; and the time necessary to load and unload passengers from ambulances and onto trains or planes.

SC Contention 48. LILCO's plan to use the LIRR to evacuate up to 845 patients, by converting passenger cars to accommodate patients on mattresses (Plan, Appendix A, at IV-186), is unworkable and cannot be implemented in a timely manner because:

A. There is no assurance that any LIRR trains and necessary engineers, much less a sufficient number of them (see Appendix A, at IV-186), will be available at the Port Jefferson and Main Line stations to participate in the proposed evacuation.

B. LILCO does not have an agreement with a lumber company to provide, on a 24-hour basis, the materials necessary to accomplish the proposed modifications to the LIRR cars.

C. LILCO does not have an agreement with the LIRR to allow such modifications to its cars.

D. It will take a long time to perform the necessary modifications to the LIRR cars, and the Plan does not provide for personnel to perform such modifications.

E. Limited access and loading conditions at the Port Jefferson and Main Line stations make the proposed evacuation impractical.

F. The Plan does not provide for health care personnel to accompany the patients in the railroad cars, or to meet patients and provide necessary support and transportation services at points of disembarkation.

SC Contention 49. LIICO has not obtained agreements from the hospitals and other institutions, designated to receive the evacuated patients, to implement the procedures set forth in the LILCO Plan. Thus, in this respect, the Plan fails to comply with 10 CFR Sections 50.47(b)(1), 50.47(b)(3) and 50.47(b)(8), and NUREG 0654, Sections II.A.3, C.4, J.9 and J.10.

Town of Southampton Contention 2. LILCO's plan calls for the relocation of patients at Central Long Island Hospital to Eastern Long Island Hospital (Greenport) and Southampton Hospital. Southampton contends that this relocation plan will not work in that:

- a) these hospitals do not have either the individual or combined capacity to handle Central Long Island's patients; and
- b) traffic flow/congestion east to west will prevent this relocation; and
- c) there are inadequate numbers of emergency personnel to handle relocation, and inadequate staff at Eastern Long Island and Southampton Hospitals to handle patients.
- d) there is no explanation of how or by whom critical patients are to be flown to neighboring hospitals; and
- e) there is no indication that either Southampton or Eastern Long Island Hospital has agreed to accept the relocation of patients as projected by LILCO.

Further Preamble to SC Contentions 50-51: Handicapped People at Home. The LILCO Plan proposes to evacuate handicapped people who are not in special facilities by ambulance. (OPIP 3.6.5). Suffolk County contends 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 NUREG 0654, Sections II.A.3, C.4 and J, as specified in SC Contentions 50 and 51.

SC Contention 50. 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 preregistration 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:

A. Many people who will require assistance will not return the postcards to LILCO because they do not: (1) perceive themselves to be handicapped; (2) desire to be identified as handicapped; (3) understand the reason or need to return the cards; (4) remember to return the cards; (5) desire to rely on LILCO assistance in the event of an emergency.

B. There is no provision in the Plan for verifying the completeness of the LILCO listing to be compiled from the returned postcards.

C. There is no provision in the Plan for regularly updating the listing.

SC Contention 51. 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, E and J. Specifically:

A. The only provision for notifying 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 deaf, 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).

B. There is no provision in the Plan for assisting handicapped individuals with the preparation necessary prior to evacuation (such as locating and packing clothing and medication, notifying relatives or friends).

C. There will not be an adequate number of personnel available to implement the proposed evacuation, in that:

1. One LILCO employee -- the Home Coordinator -- is supposed to contact all the handicapped persons and identify and contact all reception centers (OPIP 3.6.5, Section 5.1.2). One person will not be able to perform those functions promptly enough to permit timely evacuation.

2. LILCO has no agreements with ambulance, rescue services or other entities to provide the necessary drivers and paramedical or medical assistants to accomplish the evacuation or to provide the necessary medical support services prior to and during the evacuation. Thus the Plan fails to comply with 10 CFR Sections 50.47(b)(1) and 50.47(b)(3), and NUREG 0654, Sections II.A.3, C.4, J.9 and J.10.

D. The number of ambulances or specially equipped vehicles (in addition to those required to evacuate people in special facilities) necessary to evacuate handicapped persons will not be available to LILCO because:

1. LILCO has no agreements with ambulance or rescue companies to provide the necessary number of vehicles, and thus fails to comply with 10 CFR Sections 50.47(b)(3) and 50.47(b)(8), and NUREG 0654, Sections II.A.3, C.4, J.9 and J.10.

2. There is not a sufficient number of ambulances within a reasonable distance from the plant to make the evacuation of handicapped people in the EPZ possible.

E. The proposed evacuation would take far too long, and as a result, handicapped people would be likely to receive health-threatening doses of radiation, for the following reasons:

1. Notification and mobilization of emergency workers would take many hours;

2. Locating and dispatching the necessary number of vehicles would take many hours;

3. 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.

F. The LILCO Plan does not include evacuation time estimates for evacuation of handicapped individuals in the EPZ, and thus fails to comply with 10 CFR Part 50, Appendix E, Section IV, and NUREG 0654, Section II.J.8. Such estimates must take into account the factors identified in sections (A) through (E) above.

G. The LILCO Plan does not identify relocation centers adequately equipped to handle handicapped individuals,

and thus fails to comply with 10 CFR Section 50.47(b)(8) and
NUREG 0654, Section II.J.

Further Preamble to SC Contentions 52-59: Relocation

Centers. NRC emergency planning regulations require that "[a] range of protective actions have been developed for the plume exposure pathway EPZ," and that "[a]dequate emergency facilities . . . to support the emergency response are provided and maintained." 10 CFR Sections 50.47(b)(10) and 50.47(b)(8). Accordingly, a local offsite emergency plan must include means of relocating evacuees and must provide for relocation centers located at least five miles and preferably 10 miles beyond the EPZ. NUREG 0654, Sections II.J.10.g and h. Such relocation centers are essential to provide food and shelter to those evacuees who have no alternative places to stay and also to provide radiological monitoring and decontamination for evacuees and their vehicles. The relocation centers must have sufficient personnel and equipment to monitor evacuees within a 12-hour period. NUREG 0654, Section II.J.12.

The LILCO Plan calls for the establishment of relocation centers outside the EPZ (Plan, at 4.2-1; OPIP 4.2.1). The facilities to be used are:

Suffolk County Community College (primary)

BOCES Islip Occupational Center (primary)

State University of New York at Stony Brook (primary)

State University of New York at Farmingdale (backup)

St. Joseph's College, Patchogue (backup).

Suffolk County contends that LILCO will be unable to provide adequate relocation centers and services for evacuees, and thus the Plan fails to comply with 10 CFR Sections 50.47(a)(1), 50.47(b)(8), 50.47(b)(10), and NUREG 0654 Section J. The specific deficiencies in this regard are set forth in SC contentions 52-59.

SC Contention 52: LILCO has no agreements with the owners of the proposed relocation centers providing that the facilities will be available as relocation centers in the event of a radiological emergency at Shoreham. The Plan thus fails to comply with NUREG 0654, Sections II.A.3 and C.4. The FEMA Report identified this inadequacy as noncompliance with NUREG 0654 Section II.5.10.h. (See FEMA Report at 10).

SC Contention 53: The Plan designates Suffolk County Community College as the relocation center to be used by evacuees from eight of the 19 zones in the EPZ (zones A-E, H-J) and for the children in the Shoreham-Wading River School District. LILCO estimates the population of these zones to be 18,599 (26,574 in the summer). (See Plan, Appendix A, at IV-87 to 178). However, Suffolk County Community College is an entity of the Suffolk County government. LILCO has no agreement

with Suffolk County to use Suffolk County Community College as a relocation center. Furthermore, pursuant to Suffolk County Resolution No. 456-1982, the Suffolk County Community College will not be available for use in implementing the LILCO Plan. Therefore, under the LILCO Plan, in fact there is no relocation center designated for a significant portion of the evacuees from the EPZ.

SC Contention 54. Two of the three primary relocation centers designated by LILCO are well within 20 miles from the Shoreham site. NUREG 0654, Section II.J.10.h provides that relocation centers must be "at least 5 miles and preferably 10 miles beyond the boundaries" of the EPZ. However, both Suffolk County Community College and the State University of New York at Stony Brook are only three miles beyond the EPZ. A Shoreham-specific consequence analysis (Finlayson, Radford, "Basis For Selection Of Emergency Planning Zones For The Shoreham Nuclear Power Plant, Suffolk County, New York" Oct. 1982), indicates that evacuees who go to those relocation centers may be exposed to harmful levels of radiation. (See SC Contention 5). Furthermore, many evacuees who need relocation services will not use the relocation centers proposed by LILCO because they will perceive those centers as being too close to the Shoreham plant (e.g., only 13 miles). Their reluctance to

stop at the designated relocation centers will be reinforced by the number of voluntary evacuees from the area near the centers whom the evacuees will observe leaving the area. Accordingly, LILCO's designated relocation centers, in fact, will not provide the necessary services to evacuees and thus LILCO does not comply with NUREG 0654, Section II.J.10.h.

SC Contention 55. LILCO identifies the American Red Cross ("ARC") as the lead agency responsible for the total operation of the relocation centers. (Plan, at 2.2-1, 3.6-7 and 4.2-1). LILCO also relies on the ARC for other specific actions in the relocation centers such as medical and counseling support. (Plan, at 4.2-1). The Salvation Army is designated to provide additional support to the ARC. (Plan, at 2.2-2). The LILCO Plan also asserts that LILCO will rely on groups such as churches, industries and select volunteers to provide additional services. (Plan at 4.2-1). However, LILCO has no agreements with the ARC, the Salvation Army, or any other volunteer groups to provide such services and thus has failed to comply with NUREG 0654, Sections II.A.3 and C.4.

SC Contention 56. The Plan designates LILCO personnel to provide monitoring, decontamination, sanitation, security and traffic control services at the relocation centers. (Plan, at 4.2-2 to 4.2-4). The relocation centers will not be

adequately staffed, however, because LILCO personnel, ARC personnel and other volunteers are likely to attend to the safety of their own families prior to reporting to perform emergency duties. In fact, the very volunteers relied upon by LILCO to respond to a relocation center are likely to be among the voluntary evacuees who will leave the area around the relocation centers. In addition, traffic congestion and long mobilization times will prevent timely staffing of the centers. Although the relocation centers are not within the EPZ, they are in areas where there will be high percentages of voluntary evacuation. The road systems around the relocation centers -- as well as others which emergency workers would have to use to reach the centers from their homes or other locations -- will be highly congested, thus impeding access to the relocation centers by emergency staff. Accordingly, LILCO cannot demonstrate that the relocation centers will be available and functioning when needed, as required by 10 CFR Section 50.47(b)(10).

SC Contention 57. 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. Thus, there is no assurance that the relocation centers designated by LILCO will be sufficient to provide necessary services for the number of evacuees that will require them. Moreover, the LILCO Plan fails to take into account the large number of voluntary evacuees which will multiply by several times the number of evacuees who must be accommodated. Accordingly, the relocation centers designated by LILCO will be able to accommodate only a small fraction of the number of persons likely to require monitoring, decontamination, sheltering, food and other such services and, thus, LILCO fails to comply with NUREG 0654, Sections II.J.10.g and J.12.

SC Contention 58. LILCO's Plan limits the facilities for radiological monitoring and decontamination of the evacuated public to only the five relocation centers designated in the Plan. (See Plan, at 3.6-7, 4.2-2 to 4.2-4). In addition, the Plan provides for monitoring and decontamination only of those evacuees who stop at the relocation centers. Thus, there is no provision for monitoring or decontamination of evacuees and vehicles who leave the EPZ but choose not to go to relocation centers. However, based on the TMI experience, it appears likely that many evacuees will bypass the centers in favor of a destination more distant from the radiation hazard. In order

to provide adequate protection to the public as required by 10 CFR Sections 50.47(a)(1) and 50.47(b)(10), LILCO must provide a means for monitoring and decontaminating all evacuees.

SC Contention 59. The equipment used by LILCO to measure thyroid contamination -- RM 14 with HP270 probe -- (see OPIP 3.9.2) will be incapable of differentiating the required signal from background readings. The instrument's most sensitive scale (0-500 cpm) is insufficiently sensitive for the accurate measurement of a 75 cpm reading (the threshold for requiring hospital care) or a "50 cpm above background" reading. (See Plan, at 3.9-4; OPIP 3.9.2). In addition, the instrument is not sufficiently sensitive to the energy spectrum given off by radioiodine to insure accurate detection of radioiodine thyroid contamination in the presence of background readings which are likely to be elevated above the 10-15 cpm assumed by LILCO. (OPIP 3.9.2 and Plan, at 3.9-4). Accordingly, the LILCO plan fails to comply with 10 CFR Section 50.47(b)(10).

SC Contention 60. The LILCO Plan proposes an EPZ consisting of 19 separate zones. In the event of a radiological emergency at Shoreham requiring evacuation of the EPZ, it is LILCO's intended strategy to conduct "a systematic area-by-area evacuation downwind of the reactor." (Plan,

Appendix, A at I-5). LILCO's Plan, however, ignores the fact that the wind shifts quickly on Long Island, with average wind speeds of approximately 10 miles per hour. Under such conditions, a shift in wind direction could quickly direct the plume over an area that was not in the original plume pathway, and thus not included in the initial evacuation order, before that area could be evacuated.

Suffolk County contends that given the existing wind conditions on Long Island, in the event any evacuation due to a radiological emergency is required, LILCO must evacuate at least a radius of five to seven miles around the plant. Any partial evacuation of only certain zones within a five to seven mile radius would expose the population of the nearby unevacuated zones to the risk of a sudden wind shift and consequent health-threatening exposure to radiation. Under these conditions, the LILCO plan of staged evacuation fails to constitute adequate protective action, as required by 10 CFR Sections 50.47(a)(1) and 50.47(b)(10).

In addition, a proposal to evacuate one zone without expecting residents of the bordering zone also to evacuate is unrealistic. People not located in a zone recommended to be evacuated will not stand by while their immediate neighbors evacuate in response to a protective action recommendation.

This is particularly so for people who live close to the plant. Accordingly, for this additional reason, LILCO's plan for staged evacuation of the inner EPZ zones is unworkable and thus not in compliance with 10 CFR Section 50.47(a)(1).

Further Preamble to SC Contentions 61-68: Food, Milk, Water and Livestock Control. 10 CFR Section 50.47(b)(10) requires that protective actions for the ingestion exposure pathway EPZ "appropriate to the locale" be in place. The ingestion exposure pathway generally covers an area approximately 50 miles in radius. 10 CFR Section 50.47(c)(2). Plans for the ingestion pathway are required to "focus on such actions as are appropriate to protect the food ingestion pathway." Id. The purpose of these requirements is to protect the public from consumption of contaminated foodstuffs. NUREG 0654, Section II.J.11.

Suffolk County contends that the LILCO Plan fails to comply with 10 CFR Sections 50.47(a)(1), 50.47(b)(1), 50.47(b)(3), 50.47(b)(9), 50.47(b)(10), and 50.47(c)(2), and NUREG 0654, Section II.J.11, because there is no reasonable assurance that adequate protective measures for the ingestion exposure pathway can or will be taken. The reasons are set forth in SC Contentions 61-68 which follow.

SC Contention 61: The LILCO Plan does not adequately identify the LILCO or LERO personnel who will be responsible for making or implementing protective action recommendations or decisions with respect to the ingestion exposure pathway EPZ. Specifically the Plan states that the Director of Local

Response is responsible for the protective action function (Plan, Figure 3.6.1), while the Health Services Coordinator will provide "coordination for local resources involved in controlling food, milk, water and livestock feed supplies" (Plan, at 3.6-8), and the Coordinator of Public Information will "advise farmers on the recommended practices with respect to livestock and agricultural products" (Plan at 3.6-8). However, the responsibility for implementation of the Ingestion Pathway Protective Action Procedure is assigned to the Dose Assessment Staff under the guidance of the Environmental Assessment Coordinator. (OPIP 3.6.6, section 2.0). The Plan thus fails to comply with 10 CFR Section 50.47(b)(1). Moreover, LILCO personnel do not have the authority to make recommendations or to take actions necessary to implement protective actions for the ingestion exposure pathway. N.Y. Exec. Law §20 et seq. (McKinney); N.Y. Penal Law § 190.25(3), 195.05 (McKinney) (See SC Contention 1).

SC Contention 62. The plan fails to provide for protective actions for the portion of the ingestion exposure pathway in the State of Connecticut. The Plan also fails to reference any agreement by which the State of Connecticut agrees to assume any or all such responsibilities. The Plan thus fails to comply with 10 CFR Sections 50.47(a)(1), 50.47(b)(1), 50.47(b)(10), 50.47(c)(2), and NUREG 0654, Section II.J.11.

SC Contention 63. OPIP 3.6.6 -- "Ingestion Pathway Protective Actions" -- requires dose projections to be made as a prerequisite to implementing the procedure. The projections are to be made according to OPIP 3.5.2. Such projections are inadequate for use in determining ingestion exposure pathway protective actions, however, because those dose projections are limited in scope to the area only 10 miles from the plant (OPIP 3.5.2 Section 5.2.7 and Attachment 3). Thus, they cannot be relied upon to provide the dose projections necessary for protective action recommendations for the 50 mile ingestion pathway EPZ. The Plan thus fails to comply with 10 CFR Sections 50.47(a)(1), 50.47(b)(9), 50.47(b)(10), 50.47(c)(2), and NUREG 0654, Section II.J.11.

SC Contention 64. The Plan has no procedures or guidance governing the disposition of contaminated lactating dairy animals, or the treatment of uncontaminated lactating dairy animals should uncontaminated stored feed not be available. (See OPIP 3.6.6, Attachments 7 and 8). Thus, there is no assurance that the milk or meat products of these farm animals will be kept from public consumption. Accordingly, contrary to 10 CFR Sections 50.47(a)(1), 50.47(b)(10), 50.47(c)(2) and NUREG 0654, Section II.J.11, there is no assurance that adequate protective measures will be taken to ensure that contaminated food stuffs will be kept from public consumption.

SC Contention 65. The Plan calls for withholding contaminated milk from the market to allow radioactive decay of short-lived radionuclides but does not call for its disposal or continued withholding after the decay period. (OPIP 3.6.6, Attachment 7, at 1). The presence of long-lived isotopes would pose a serious health consequence to the public. Furthermore, the Plan provides no standards for determining what constitutes an adequate "decay period" or for identifying short-lived radioisotopes. Finally, LILCO lacks the authority to institute actions to keep contaminated milk from the market. (See SC Contentions 1 and 61). The Plan thus fails to comply with 10 CFR Sections 50.47(a)(1), 50.47(b)(10), 50.47(c)(2) and NUREG 0654, Section II.J.11.

SC Contention 66. The Plan calls for washing contaminated fruit and vegetables and milling and polishing contaminated grains (OPIP 3.6.6, Attachment 7, at 1). LILCO has no authority to enforce this Plan directive. (See SC Contentions 1 and 61). Further, even if it were carried out, the Plan contains no procedures for disposing of the wash water or milling residue, which could pose a serious potential for adverse health consequences. Thus the Plan fails to comply with 10 CFR Sections 50.47(a)(1), 50.47(b)(10), 50.47(c)(2), and NUREG 0654, Section II.J.11.

SC Contention 67. The Plan does not provide for, and LILCO lacks the necessary authority to require, the confiscation of fish or other sea life from the Long Island Sound which may be contaminated, and thus does not consider the necessary range of foodstuffs. (See SC Contentions 1 and 61). Since one-half of the possible plume trajectories are over the Long Island Sound where there is much commercial and recreational fishing, there must be procedures for monitoring and controlling this path to the food chain. Without incorporating these considerations in Section 3.6.6 and the related OPIPs, the Plan does not meet the requirements of 10 CFR Sections 50.47(a)(1), 50.47(b)(10), 50.47(c)(2), and NUREG 0654, Section II.J.11.

SC Contention 68. The Long Island duck industry must be included for special consideration in the Plan. There must be procedures for putting commercially grown ducks on special feed and for restraining the movement of contaminated ducks into the commercial market and the food chain. LILCO's mere listing of the duck growers in OPIP 3.6.6 does not constitute the proper consideration. The dietary factor from OPIP 3.6.6, Attachment 6, which should be applied to commercially grown ducks should also be defined. Without the further development of duck procedures, the Plan does not comply with 10 CFR Sections 50.47(a)(1), 50.47(b)(10), 50.47(c)(2) and the guidance of NUREG 0654, Section II.J.11.

Town of Southampton Contention 3. 10 CFR Sections 50.47(b)(1), 50.47(b)(9) and 50.47(b)(10) require that protective actions for an approximate 50 mile ingestion exposure pathway be developed. The LILCO Plan describes measures at OPIP 3.6.6, Attachments 7 and 8, which it purports to be adequate for this particular EPZ. The Town of Southampton submits that these provisions are infeasible and/or inadequate in that:

(a) The Plan contains no maps showing key land use data, watersheds, water supply intakes and treatment plants and reservoirs, thus impeding or preventing emergency protective actions;

(b) The Plan contains no procedures nor other means for enforcement of the protective actions set forth in Attachments 7 and 8 of OPIP 3.6.6. The Plan does not state:

1. How the removal of lactating dairy animals from contaminated pasturage and/or the provision of substitute, uncontaminated stored feed, would be achieved or enforced;

2. How uncontaminated water sources are to be obtained or provided for lactating cows;

3. How the withholding of contaminated milk would be achieved or enforced;

4. How the prolonged storage and special pasteurization of milk would be achieved or enforced;

5. How the diversion of the production of fluid milk would be achieved or enforced;

6. How and from where alternate drinking water supplies would be made available;

7. How affected wells would be identified and isolated and reservoirs secured;

8. How the removal of surface contamination from fruits and vegetables by washing, milling, etc. would be achieved or enforced;

9. How the milling and polishing of contaminated grains would be achieved or enforced;

10. How and under what criteria meats, meat products and animal feeds are to be considered on a case-by-case basis;

11. How the introduction of milk supplies into commerce is to be prevented;

12. How the diet of all residents and visitors is to be restricted;

13. Who will pay for condemnation and under what procedures will condemnation be executed;

14. How the many informal local farm stands can be found and controlled;

15. How all livestock can be isolated; and

16. How exports of agricultural products from Suffolk County to other parts of the country can be controlled or prevented.

The Plan does not provide for personnel, facilities, equipment or even a communications network to implement these far reaching actions. Thus, LILCO has not developed adequate plans for the 50 mile ingestion exposure pathway.

SC Contention 69: Emergency Operations Center

Preamble to SC Contention 69. 10 CFR Section 50.47(b)(8) requires that "[a]dequate emergency facilities and equipment to support the emergency response are provided and maintained." Furthermore, NUREG 0654, Section II.H.3, requires the "establish[ment of] an emergency operations center for use in directing and controlling response functions." Among other things, the direction and control of response functions requires the following capabilities: prompt communications among principal response organizations to emergency personnel and to the public (10 CFR Section 50.47(b)(6)); the receipt and analysis of all field monitoring data and coordination of sample media (NUREG 0654, Section II.H.12); and early notification and clear instruction to the populace within the EPZ (10 CFR Section 50.47(b)(5)).

The LILCO Plan provides that the Shoreham Emergency Operations Center ("EOC") will be located at the LILCO Brentwood Operations Facility. LILCO states that "[o]n a day to day basis, the facility is operated 24 hours per day involved in LILCO business activities." (Plan, at 4.1-1). During an emergency at Shoreham, "a portion of this facility will be utilized as the Local EOC." (Id.). The EOC will not be activated until "declaration of an Alert or higher

classification" (id.), or until the Director of Local Response orders its activation. (OPIP 4.1.1, at 1).

SC Contention 69. Suffolk County contends that the LILCO Plan does not comply with 10 CFR Sections 50.47(b)(5), 50.47(b)(6) and 50.47(b)(8), and NUREG 0654, Sections II.H.3 and II.H.12, in that an EOC for use in directing and controlling response functions has not been established.^{3/} Until such a facility has been satisfactorily established, equipped and rendered operational, LILCO is unable to perform any of the following functions required by 10 CFR Section 50.47:

A. Notification of local response organizations and notification of emergency personnel by organizations (10 CFR Section 50.47(b)(5)).

B. Early notification and clear instruction to the populace in the EPZ (10 CFR 50.47(b)(5)).

C. Prompt communications among principal response organizations to emergency personnel and to the public (10 CFR 50.47(b)(6)).

^{3/} If LILCO ever establishes an EOC, the County may have specific contentions regarding its adequacy. Such contentions cannot be formulated at this time, however, given the lack of this facility.

D. Dissemination of coordinated information to the public (10 CFR 50.47(b)(7)).

E. Assessment and monitoring of actual or potential offsite consequences of a radiological emergency (10 CFR 50.47(b)(9)).

SC Contentions 70-76: Security During a Radiological Emergency

Preamble to SC Contentions 70-76. 10 CFR Section

50.47(b)(1) requires LILCO to demonstrate that it "has staff to respond and to augment its initial response on a continuous basis." LILCO must also "specify the functions and responsibilities for major elements . . . of emergency response," including law enforcement response. NUREG 0654, Section II.A.2.a.

The LILCO Plan identifies LILCO employees as being responsible, during an emergency, for establishing and maintaining security and access control for the EOC, directing traffic into the relocation centers, establishing and maintaining security at the relocation centers, and establishing and maintaining perimeter/access control to evacuated areas. (OPIP 2.1.1, at 51, and Attachment 2, at 47; OPIP 3.6.3, Attachment 4). The Plan also recognizes that once an area has been evacuated, "it will become necessary to provide security patrols to prevent vandalism or theft in vacated neighborhoods." The Plan assumes that "[t]he police will be responsible for securing a zone subsequent to the evacuation of its residents." (Appendix A, at IV-82).

For the reasons set forth in SC Contentions 70-76, Suffolk County contends that LILCO will be unable to provide during a

radiological emergency adequate security in evacuated areas, or at the EOC, relocation centers, or other areas where evacuees may congregate, and therefore the Plan fails to comply with 10 CFR Section 50.47(a)(1).

SC Contention 70. LILCO has no authority to exercise the police power which is delegated to local government officials by State law. Indeed, New York law prohibits several of the actions which LILCO proposes to take, namely directing traffic into the relocation centers, establishing and maintaining security at the relocation centers, and establishing and maintaining perimeter/access control to evacuated areas. N.Y. Veh. & Traf. Law §§1102, 1602 (McKinney); N.Y. Penal Law §§190.25(3), 195.05, 240.20(5) (McKinney). Since, as a matter of law, LILCO cannot exercise such responsibilities, those portions of its Plan could not and would not be implemented in the event of an emergency at Shoreham. The Plan thus fails to comply with 10 CFR Section 50.47(a)(1) and NUREG 0654, Sections II.J.9 and J.10.j.

SC Contention 71. The LILCO personnel assigned responsibility for providing security at the EOC and relocation centers or assigned responsibility for establishing and maintaining perimeter/access control to evacuated areas will have no means of enforcing LILCO's assumed authority over the

public, who are not LILCO employees. Accordingly, under LILCO's Plan there will not be adequate or effective security at the EOC or the relocation centers; further, LILCO will not be able to prevent access by the public into evacuated areas. The Plan thus fails to comply with 10 CFR Section 50.47(a)(1) and NUREG 0654, Sections II.J.9 and J.10.j.

SC Contention 72. The LILCO employees assigned responsibility for security will not have received the training necessary to enable them to perform the security functions assigned to them by the LILCO Plan, nor will they have had experience in performing such security functions. (See OPIP 2.1.1, at 51-54, Attachment 2, at 47-50; see SC Contentions 107-124 -- Training). As a result, effective and adequate security measures will not be implemented. The Plan thus fails to comply with 10 CFR Section 50.47(a)(1) and NUREG 0654, Sections II.J.9 and J.10.j.

SC Contention 73. LILCO personnel, even if trained for security work and if they had the necessary authority, could not adequately perform security functions. First, LILCO personnel have low credibility and are unlikely to be trusted by the public. (See SC Contentions 97, 100). Further, since the emergency will emanate from an incident at LILCO's own facility, the public will be likely to hold LILCO and its

personnel responsible for the emergency, which will cause LILCO's employees to be viewed with hostility and suspicion. As a result, orders or recommendations given to the public by LILCO employees who purport to be security officers may be ignored, and security measures will be ineffective.

SC Contention 74. LILCO has no agreements with police departments to provide security in evacuated areas. Thus, despite LILCO's recognition of the necessity for "security patrols to prevent vandalism or theft," (Appendix A, at IV-82), the Plan in fact fails to provide for such patrols, and therefore fails to comply with NUREG 0654, Section II.J.10.j. There further is no basis for an assumption that County police in fact will provide any support. The County legislature has adopted resolutions under which the County government will not take action in support of any LILCO plan. Thus the LILCO Plan cannot be implemented, in violation of 10 CFR Section 50.47(a)(1).

SC Contention 75. The LILCO Plan fails to provide for security at certain key areas within the EPZ where security will be essential, including fuel allocation points, staging areas for emergency response personnel and transfer points for evacuees. The Plan also fails to provide for security at the ENC. Without adequate security in these areas, adequate

protective measures could not and would not be implemented, in violation of 10 CFR Section 50.47(a)(1) and NUREG 0654, Section II.J.9.

SC Contention 76. NUREG 0654, Section II.J.10.j, requires that there be measures in place to control access to evacuated areas. The LILCO plan fails to provide adequate measures to control access to evacuated zones contrary to this NUREG 0654 requirement. (See Appendix A, Figure 8.) The LILCO plan is inadequate because:

- A. Many access points to evacuated areas are not scheduled to be controlled.
- B. The LILCO traffic guides lack authority to effect such access control.

As a result, persons may travel into contaminated areas and receive health-threatening radiation doses. Thus, the Plan fails to comply with 10 CFR Sections 50.47(a)(1) and 50.47(b)(10).

SC Contention 77: Medical and Public Health Support

10 CFR Section 50.47(b)(8) provides that there must be "[a]dequate emergency facilities and equipment to support the emergency response." Adequate emergency facilities must include provisions for hospital treatment and transportation to such hospitals for those who may become injured during an evacuation (recommended or voluntary). LILCO fails to meet this emergency planning requirement because:

A. It has not arranged with any hospitals to be available to administer medical treatment to members of the general public who incur injuries or illness as a result of an evacuation.

B. It has not arranged for ambulances to be available to transport injured members of the public to such hospitals.

C. Ambulances will be unable to respond where needed due to severe traffic congestion during an evacuation.

SC Contentions 78-96 and SOC Contention 4: Communications

Preamble to SC Contentions 78-82. 10 CFR Section

50.47(b)(5) requires that an offsite emergency plan include procedures for "notification, by the licensee, of State and local response organizations and for notification of emergency personnel by all organizations" In addition, Appendix E to 10 CFR Part 50 requires the licensee's emergency plan to describe "[t]he communication steps to be taken to alert or activate emergency personnel" 10 CFR Part 50, Appendix E, Section IV.C. Thus, procedures must be established regarding the "mutually agreeable bases for notification of response organizations . . . includ[ing] means for verification of messages" and "for alerting, notifying, and mobilizing emergency response personnel." NUREG 0654, Section II.E.1. and E.2. Moreover, the licensee must have the capability to notify these emergency personnel "within 15 minutes after declaring an emergency." 10 CFR Part 50, Appendix E, Section IV.D.3.

Prompt and reliable notification of emergency personnel depends upon an adequate, dependable and workable communications system. Without prompt and reliable notification of emergency personnel, there will be delays in alerting and activating emergency personnel and in implementing command and control decisions regarding appropriate protective actions for

the public. See NUREG 0654, Section II.F.1.e. Thus, LILCO is required to establish primary and backup means of communications for local response organizations and to ensure that these communication systems are compatible with one another. NUREG 0654, Section II.F.1. LILCO must also ensure that there will be 24-hour per day notification to, and activation of, the local emergency response network, including 24-hour per day manning of communications links that initiate emergency response actions. NUREG 0654, Section II.F.1.a.

Suffolk County contends that LILCO's communications system fails to provide assurance that there will be prompt and reliable notification to emergency response personnel. The specific deficiencies in LILCO's communications system are set forth in SC Contentions 78-82.

SC Contention 78. The LILCO Plan designates the LILCO Customer Service Office (Hicksville) as the primary notification point of the LERO. (Plan, at 3.3-1). As such, LILCO Customer Service is responsible for receiving initial and followup notifications of an emergency from SNPS, verifying authenticity and content of information contained in the notification messages, and notifying key emergency personnel, with the number of emergency personnel to be contacted increasing with the severity of the emergency. (See Plan, Figures 3.3.2,

3.3.3 and 3.3.4). Although the LILCO Plan does not indicate the number of personnel assigned to the Customer Service Office, or the training and equipment available to those personnel, LILCO has advised Suffolk County that there will only be two operators on duty during the eight-hour midnight shift. Moreover, the Plan makes no provisions for backup for the on-duty dispatcher(s) in the LILCO Customer Service Office. (See Plan, at 3.3-1). Thus, LILCO's Customer Service Office is not sufficiently staffed to serve as the primary notification point of the LERO. Further, there is no assurance that the personnel assigned to that Office will be adequately trained, or that there will be adequate equipment available to Customer Service personnel to permit the necessary notification in a timely manner, i.e., within 15 minutes after an emergency is declared. See 10 CFR Part 50, Appendix E, Section IV.D.3. As a result, LILCO's primary communications system for receiving initial notifications of an emergency, verifying the information received, and notifying emergency response personnel is deficient and not in compliance with 10 CFR Section 50.47(b)(5) or NUREG 0654, Sections II.E.1., E.2. and F.1.e., and provides no assurance that emergency personnel will be alerted, notified and/or mobilized.

SC Contention 79. Under the LILCO Plan, non-dedicated, commercial telephone lines provide the primary means of communications between the Shoreham Control Room and/or the Customer Service Office and Nassau County, the State of Connecticut, hospitals, the U.S. Coast Guard and the Federal Aviation Administration. (Plan, at 3.4-4; Figures 3.3.5 and 3.4.1). Moreover, until such time as the EOC is activated in an emergency, communications with BNL are limited to commercial telephone. (See Plan, Figure 3.3.5.) Commercial telephone lines are subject to overload or may be out of service due to adverse weather conditions, repair work or other reasons. As a result, there is no assurance that there will be prompt notification to these off-site emergency response agencies, in violation of the requirements of 10 CFR Sections 50.47(b)(5) and 50.47(b)(6) and NUREG 0654, Sections II.E.1, E.2 and F.1.e. See also 10 CFR Part 50, Appendix E.

SC Contention 80. The LILCO Plan provides for notification of key emergency personnel by pager. (Plan, at 3.4-4 and 3.4-5). There is no assurance, however, that these key personnel can reliably be contacted through the LILCO paging system due to the distance limitation in transmission, the fact that batteries for the pagers must be charged or replaced and tested on a regular basis, unavailability of the individuals

equipped with pagers (for example, because of illness or travel out of the paging area), and the fact that the pagers are activated by commercial telephone, which, for the reasons noted in SC Contention 79, may not provide an adequate and dependable means of communication. Moreover, the LILCO paging system must be accessed by commercial telephone and provides no means for determining whether emergency personnel in fact have received the paged message/notification. Nor is there any requirement in the LILCO plan for prompt confirmation to the EOC of a message by the employee to be contacted. As a result, there is no assurance that key emergency personnel will be alerted, notified and mobilized, in violation of 10 CFR Sections 50.47(b)(5) and 50.47(b)(6) and NUREG 0654, Sections II.E.1, E.2 and F.1.e.

SC Contention 81. The LILCO Plan provides for key emergency personnel, after being contacted through the LILCO paging system, to notify, in turn, other emergency personnel using non-dedicated, commercial telephones. The number of personnel to be contacted increases with the severity of the emergency. (See OPIP 3.3.2). However, commercial telephones are subject to overload or may be out of service. In addition, some emergency personnel will not be near telephones, or will be using their telephones or, for other reasons, will not be

contacted. Thus, there is no assurance that there will be prompt notification and mobilization of these emergency personnel, in violation of 10 CFR Section 50.47(b)(5) and NUREG 0654, Sections II.E.1, E.2 and F.1.e.

SC Contention 82. The LILCO Plan has no procedures for the prompt notification and mobilization of non-LILCO emergency support organizations, namely, the ARC, Salvation Army, hospitals and reception centers, ambulance and fire/rescue organizations, churches, industries, and other select volunteers. See NUREG 0654, Sections II.E.1, E.2 and F.1.e. Moreover, there is no provision for verification of messages to these support organizations, as required by NUREG 0654, Section II.E.1. Indeed, the LILCO Plan apparently contemplates notification of support organizations only if a Site Area or General Emergency has been declared by LILCO. (See Plan, Figure 3.3.4.) Thus, there is no assurance that there will be timely and reliable notification to the support organizations relied upon by LILCO. (See Plan, at 2.2-1 to 2.2-4). Moreover, if there is delay in notification until the Site or General Emergency level, there is a substantial possibility that these personnel, once notified, will be significantly delayed in mobilizing due to road congestion caused by people beginning to evacuate.

Preamble to SC Contentions 83-91. 10 CFR Section 50.47(b)(6) requires that an offsite plan must provide for "prompt communications among principal response organizations to emergency personnel and to the public." Prompt and reliable means of communications are essential not only for alerting and activating emergency personnel (see NUREG 0654, Section II.F.1.e), but also to ensure adequate communications among those personnel once they begin to respond after notification of the emergency. Without effective communications, there can be no assurance that necessary and recommended emergency actions, including those necessary to implement protective action recommendations, can and will be taken as required by 10 CFR Section 50.47(a)(1). Among other things, LILCO must demonstrate that its Plan provides for "communications with contiguous State/local governments within the Emergency Planning Zones," "communications as needed with Federal emergency response organizations," "communications between the nuclear facility . . . and radiological monitoring teams," and communications "for alerting or activating emergency personnel in each response organization. . ." NUREG 0654, Sections II.F.1.b, c, d and e. LILCO must also ensure that there will be a "coordinated communication link for fixed and mobile medical support facilities." NUREG 0654, Section II.F.2.

Suffolk County contends that LILCO's Plan does not provide for adequate, dependable and workable communications among emergency personnel following notification. The specific deficiencies in LILCO's communications system are set forth in SC Contentions 83-91.

SC Contention 83. No radio or dedicated telephone links to any Federal agencies are described in the Plan. Thus, the Plan fails to provide adequate and reliable means of communications with Federal emergency response organizations, as required by NUREG 0654, Section II.F.1.c. See FEMA Report, at 5.

SC Contention 84. Suffolk County contends that all necessary emergency personnel must be trained adequately in the proper use of the communications equipment relied upon by LILCO, including training in the proper use of radio frequencies, the range of coverage available for each frequency, and proper radio discipline. The LILCO Plan, however, only requires that there be "communication drills" and that exercises shall test, inter alia, emergency response capabilities, "including communications capabilities." (Plan, at 5.2-2 and 5.2-3). The LILCO Plan gives no indication of the details of the communication drills and exercises, including whether training will encompass the proper use of radio frequencies,

the range of coverage available for each frequency, and proper radio discipline. Thus, there is no assurance that LILCO's Plan satisfies the requirements of 10 CFR Section 50.47(b)(15) or that emergency response personnel will be prepared and adequately trained to initiate and receive communications, as required by 10 CFR Section 50.47(b)(6) and NUREG 0654, Section II.F.

SC Contention 85. The LILCO Plan does not specify the number of emergency personnel that will be assigned responsibility for manning communications equipment at the EOC, transfer points, dispatch stations, or other communication posts. Further, the Plan does not provide for trained personnel capable of keeping communications equipment operational (repair technicians). As a result, the Plan fails to comply with the requirements of 10 CFR Sections 50.47(b)(5) and 50.47(b)(6) and NUREG 0654, Sections II.E.1, E.2, and F.1.

SC Contention 86. The LILCO Plan fails to demonstrate that there will be sufficient and adequate communications equipment to ensure effective communications among emergency personnel. If portable radios are provided to emergency field personnel (see Plan, at 3.4-3), the radios will have a limited broadcast range. Moreover, portable radios operate on battery power and the batteries are effective only for a short

time. The LILCO Plan, however, makes no provision for recharging radio batteries. If, on the other hand, mobile radios are provided to emergency field personnel (see Plan, at 3.4-3), communication will only be possible if the personnel are in their vehicles. Moreover, mobile radios operate on battery power and the Plan makes no provision for assuring that transmission and reception of radio messages will be possible. Nor does the LILCO Plan take into account the fact that persons other than emergency response personnel (i.e., the public) will have access to the radio frequencies used by LILCO. Further, the LILCO Plan relies upon a simplex radio system, which limits the range of the portable radios. As a result, many emergency field personnel will be unable to hear other field personnel who attempt to communicate on the same frequency. Thus, radio communications with and among field personnel will be severely limited, and inadequate, in violation of 10 CFR Section 50.47(b)(6) and NUREG 0654, Section II.F.

SC Contention 87. There is no backup communications system for the five frequency Emergency Radio System which provides communications between the EOC emergency response coordinators and field emergency response personnel, including field survey teams, traffic guides, road crew and evacuation route spotters, bus staging locations, bus transfer points, and

ambulance and fire/rescue dispatch stations. (See Plan, at 3.4-3). Nor are there any backup frequencies to the five frequencies which comprise the Emergency Radio System, even though the amount of radio traffic anticipated for an emergency at Shoreham could not be adequately handled by five frequencies. Such backup systems are required by 10 CFR Part 50, Appendix E, Section IV.E.9. and NUREG 0654, Section II.F.1. As a result of the lack of such backup systems, there is no assurance that recommended and appropriate emergency actions will be implemented, since command and control instructions may not be communicated to emergency response personnel in the field, as required by 10 CFR Section 50.47(b)(6) and NUREG 0654, Sections II.F.1 and F.2.

SC Contention 88. Under the LILCO Plan, communications between field personnel and the EOC response coordinators will, in some cases, be relayed through transfer points. (Plan, at 3.4-3). As a result, some field emergency response personnel will be unable to communicate directly with the EOC and their respective response coordinators. This lack of direct communications will result in the delay of implementation of emergency actions, in violation of 10 CFR Sections 50.47(a)(1) and 50.47(b)(6) and NUREG 0654, Section II.F.

SC Contention 89. The LILCO Plan fails to demonstrate that there will be adequate means of communication between the Shoreham facility and BNL field monitoring teams, as required by NUREG 0654, Section II.F.1.d. See FEMA Report, at 5. As a result, there is no assurance that necessary and appropriate emergency actions, including those necessary to implement protective action recommendations, can or will be taken, as required by 10 CFR Sections 50.47(a)(1), 50.47(b)(9), and 50.47(b)(10).

SC Contention 90. The LILCO Plan relies on existing radios in hospitals and in ambulance and fire/rescue vehicles for communications between LILCO and such response entities or personnel during an emergency. (Plan, at 3.4-3.) However, the LILCO Emergency Radio System will not be compatible with the radio communications equipment used in day-to-day operations by hospitals and by ambulance/fire/rescue vehicles; nor will the LILCO system have direct access to the radio frequencies used by hospitals and by ambulance/fire/rescue vehicles. Indeed, LILCO has advised Suffolk County that the EOC will not be equipped with fire/rescue, Emergency Medical Services, or hospital frequencies. Therefore, LILCO proposes to relay communications between the EOC and such vehicles through unidentified dispatch locations. (Id.). However, this

precludes direct communications among the EOC and emergency response personnel in the field, which may delay the implementation of emergency actions. Moreover, if by "dispatch locations" LILCO refers to those operated by non-LILCO organizations or personnel, without agreements from such organizations or persons, LILCO cannot rely on their availability. As a result, there is no assurance that "a coordinated communication link for fixed and mobile medical support facilities exists," as required by NUREG 0654, Section II.F.2.

SC Contention 91. Suffolk County contends that all field emergency personnel should be equipped with portable or mobile radios or other means of communications to the EOC. LILCO has advised the County that each field survey team, traffic guide, road crew, and evacuation route spotter, and each bus staging location, bus transfer point and ambulance/fire/rescue dispatch station, will be equipped with portable or mobile radios. However, the LILCO Plan does not require that these field emergency personnel be equipped with portable or mobile radios, or other communications equipment. Moreover, there is no requirement in the Plan that the personnel assigned security duties and responsibilities are to be equipped with portable or mobile radios. In addition, those field emergency personnel equipped with radios will be limited to the use of

one frequency, without a backup frequency. As a result, should communication problems develop on a particular frequency, field personnel will be without means of communication to the EOC, in violation of 10 CFR Section 50.47(b)(6) and NUREG 0654, Section II.F.

Preamble to SC Contentions 92-96. 10 CFR Section 50.47(b)(5) requires the licensee to establish "means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone. . ." In addition, Appendix E to 10 CFR Part 50 requires "each nuclear power reactor licensee [to] demonstrate that administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway EPZ." The "design objective" of this prompt public notification system is "to have the capability to essentially complete the initial notification of the public within the plume exposure pathway EPZ within about 15 minutes." 10 CFR Part 50, Appendix E, Section IV.D.3. See also NUREG 0654, Section II.E.6. and Appendix 3 thereto (minimum design objectives include the "[c]apability for providing both an alert signal and an informational or instructional message to the population on an area wide basis throughout the 10 mile EPZ within 15 minutes" and "[s]pecial arrangements" to assure "100% coverage within 45 minutes of the population who may not have received the initial notification within the entire plume exposure EPZ". NUREG 0654, Appendix 3).

Prompt notification to the public, including special facilities (schools, hospitals, major employers, nursing homes,

medical support hospitals and other health care facilities) and invalid/disabled persons within the EPZ, is important to the effective implementation of appropriate protective actions. The public must first be alerted to the existence of the emergency, and then be given clear instructions with regard to the specific protective actions to be taken.

Suffolk County contends that under LILCO's Plan, there is no assurance that the public will receive notification of an emergency within 15 minutes. The specific deficiencies in the LILCO Plan are set forth in SC Contentions 92-96.

SC Contention 92. Under the LILCO Plan, a system of 89 fixed sirens will be used to alert the public to an emergency at the Shoreham plant. (Plan, at 3.4-5). However, as a result of the deficiencies noted in SC Contentions 78-82, LILCO will be unable to contact its key command and control personnel in a timely manner, thus potentially delaying the decision to activate the siren system, in violation of 10 CFR Section 50.47(b)(5) and NUREG 0654, Sections II.E.1 and E.6. See NUREG 0654, Section II.E.6, Appendix 3.

SC Contention 93. The LILCO Plan does not provide adequate backup in the event of failure of the LILCO siren system. LILCO relies upon public address systems or loudspeakers, mounted on LILCO vehicles driven by "Route Alert Drivers,"

to provide backup to the sirens. (Plan, at 3.3-4 and 3.4-6; OPIP 3.3.4, at 3). However, the proposal to drive vehicles equipped with loudspeakers through the non-activated siren areas to alert the public is impractical and unworkable. In the event of an emergency requiring immediate evacuation or sheltering, it will take LILCO personnel too long to mount the loudspeakers and drive through the EPZ. Moreover, some persons will not hear the broadcast message (such as persons with impaired hearing, persons outside the EPZ), and other persons will not understand the broadcast message (such as children, non-English speaking persons). Route alert drivers are also required to abandon a route if dosimetry readings exceed specified levels. (OPIP 3.3.4, at 5, Attachment 1). Accordingly, entire segments of the population may never be alerted to the emergency, in violation of 10 CFR Sections 50.47(a)(1) and 50.47(b)(5) and NUREG 0654, Sections II.E.5 and E.6.

SC Contention 94. The LILCO Plan provides for tone activated alert radios for alerting those organizations with a large number of personnel, such as schools, hospitals, nursing homes and major employers. (Plan, at 3.3-4, 3.3-5 and 3.4-6 and Table 3.4.1). Each special facility will be equipped with a tone alert radio which, upon activation by the EBS signal from WALK radio, is to broadcast automatically the emergency

message. LILCO contends that these tone activated alert radios will provide special facilities with additional alerting or preparation time. However, since notification would coincide with notification to the general public, in fact these special facilities would not have any additional alerting or preparation time (for evacuation, sheltering, or implementation of other protective actions). Moreover, these radios depend upon the EBS signal broadcasting from WALK radio station. Should the EBS signal originate from other stations, the radios would not activate and there would not be automatic transmission of the EBS message. Further, WALK radio does not broadcast on its AM frequency 24 hours per day; nor does WALK radio have a backup to its utility power. Thus, there is no assurance that tone alert radios will provide adequate notification of an emergency to special facilities within the EPZ, in violation of 10 CFR Sections 50.47(a)(1) and 50.47(b)(5), 10 CFR Part 50, Appendix E, Section IV.D and NUREG 0654, Sections II.E.5 and E.6.

SC Contention 95. Under the LILCO Plan, the evacuation of special facilities (schools, hospitals, nursing homes and other health care facilities) and of invalid/disabled persons from private residences, requires the Special Facilities Evacuation Coordinator, or his designee(s), to

contact the special facilities and individuals to verify that they are aware of the need to evacuate and to determine their specific needs for assistance. (OPIP 3.6.5). In addition, reception hospitals, ambulance dispatch stations, bus companies, relocation centers, the ARC, volunteer organizations, an unnamed lumber company and the LIRR must be contacted so that evacuation procedures can be coordinated. Non-dedicated, commercial telephone lines are to be used in implementing these evacuation efforts. This does not provide an adequate, workable or dependable means of communication, as required by 10 CFR Sections 50.47(b)(5) and 50.47(b)(6) and NUREG 0654, Sections II.E.1, E.2, E.5, E.6, F.1 and F.2, since commercial telephone lines may overload or otherwise be out of service (lines may be down due to storm damage or other factors).

SC Contention 96. Under the LILCO Plan, the U.S. Coast Guard is relied upon to provide public notification services for the general public on the waters within the 10-mile EPZ and to restrict access to the EPZ during a radiological emergency at Shoreham. (Plan, at 2.2-2). Since much of the EPZ covers the Long Island Sound, prompt notification is important because of the large numbers of boaters and swimmers in those waters and because the wind blows offshore a substantial portion of the time.

Suffolk County contends that the LILCO Plan neither provides for prompt notification to the population on the waters of the EPZ nor assures that access to the EPZ will be restricted during a radiological emergency, in violation of 10 CFR Section 50.47(b)(5), 10 CFR Part 50, Appendix E, Section IV.D. and NUREG 0654, Sections II.E.5 and E.6, because:

A. LILCO has no agreement with the Coast Guard to provide notification to boaters and swimmers or to prevent access to the waters within the EPZ;

B. Even if there were such agreements, the Coast Guard will take hours to respond, thus preventing timely (15-minute) notification to the public;

C. The Coast Guard does not have adequate boats and personnel to cover the perimeter of the EPZ. Thus, it will be unable to restrict access to the EPZ effectively.

SOC Contention 4: The Hearing-Impaired.

Under LILCO's Plan, the principal means of informing the public of an emergency at Shoreham are the siren system and the broadcasting of emergency broadcast messages over the radio. Neither method serves to notify the deaf and hearing-impaired. LILCO's solution to this problem is to pre-register such persons so that they can be contacted directly by LERO personnel when an emergency is announced. (See Appendix A, at

II-18). However, the proposed alternate means of making these contacts is by commercial telephone, which deaf persons cannot use. (Id.). Indeed, if pre-registered persons do not answer the phone (or if the phones are not working properly), they will not be evacuated. (OPIP 3.6.5, at 2-3). Thus, the LILCO Plan provides inadequate protection for the deaf and hearing-impaired, and violates 10 CFR 50.47(b)(6) and NUREG 0654, Section II.E.6 and II.J.10.c.

SC Contentions 97-102 and SOC Contention 5: Public Notification/Information

Preamble to SC Contentions 97-102: 10 CFR Section 50.47(b)(5) establishes the requirement that there be means to provide notification and clear instruction to the populace within the plume exposure pathway EPZ and that the content of effective messages to the public must be established. NUREG 0654, Sections II.E.5 and 7, further provide that systems for disseminating appropriate information to the public must be established and that there must exist clear, pre-drafted messages designed to instruct the public regarding specific protective actions. It is important for the public to have accurate and clear information so that it will be able to take appropriate protective actions. If information is not provided clearly or is not understood, the public will fail to take appropriate protective actions, resulting in increased exposure.

Suffolk County contends that LILCO's Plan does not provide, and that LILCO is not capable of providing, adequate information to be received by the public during an emergency. The specific deficiencies in LILCO's public information scheme are set forth in the SC Contentions 97-102.

SC Contention 97. Survey data show that the public does not perceive LILCO as a credible source of information. Indeed, more than 60 percent of the people within 10 miles of Shoreham would not trust LILCO at all to tell the truth about a Shoreham accident. Further, LILCO may be viewed hostilely as the source of the problem in the first place, or skeptically because the public will perceive that it is not in LILCO's financial interest to disclose all pertinent information. For instance, members of the public will perceive that LILCO will not disclose the seriousness of an accident due to fears of lower rating in the financial markets, NRC sanctions, or a lower public image than already exists. Therefore, for the foregoing reasons, people will tend to disregard or disobey instructions from LILCO. Failure to take appropriate protective actions will result in increased exposure to the population. Thus, LILCO has failed to comply and, indeed, cannot comply with 10 CFR Section 50.47(a)(1) which requires that adequate protective actions be capable of being implemented and 10 CFR Section 50.47(b)(5) which requires that there be means to provide effective instructions to the public.

SC Contention 98. Many people will have discarded, not read or not remembered the information in LILCO's information brochure and other educational materials. (See SC

Contentions 104-106). Accordingly, many people will not be able to take appropriate protective actions even if they might otherwise want to because they will not remember to tune to radio station WALK, what zones they live in, what routes they should take, or which relocation centers they should go to. Therefore, in the event of an evacuation, they will not follow prescribed routes, thus increasing greatly their evacuation times and rendering ineffective the overall notification and protective action scheme contemplated in the LILCO Plan. This constitutes noncompliance with the 10 CFR Section 50.47(b)(5) requirement that means be established to provide clear instruction to the public within the plume exposure EPZ.

SC Contention 99. The proposed LILCO posters and telephone book advertisements and EBS messages do not tell the reader what zone he or she is in, nor do they describe the zones in which protective actions must be taken or the prescribed routes to take from those zones. See FEMA Report at 5, citing non-compliance with NUREG 0654, Section II.E.7. Therefore, someone who does not have access to a brochure will not be able to identify his or her zone or follow the appropriate prescribed route out of the zone of danger. LILCO has thus failed to provide clear and effective instruction to the public within the plume exposure EPZ, thereby violating 10 CFR Section 50.47(b)(5).

SC Contention 100. The sample messages in the Plan (Attachment 3.8.1) do not provide adequate or accurate information because:

A. Almost all the messages instruct the public that the release is not expected to pose a serious health hazard, although LILCO cannot make such a determination in advance of an accident. These messages could cause members of the public to fail to take the emergency seriously when, in fact, the situation is serious. The messages should be revised to make clear that a serious health hazard may in fact be likely but that uncertainties make precise prediction impossible. Such an accurate message is required under 10 CFR Section 50.47(b)(5) and NUREG 0654, Section II.E.7.

B. The messages identify a LILCO employee (Director of LERO) as the source of the information and the protective action recommendation. However, data show the public will not consider a LILCO employee to be a credible source of information or advice and thus will not obey his instructions. (See SC Contention 97). Therefore, there is no assurance that the messages will accomplish their intended purpose of providing clear instruction to the public.

SC Contention 101. LILCO's proposed rumor control point (Plan, at 3.8-5) is to be manned by LILCO employees.

Suffolk County contends that this rumor control effort will be ineffective and will fail to comply with NUREG 0654, Section II.G.3.c, because it relies on a non-credible source of information, i.e., LILCO (see SC Contention 97), for the purpose of controlling rumors. Thus, rumors will not be effectively controlled and LILCO, as noted above, will not comply with NUREG 0654, Section II.G.2.c and 10 CFR Section 50.47(b)(5).

SC Contention 102. LILCO intends that EBS messages will be broadcast simultaneously by WALK AM and FM. (Plan at 3.3-6). However, WALK AM does not operate at night. Therefore, those persons without FM radios (especially people in cars) will be unable to receive adequate information in the event a radiological accident occurs at night, contrary to the requirements of 10 CFR Section 50.47(b)(5).

SOC Contention 5. Under the LILCO Plan, the emergency broadcast messages which are to be transmitted by WALK in the event of an emergency at Shoreham will be delivered exclusively in English. However, data from the 1980 census show that there are more than 1,300 Hispanic residents of the towns of Riverhead and Brookhaven who speak English either poorly or not at all. These people will not understand LILCO's messages. The Plan therefore fails to provide, as required by 10 CFR Section 50.47(b)(5) and NUREG 0654, Section II.E.6, assurances

that the public will receive current information during the course of an emergency.

SC Contention 103-106 and SOC Contentions 6-8: Public Education

Preamble to SC Contentions 103-106. The NRC's emergency planning regulations require that the public receive information on a periodic basis on the nature and effects of radiation, protective measures which should be taken in the event of a radiological emergency, methods of public notification and other such information. 10 CFR Section 50.47(b)(7) and 10 CFR Part 50, Appendix E, Section IV.D.2. Public education materials should include written material that is likely to be available in a residence during an emergency. NUREG 0654, Sections II.G.1 and 2. In addition, measures must be taken to inform transients of the proper action to be taken during a radiological emergency. NUREG 0654, Section II.G.2. It is crucial to any radiological emergency response effort that the public have accurate and truthful knowledge of the nature of the threat, the protective actions available and the effectiveness of such protective actions. Otherwise, public confusion and ignorance will hamper the emergency response, thus increasing the danger of exposure.

Suffolk County contends that LILCO's public education program will not prepare the public adequately for a radiological emergency at Shoreham. Specific deficiencies in LILCO's program are set forth in SC Contentions 103-106.

SC Contention 103. LILCO has drafted a public education brochure entitled "Emergency Procedures: Shoreham Nuclear Power Station." The content of LILCO's public information brochure is misleading and incomplete and thus this aspect of the public information program fails to comply with 10 CFR Section 50.47(b)(7), 10 CFR Part 50, Appendix E, Section IV.D.2, and NUREG 0654, Sections II.G.1 and 2. In particular:

A. The brochure erroneously states (at page 3) that all leaks of radioactive material will be held inside the containment building. Such a statement ignores the fact that severe accidents can cause radioactive materials to be released into the environment.

B. The brochure erroneously states (at page 4) that all offsite workers will be in place to help the public when, in fact, LILCO cannot guarantee that this will be so because:

1. Offsite emergency workers will first look after the safety of their families;
2. Offsite emergency workers may take hours to mobilize and be ready at their posts;
3. It may be impossible to contact many offsite emergency workers;
4. For actions proposed by LILCO pertaining to traffic control, the LILCO offsite workers lack authority to take the actions they are scheduled to take; and

5. Many offsite emergency workers are not LILCO employees and LILCO has no agreements that they will in fact participate in the LERO program.

C. With respect to the value of sheltering, the brochure states (at page 6) that:

In most cases, nearby residents would be advised to remain indoors. This provides safety because buildings block the outside radiation.

This statement is incomplete and misleading because it implies that sheltering will offer complete or adequate protection. In fact, sheltering will reduce doses by only a fraction and thus will not provide adequate protection. (See SC Contentions 19-24) Indeed, according to LILCO, if one shelters in the typical Long Island home, one will still receive (on the average) 70 percent of the dose one would receive if standing outside. (See OPIP 3.6.1, at 21 (footnote)). Such a dose will result in severe health consequences in many accident scenarios. Thus, the brochure needs to be amended to make clear that for many accidents, sheltering will not provide adequate protection.

D. The brochure inaccurately implies (at page 7) that a bus or automobile will provide effective protection from radiological exposures. In fact, a bus or automobile provides almost no protection from radiological exposure.

E. The LILCO brochure's discussion of radiation effects is limited to natural sources and very low levels of radiation. It does not adequately address the magnitude of doses that the public might receive during a severe accident, such as one requiring EPZ evacuation, nor the health-threatening consequences related to such releases. Such inadequate disclosure of essential facts renders the brochure incredible. Further, the brochure does not discuss adequately the health consequences of exposure to low-level radiation, particularly:

1. The detrimental physiological effects of various levels of exposure;
2. The increased risk of cancer both to the population as a whole and to individuals; and
3. The possibility of genetic defects in future generations.

Such information is necessary so that the public will be aware of the seriousness of exposure to radiation and take all appropriate protective actions to avoid such exposure.

F. The LILCO brochure does not inform the public that LILCO itself, in the form of LERO, will be issuing all information and protective action recommendations, as well as performing almost all emergency response tasks. It is

important that the public be aware of the source of all emergency information so that it may assess and evaluate the information it is receiving.

G. Although LILCO has informally advised the County that the brochure will be distributed to all households within 20 miles of the plant, the Plan does not reflect that information. In any event, the brochure fails to inform those outside the EPZ that they may be exposed to levels of radiation in excess of EPA's Protective Action Guides and that protective actions may be required outside the EPZ in some circumstances. Such information is essential so that people outside the EPZ will be able to take appropriate protective actions if so required.

H. The brochure (at page 5) states that the public will be notified long in advance of any actual danger. This is inaccurate and ignores the possibility that in the case of a fast-moving event (see NUREG 0654, Appendix 1, at 1-16 and 1-17) there may be little time between notification and actual danger.

I. The brochure does not address the particular needs of persons on the eastern end of Long Island who, though not in the EPZ, have special concerns about Shoreham. In particular, people on the East End may seek to evacuate and

thus will need routing instructions and directions to appropriate relocation centers. In addition, they should be informed of the danger of traveling toward the plant and, potentially, toward the plume in the event of a release from the plant.

J. The brochure does not inform the reader that in the event of an evacuation or after sheltering, he or she should report to a relocation center to be monitored and, if necessary, decontaminated.

K. The brochure is missing much specific detail, particularly: what radio stations are participants in the EBS system other than WALK; detailed zone and evacuation maps; and identification of relocation centers, schools and school districts. See FEMA Report at 6, citing non-compliance with NUREG-0654, Section II.G.2.

SC Contention 104. LILCO proposes that it will conduct all public education activities designed to inform the public of Shoreham and of actions to be taken in a Shoreham emergency. Suffolk County contends that LILCO is not capable of effectively educating the public on these matters. A survey of Long Island residents revealed that LILCO is not regarded by the public as a credible source of information. Therefore, the public will likely disregard or discount purported educational

materials received from LILCO regarding preparations for a radiological emergency at Shoreham. Thus, LILCO cannot comply with 10 CFR Section 50.47(b)(7) or NUREG 0654, Sections II.G.1 and 2.

SC Contention 105. Assuming arguendo that LILCO is capable of carrying out an adequate public education program, the program described by LILCO is defective for failing to use an effective array of media. For instance, its program ignores the use of radio and television which in many cases are more effective for educating large portions of the population. LILCO instead relies solely on written material such as its brochure, telephone book inserts and posters to educate the public. However:

A. A substantial segment of the population will not read the LILCO materials because they do not understand their significance, they are not interested or concerned or they are skeptical of LILCO. Reasons that persons will not read the materials are:

1. Few people read utility brochures.
2. Few people read telephone books for educational purposes.

3. With respect to apartment dwellers, LILCO has left the responsibility of distributing its brochure to

individual building managers (Plan, at 3.8-2) who may or may not perform that task.

4. Direct mail information will be viewed as junk mail and thrown away.

5. Posters in motels, gas stations, etc. and signs on beaches will not be read by the transient population.

B. Others will read the information when they receive it, but will subsequently discard or misplace it and will not remember the contents when a radiological emergency occurs.

C. Still others will read the information but not understand it.

SC Contention 106. The proposed LILCO posters and telephone book inserts do not tell the reader what zone he is in and therefore the reader could not follow his prescribed evacuation route. Thus, these items are not effective and do not comply with 10 CFR Section 50.47(b)(7). Further, even if people know the prescribed evacuation routes for the zone in which they live, the LILCO plan does not assure that if such people are visiting other zones (such as to pick up their children at a school which is in another zone), they will be able to determine quickly and reliably the prescribed routes by which to evacuate from that zone.

SOC Contention 6: Public Education of Schoolchildren. 10
CFR Section 50.47(b)(7) and NUREG 0654, Section II.G.1 require emergency plans to provide for periodic, advance dissemination of information to the public regarding nuclear emergencies and responses thereto. SOC contends that the brochure and other printed educational materials which accompany the LILCO Plan will not be read and/or understood by schoolchildren.

SOC Contention 7: Illiterate Persons and the Blind. The public education materials which would, under the LILCO Plan, be distributed within the plume EPZ, cannot be read by the illiterate, the blind, or the severely vision-impaired. The Plan does not indicate that Braille-encrypted materials will be distributed, or that alternative media (such as radio) will be employed to educate the public, and it thus violates 10 CFR Section 50.47(b)(7) and NUREG 0654, Section II.B.1.

SOC Contention 8: Spanish-speaking Persons. The public education materials which would, under the LILCO Plan, be distributed within the plume EPZ, are written exclusively in English. However, data from the 1980 census show that there are more than 1,300 Hispanic residents of the towns of Brookhaven and Riverhead who speak English either poorly or not at all. These people will not understand LILCO's materials.

The Plan therefore fails to provide, as required by 10 CFR Section 50.47(b)(7) and NUREG 0654, Sections II.B.1 and II.J.10(c), assurances that all segments of the public will receive sufficient advance emergency planning information.

SC Contentions 107-124: Training

Preamble to SC Contentions 107-118. 10 CFR Section 50.47(b)(15) requires that "[r]adiological emergency response training [be] provided to those who may be called on to assist in an emergency." In addition, Appendix E to 10 CFR Part 50 requires the licensee's emergency plans to provide for: "(1) the training of employees and exercising, by periodic drills, of radiation emergency plans to ensure that employees of the licensee are familiar with their specific emergency response duties"; and, "(2) the participation in the training and drills by other persons whose assistance may be needed in the event of a radiation emergency . . ." 10 CFR Part 50, Appendix E, Section IV.F.

Under the LILCO Plan, in order to provide training "to those who may be called on to assist in an emergency," LILCO must ensure that both its own personnel and the personnel of non-LILCO emergency response organizations are adequately trained. In short, LILCO must ensure the training of all "appropriate individuals." NUREG 0654, Section II.0.1.

Suffolk County contends that LILCO's Plan fails to demonstrate that adequate training can and will be provided to emergency response personnel.^{4/} As a result, there is no assurance that these personnel will be capable of providing a prompt and effective response to an emergency at Shoreham. With respect to the initial training of LILCO and non-LILCO personnel, the specific deficiencies in LILCO's training program are set forth in SC Contentions 107-117. With respect to the periodic retraining of LILCO and non-LILCO personnel, the specific deficiencies in LILCO's program are set forth in SC Contention 118.

SC Contention 107. In violation of 10 CFR Section 50.47(b)(15), 10 CFR Part 50, Appendix E, Section IV.F. and NUREG 0654, Section II.O, the LILCO Plan fails to demonstrate that adequate training will be provided with respect to:

A. An understanding of the LILCO emergency planning basis and emergency classification system;

^{4/} LILCO has advised Suffolk County that training materials are still under development. When those materials are developed and produced for the County's review, the County may revise these contentions. More specific contentions cannot be formulated at this time, given the lack of the LILCO training materials.

B. Basic principles of radiation and health effects/health physics;

C. How to deal with problems unique to radiological emergencies, such as the high levels of anxiety and distrust a radiological emergency is likely to provoke, leading to both population overreaction (spontaneous evacuation) and underreaction (failure to evacuate); and

D. The specific tasks and duties under the Plan and implementing procedures.

SC Contention 108. The LILCO Plan fails to demonstrate that adequate training will be provided with respect to the details of the Plan and its implementing procedures. The Plan also fails to demonstrate that training methods will encompass changing needs and circumstances and fails to define acceptable standards of performance for each response role during initial and requalification training. Instructor qualifications are not set forth in the Plan; nor are lesson plans or specific training objectives. Moreover, despite references in the Plan to the contrary (see, e.g., OPIP 5.1.1, at 9), there is no training manual for emergency response personnel, nor does LILCO intend to develop such a training manual. In addition, with few exceptions, neither the FEMA training courses (Plan, at 5.1-1 and Table 5.1-1) nor the training

courses offered by the ARC (Plan, at 5.1-7 and Attachment 5.1.1) will be used to train LERO personnel. Thus, there is no assurance that there will be adequate training of the personnel relied upon by LILCO to implement the Transition Plan, as required by 10 CFR Section 50.47(b)(15) and NUREG 0654, Section II.0.1. See FEMA Report, at 15.

SC Contention 109. LILCO is required to "provide site specific emergency response training for those offsite emergency organizations who may be called upon to provide assistance in the event of an emergency." NUREG 0654, Section II.0.1.a. Moreover, LILCO is required to provide initial training and periodic retraining to, among others, personnel responsible for accident assessment, police, security and fire fighting personnel, first aid and rescue personnel, local support services personnel, and medical support personnel. NUREG 0654, Sections II.0.4.b, d, f, g and h. Under the LILCO Plan, LILCO intends to "offer" emergency response training "to all members of LERO support organizations, including fire and ambulance companies, police, and private groups." (OPIP 5.1.1, at 3). However, the Plan does not include a specific list of organizations which are to receive emergency response training. Nor does the Plan specify the initial and periodic retraining that is to be provided to each emergency response organization

that may be called upon by LILCO "to provide assistance in the event of an emergency." NUREG 0654, Section II.O.1.a. In addition, unlike its own personnel, LILCO cannot require non-LILCO personnel to receive training, and there is no indication in the LILCO Plan that any emergency response support organizations have agreed to have their personnel trained by LILCO. Nor are there agreements by individual emergency workers to attend LILCO training sessions. In the absence of such agreements, there is no assurance that an adequate number of trained emergency workers will be available to respond to an emergency at Shoreham, in violation of 10 CFR Sections 50.47(a)(1) and 50.47(b)(15), 10 CFR Part 50, Appendix E, Section IV.F and NUREG 0654, Sections II.O.1.a and O.1.b.

SC Contention 110. With respect to non-LILCO personnel, the training offered by LILCO may be in direct conflict with the training given to the emergency personnel of support organizations, such as the ARC and fire/rescue squads. As a result, coordination of the emergency response will be significantly impaired, resulting in a failure to accomplish necessary training goals in violation of 10 CFR Section 50.47(b)(15), 10 CFR Part 50, Appendix E, Section IV.F, and NUREG 0654, Section II.O.1.

SC Contention 111. LILCO's Plan fails to deal effectively with the problems of attrition. For LILCO personnel, "[a]n initial qualification course will be scheduled each quarter for newly assigned emergency response organization staff designees . . ." (OPIP 5.1.1, at 2). However, to ensure compliance with 10 CFR Section 50.47(b)(15), 10 CFR Part 50, Appendix E, Section IV.F and NUREG 0654, Section II.O.1, LILCO must demonstrate that all personnel are trained in their designated emergency response organization positions. Thus, LILCO should make satisfactory completion of its emergency response training program a prerequisite to the hiring of personnel who will be assigned emergency response duties.

SC Contention 112. With respect to non-LILCO personnel, LILCO's Plan ignores the issue of attrition. LILCO cannot require non-LILCO personnel to receive training. Further, LILCO will not know whether personnel in emergency response support organizations who might have been trained by LILCO remain with their respective organizations, and thus remain available to respond to an emergency at Shoreham. As a result, LILCO cannot demonstrate that adequate numbers of trained, support organization personnel will be available to respond to an emergency at Shoreham and thus cannot demonstrate compliance with 10 CFR Sections 50.47(a)(1) and 50.47(b)(15), 10 CFR Part 50, Appendix E, Section IV.F and NUREG 0654, Section II.O.1.

SC Contention 113. Training of emergency response personnel will not overcome the role conflict that will be experienced by both the LILCO and the non-LILCO emergency response personnel. In particular, many LILCO emergency response personnel normally perform job functions unrelated to their assigned radiological emergency functions and lack the experience and training necessary to minimize this role conflict. Role conflict will cause significant numbers of emergency personnel to look to the needs of their families or others for which they have responsibility (including themselves) before they report (if at all) to their designated emergency response positions or otherwise respond to a request by LILCO for assistance. Moreover, this factor will be exacerbated by the fact that many emergency personnel will be asked to respond from a relatively safe area outside the EPZ to a more dangerous area within the EPZ. Thus, LILCO cannot demonstrate that sufficient personnel will be available to perform all response functions, as required by 10 CFR Section 50.47(a)(1).

SC Contention 114. There is no assurance that LILCO personnel can adequately perform the emergency functions and duties they are assigned under the LILCO Plan. The Plan calls upon LILCO personnel to perform emergency functions which, in most instances, are unrelated to their LILCO job functions.

For example, LILCO meter readers are to serve as traffic guides (OPIP 2.1.1, at 28), Customer Relations personnel are to serve as evacuation route spotters (id., at 32), and LILCO maintenance foremen and mechanics are to serve as radiological monitoring personnel (id., at 17). There is no assurance that the LILCO training will compensate for this lack of job-related experience, especially when the tasks to be performed may be accompanied by high levels of stress and fatigue involving life-threatening situations. Training alone cannot prepare people for the actual stress and trauma that accompany emergency conditions. Experience is also essential. (Thus, doctors and police officers, for example, are required to intern as residents and to serve as rookie police officers before their training is completed). Moreover, training that is not regularly applied or used will be ineffective. Thus, even if their initial training were adequate, LILCO's personnel will forget what was learned during that training. Rather than applying or using their emergency training, LILCO's personnel will be expected to perform their regular job functions. This will minimize any benefits gained through the emergency training, especially since that training is only repeated on an annual basis, and there are no incentives for LILCO's personnel to learn or to retain the emergency training provided to them.

Accordingly, LILCO cannot demonstrate that emergency functions and duties assigned to LILCO personnel under the Transition Plan will be implemented, as required by 10 CFR Section 50.47(a)(1).

SC Contention 115. Many of the LILCO personnel, including those in command/control and coordinating roles, are not residents of Suffolk County. Therefore, they lack a sense of the territorial imperative that is a principal motivating factor for emergency response personnel. Without proper motivation, training will not be effective. Thus, LILCO fails to demonstrate compliance with 10 CFR Sections 50.47(a)(1) and 50.47(b)(15), 10 CFR Part 50, Appendix E, Section IV.F and NUREG 0654, Section II.O.1.

SC Contention 116. Because many LILCO personnel are not area residents, they will not be familiar with the geography, topography, road network, demography, school and other facility locations, jurisdictional limits of emergency and volunteer organizations and their capabilities, and other local conditions in and around the EPZ. Moreover, they will not be aware of the internal workings of the communities within the EPZ. As a result, emergency personnel may be unable to deal promptly with, and make correct decisions concerning, unexpected situations or contingencies, as required by 10 CFR Section

50.47(a)(1), including: traffic accidents at key intersections; obstructions of evacuation routes; situations where persons refuse to evacuate because they fear that their homes/businesses will be unprotected; unavailability of relied upon emergency resources or personnel. Training alone can not serve as a substitute for experience and is even less effective when those expected to manage and coordinate the emergency response or implement that response in the field are unfamiliar with, and may not have a concerted interest in, the area of the emergency. Thus, LILCO cannot demonstrate compliance with 10 CFR Section 50.47(b)(15), 10 CFR Part 50, Appendix E, Section IV.F, and NUREG 0654, Section II.O.1.

SC Contention 117. There is no assurance that LILCO's training program will be consistent with the LILCO Plan/implementing procedures or that the training program will adequately reflect changed circumstances or conditions affecting implementation of the Plan. LILCO's commitment to review annually the training program content (OPIP 5.1.1, at 1) is inadequate and fails to take into account modifications which may be made to the Plan and deficiencies in the Plan that may be identified. Thus, LILCO cannot demonstrate compliance with 10 CFR Sections 50.47(b)(14) and 50.47(b)(15) and NUREG 0654, Section II.N.5.

SC Contention 118. Appendix E to 10 CFR Part 50 requires periodic retraining programs to be provided by the licensee. See 10 CFR Part 50, Appendix E, Section IV.F. While the LILCO Plan requires each LILCO emergency response worker to participate in an "annual requalification program" (OPIP 5.1.1, at 2), there is no corresponding requirement for non-LILCO emergency response personnel. Rather, as with initial training, non-LILCO personnel will be offered an opportunity to participate in LILCO's annual retraining/requalification program; participation, however, will be wholly voluntary. As a result, there is no assurance that non-LILCO personnel, even if trained initially, will remain adequately trained and ready to respond in a prompt and effective manner to an emergency at Shoreham, as required by 10 CFR Part 50, Appendix E, Section IV.F.

Preamble to SC Contentions 119-124. 10 CFR Section 50.47(b)(14) requires that "[p]eriodic exercises [be] conducted to evaluate major portions of emergency response capabilities, periodic drills [be] conducted to develop and maintain key skills, and [that] deficiencies identified as a result of exercises or drills [be] corrected." In addition, Section IV.F of Appendix E to 10 CFR Part 50 requires "the conduct of emergency preparedness exercises . . . [to] test the adequacy of timing and content of implementing procedures and methods, test emergency equipment and communication networks, test the public notification system, and ensure that emergency organization personnel are familiar with their duties." These exercises are to "simulate an emergency that results in offsite radiological releases which would require response by offsite authorities." NUREG 0654, Section II.N.1.a.

Suffolk County contends that the LILCO Plan provides no assurance that the drills and exercises contemplated by LILCO will satisfy these regulatory requirements. The specific deficiencies in the drills and exercises contemplated by LILCO are set forth in SC Contentions 119-124.

SC Contention 119. LILCO will be unable to require and has no agreements for participation by the personnel of support organizations in drills or exercises. As a result,

persons whose assistance and expertise may be needed in the event of a radiological emergency, and who are relied upon in the LILCO Plan, may not be adequately trained and there will be no assurance of the emergency preparedness required under the NRC's regulations. See 10 CFR Sections 50.47(a)(1) and 50.47(b)(15); 10 CFR Part 50, Appendix E.

SC Contention 120. The LILCO Plan fails to demonstrate that drills and exercises will adequately test the training of emergency response personnel so as to ensure that personnel are familiar with, and capable of performing, their duties under the Plan as required by 10 CFR Section 50.47(b)(14), 10 CFR Part 50, Appendix E, Section IV.F, and NUREG 0654, Section II.N.

SC Contention 121. Scenarios for the drills and exercises required by the Plan have not yet been developed by LILCO. Thus, there is no assurance that drill and exercise scenarios will adequately test emergency preparedness, as required by 10 CFR Section 50.47(b)(14), 10 CFR Part 50, Appendix E, Section IV.F, and NUREG 0654, Section II.N. Moreover, even if these drills and exercises arguendo were to test adequately the training and performance level of emergency response personnel, there is no assurance that training or performance deficiencies will be corrected. Exercises test, but

do not train, emergency personnel. Thus, retraining should immediately follow the critique of a drill or exercise so as to take into account any identified training deficiencies.

SC Contention 122. The LILCO Plan does not adequately specify the type and the frequency of drills. (See NUREG 0654, Section II.N.2). The Plan does not provide for quarterly testing of communications with Federal emergency response organizations or states within the ingestion pathway. NUREG 0654, Section II.N.2.a. Moreover, the Plan does not provide for testing whether the content of messages is understood by emergency response personnel. Id. See FEMA Report, at 13.

SC Contention 123. The LILCO Plan fails to describe how exercises and drills are to be carried out to allow "free play for decisionmaking." NUREG 0654, Section II.N.3. See FEMA Report, at 14.

SC Contention 124. The LILCO Plan fails to provide for "[o]fficial observers from Federal, State or local governments [to] observe, evaluate, and critique" training exercises. NUREG 0654, Section II.N.4. See FEMA Report, at 14. Nor does the Plan provide adequate means for evaluating observer and participant comments. NUREG 0654, Section II.N.5. See FEMA Report, at 14. Instead, under the LILCO Plan, post-exercise/drill critiques will be performed primarily by LILCO.

(Plan, at 5.2-3; OPIP 5.1.1, at 8 and 9). LILCO, however, will not be able to adequately critique its own Plan, including the exercises conducted under the Plan, due to its lack of expertise and objectivity. Thus, deficiencies in the LILCO Plan and implementing procedures may not be identified and corrected, in violation of NUREG 0654, Sections II.N.4 and N.5.

SC Contentions 125-132: Recovery and Reentry

Preamble to SC Contentions 125-132. The LILCO Plan proposes that short-term and long-term recovery and reentry operations will be performed by LILCO personnel following a radiological emergency at Shoreham (Plan, at 3.10-1 and 3.10-2; OPIP 3.10.1). For the reasons specified in SC Contentions 125-132, Suffolk County contends that contrary to the emergency planning standards of 10 CFR Section 50.47(b)(13) and NUREG 0654, Section II.M, the LILCO Plan fails to include general plans for recovery and reentry, including the development of necessary procedures and methods that are capable of being implemented.

SC Contention 125. LILCO states that "the initiation of Recovery and implementation of Reentry is a non-utility decision-making process" (OPIP 3.10.1, at 1). LILCO identifies no non-utility entity, with necessary authority, which has agreed to undertake the initiation of the recovery and reentry processes. Accordingly, under the LILCO Plan, with command and control functions assumed by LILCO, recovery and reentry cannot be initiated or implemented. Indeed, under New York law, LILCO does not have the authority to perform recovery and reentry functions. N.Y. Exec. Law § 20 et seq. (McKinney); N.Y. Penal Law § 190.25(3), 195.05 (McKinney). (See SC Contention 1).

SC Contention 126. The LILCO Plan states (at 3.10-1):

LERO personnel will continue to monitor the affected areas and when radiation levels are such that it is safe to enter the area, will inform the Director of Local Response [a LILCO employee]. The Director of Local Response will then appoint a Recovery Action Committee to develop a recovery plan for the restoration of the area to its pre-emergency condition.

(Emphasis added). The LILCO Plan thus merely states that a plan for recovery and reentry will be developed; at this time no such plan exists. This is contrary to the requirement of 10 CFR Section 50.47(b)(13) that "[g]eneral plans for recovery and reentry are developed." (Emphasis added).

SC Contention 127. Although the Plan asserts several general types of "Recovery and Reentry operations" (Plan, at 3.10-1 and 3.10-2), the Plan fails to identify the persons or organizations who will: determine when such operations are necessary or appropriate; determine if they are adequate; have the capability of performing the operations; provide the necessary equipment; or determine if they are performed properly. There is no provision in the Plan which identifies when, under what circumstances, how, or according to what criteria, the listed operations are to be performed. Indeed, the Plan does not state that any of the operations ever would or could actually

be performed. The list of operations contained in the Plan does not constitute a "plan" at all; it is merely a compilation of hypothetical actions. The Plan thus fails to comply with 10 CFR Section 50.47(b)(13), and NUREG 0654, Sections II.M.1 and II.M.2.

SC Contention 128. The Plan fails to identify, by name, title or qualification, the individuals from FEMA and DOE who are to be appointed to the Recovery Action Committee by the LILCO Director of LERO. (See OPIP 3.10.1, at Section 3.0.) Further, the Plan includes no agreement by FEMA or DOE to provide such personnel. It thus fails to comply with 10 CFR Sections 50.47(b)(1), 50.47(b)(3), and NUREG 0654, Sections A and C.

In addition, the LILCO and BNL employees who will be appointed to the Recovery Action Committee (see OPIP 3.10.1, at Section 5.1) are not authorized, qualified or capable of exercising the responsibilities which LILCO apparently expects them to fulfill (see OPIP 3.10.1, at Sections 5.2 and 5.3). Similarly, the LILCO employee who will serve as Health Services Coordinator (i.e., a Department or Division manager of LILCO's Environmental Engineering Department (OPIP 2.1.1 at 7)), is not authorized, qualified or capable of "recommending . . . , modifying, relaxing and discontinuing protective actions" as stated

in the Plan. (Plan, at 3.11-1). N.Y. Exec. Law § 20 et seq. (McKinney); N.Y. Penal Law § 190.25(3), 195.05 (McKinney). (See SC Contention 1). Accordingly, the purported recovery and reentry activities could not and would not be implemented.

Finally, the Plan fails to assign specific recovery and reentry responsibilities to particular members of the proposed Recovery Action Committee. Further, the Plan fails to document that any of the personnel or equipment required for recovery and reentry activities, designated in Sections 5.3.2, 5.3.3, and 5.3.4 of OPIP 3.10.1, will be available to LILCO. The Plan thus fails to comply with NUREG 0654, Sections II.M.2, A, and C, as well as with 10 CFR Sections 50.47(a)(1), 50.47(b)(1), 50.47(b)(3), and 50.47(b)(13).

SC Contention 129. OPIP 3.10.1 sets forth "Acceptable Surface Contamination Levels" in disintegrations per minute. The Plan does not include a method for converting such information into radiation doses to the public. The Plan also fails to state the dose criteria that will provide the basis for a determination that it is safe for the public to reenter previously evacuated areas, and thus fails to comply with 10 CFR Section 50.47(b)(13) and NUREG 0654, Sections II.I.10, and II.M.1.

SC Contention 130. The Plan fails to include radiological cleanup procedures to provide for the physical removal of radionuclides, stabilization of the radionuclides in place and environment management including consideration of the following particular factors:

- A. The type of surface contaminated;
 - B. The external environment to which the surface is exposed;
 - C. The applicability of weapons fallout data (particles from weapons fallout are typically 100 microns or more in diameter);
 - D. The possible radiological hazards to the decontamination operators;
 - E. The level of decontamination required;
 - F. The consequences of the decontamination operation;
- and,
- G. The costs involved.

In addition, the Plan fails to identify the anticipated decontamination factors ("DF"), and fails to cite or develop a technical basis for a DF. (The DF is a measure of decontamination effectiveness and is defined as the amount of contaminant per unit surface area before contamination, divided by the amount of contamination after decontamination.) The

Plan also fails to address the following external factors that affect the efficiency of decontamination operations:

- H. Wet and dry deposition;
- I. Major weather changes after deposition;
- J. Aging physical and chemical actions;
- K. Particulate matter size (aerosols expected to be released from a reactor core meltdown would be less than 10 microns in diameter);
- L. Contaminated surface characteristics;
- M. Operator or team skill, training and incentive.

Finally, the Plan fails to set forth the criteria or methods for decontamination of the various types of surfaces which could become contaminated including structures, paved areas, vehicles and equipment, land areas and soil, water, vegetation, animals, and humans. For these reasons, the Plan fails to comply with 10 CFR Sections 50.47(a)(1) and 50.47(b)(13).

SC Contention 131. The Plan fails to address the volumes and forms of radioactive waste that may result from decontamination operations or to provide a method for transportation of the radioactive waste, the routes for such waste transportation or the location of the ultimate waste repository. The Plan thus fails to comply with 10 CFR Sections 50.47(a)(1) and 50.47(b)(13).

SC Contention 132. The Plan fails to prescribe the criteria to be utilized for evaluating the costs of decontamination measures (including the cleanup of aquifers) as compared to the costs associated with the loss of use of property, including homes within Suffolk County, as well as the loss of income from agriculture, businesses, tourism and other income-producing activities. Such criteria are essential because the cost of decontamination is a fundamental aspect in determining the procedures and methods which form the basis for the recovery and reentry general plans. Further, the Plan fails to assign the responsibility for conducting and securing approval for such a cost analysis.

.In addition, the Plan fails to demonstrate that LILCO has the necessary financial resources to compensate Suffolk County residents for the costs incurred, and the income lost, as a result of being dislocated from their place of residence and/or employment. The Plan further fails to demonstrate that LILCO has the required financial resources to provide for the direct costs associated with the necessary recovery and reentry activities, including decontamination during the period until restoration of community life has been completed. The Plan thus fails to comply with 10 CFR Sections 50.47(a)(1) and 50.47(b)(13).

SC Contention 133: State Emergency Plan

There is no New York State emergency plan before this Board to deal with an emergency at the Shoreham plant. (See Plan, at Attachment 1.4.2). In addition, the LILCO Plan fails to provide for coordination of LILCO's emergency response with that of the State of New York (assuming, arguendo, such a response would be forthcoming). See FEMA Report at 1. In the absence of a State emergency plan for Shoreham, there can be no finding of compliance with 10 CFR Sections 50.47(a)(2), 50.47(b), or NUREG 0654, Section I.E, I.F, I.H or II.5/

5/ In LBP-83-22, at 60, the ASLB mentioned that contentions would be appropriate concerning lack of coordination between the LILCO plan and the State plan. As noted in this contention, however, there is no State Plan before the Board. Thus, there is in fact noncompliance with all the NUREG-0654 planning requirements which pertain to the State. The County has not alleged separate contentions as to each of these, it being considered sufficient to note merely the lack of any State plan.

SOC Contention 9 and Town of Southampton Contention 4:
Staffing

SOC Contention 9. A. 10 CFR Section 50.47(b)(1) requires that every emergency plan provide for adequate staffing of emergency response organization positions. The LILCO Plan violates this requirement because:

1. It provides for only a single Bus Coordinator, who must maintain contact with 290 bus drivers. OPIP 3.6.4, at 7 (item 9). In addition, the Bus Coordinator must stay in contact with staging area coordinators and bus company operators, among others. OPIP 3.6.4, at 2;

2. It provides for only a single Ambulance Coordinator, who must remain in continuous contact with 110 ambulance drivers. LILCO Plan Fig. 2.1.1, at 2;

3. It provides for only a single Home Coordinator, who must not only contact but carry on a conversation with someone in every household in the plume EPZ requiring evacuation assistance. The number of such households could run into the thousands.

B. NUREG 0654, Section II.A.2.a requires that the persons who will be filling emergency response organization staff positions be specified (by job title). The LILCO Plan violates this requirement because:

1. It designates only "LILCO Officers" to fill the position of Director of Local Response. OPIP 2.1.1, at 5;

2. It designates only "Representatives BNL" to fill the positions of Radiation Health Coordinator, Environmental Assessment Coordinator, Dose Assessment Staff Members, Environmental Survey Coordinator, and Survey Team Members. OPIP 2.1.1, at 8-23;

3. It designates only "Various LILCO personnel" to fill the positions of Road Crews, Route Alerting Drivers, and Bus Drivers. OPIP 2.1.1, at 30-42;

C. NUREG 0654, Section II.A.4 provides that emergency response organizations "shall be capable of continuous (24-hour) operations for a protracted period." The LILCO Plan violates this requirement by providing only one person to fill the position of Coordinator of Public Information. OPIP 2.1.1, at 58. At least three individuals must be assigned for every LERO staff position, because of the need for replacement of staff, and because a high percentage of people will inevitably be unavailable for a given emergency, due to sickness, vacation, etc.

Town of Southampton Contention 4. 10 CFR Section 50.47(b)(1) requires the applicant to show that it "has staff to respond to and to augment its initial response on a continuous basis." LILCO assumes that local police will provide security during the course of an evacuation, and that all local enforcement agencies and fire departments within the 10 mile EPZ will continue to carry out their normal response functions. (p. 2.2-4). However, there is clearly no assurance of assistance from Suffolk County police, nor is there any assurance of assistance from other local police forces. As a result, there may be serious looting in the evacuated neighborhoods and ineffective traffic and perimeter control both within and beyond the 10 mile EPZ.

Moreover, as to all such services,

A) Some local officials will decline to implement any plan which is not the plan of the local government (i.e., Suffolk County);

B) As revealed by an actual survey by Suffolk County, many individuals will not respond as planned in a radiological emergency; and

C) Local law enforcement officers and firefighters will first attend to the safety of their families before responding to duty, thus delaying their response time.

Therefore, the plan does not satisfy the requirements of
10 CFR Section 50.47.

SOC Contentions 10-13: Loss of Offsite Power

Preamble to SOC Contentions 10-13. The LILCO Plan must provide an adequate response for even "the worst possible accident, regardless of its extremely low likelihood." NUREG 0654, Section I.D. at 7. This includes a loss of offsite power, which would not be an unlikely consequence of a severe accident at Shoreham. The LILCO Plan, however, contains no measures for dealing with such a circumstance, and thus does not provide for the protection of the public health and safety.

SOC Contention 10: Inadequate Facilities. 10 CFR Section 50.47(b)(8) requires the emergency response organization to establish "adequate facilities" to maintain the emergency response. See also NUREG 0654, Section II.H. The LILCO Plan fails to satisfy this requirement by failing to allow for the possibility of a loss of offsite power. Specifically:

1. The LILCO Plan does not indicate that the EOC has a backup power supply nor does it provide for the management of the emergency response from another location. In the event of a loss of offsite power the EOC would become inoperable and LERO would become unable to implement an emergency response.

2. The LILCO Plan does not indicate that backup power supplies have been established for staging areas, bus transfer points, receiving hospitals, or relocation centers. In the

event of a loss of offsite power, these facilities would become inoperable.

SOC Contention 11: Notification of LERO Personnel.

10 CFR Section 50.47(b)(5) and NUREG 0654, Section II.E.2 require that emergency plans provide for the prompt notification of response personnel. See also 10 CFR Part 50 Appendix E, Sections 4C and D. Notification channels must remain open on a 24-hour basis. NUREG 0654, Sections II.F.1.a. The LILCO Plan violates this requirement by not allowing for the possibility of a loss of offsite power. Specifically:

1. The LILCO Plan does not indicate that the LILCO Customer Service Office has a backup power supply. In the event of a loss of offsite power, the LILCO Customer Service Office will become inoperable. Thus, the SNPS Control Room will be unable to notify LERO and initiate the emergency response process. See LILCO Plan at Section 3.3.

2. The LILCO Plan does not indicate that the EOC has a backup power supply. In the event of a loss of offsite power, the EOC will become inoperable, and LERO will be unable to notify emergency personnel in the field.

SOC Contention 12: Notification of the Public. 10

CFR Section 50.47(b)(5) requires every emergency plan to provide for early notification and clear instruction to those

within the plume EPZ. These requirements are distinct: the public must be given an early alert signal and a follow-up instructional message. See NUREG 0654, Appendix 3, Section B(2)(a). The LILCO Plan violates these requirements by failing to take account of the possibility of a loss of offsite power. Specifically:

1. LILCO relies on a system of sirens for providing an immediate alert to the public. See LILCO Plan at 3.3-4; OPIP 3.3.4. However, the LILCO Plan does not indicate that the sirens have a backup power supply. Therefore, in the event of a loss of offsite power, the sirens will not function.

2. LILCO relies on the transmission of emergency broadcast messages by radio station WALK as the "primary direct communications link to the public after activation of the sirens." LILCO Plan at 3.3-6. But the LILCO Plan does not indicate that WALK has a backup power supply. Therefore, in the event of a loss of offsite power, WALK would cease transmissions.

The LILCO Plan suggests that there is a "backup" system involving CBS radio in New York City. See LILCO Plan at 3.3-7. But this system evidently depends on the transmission capabilities of Long Island radio stations which, like WALK, will become inoperable in the event of a loss of offsite power.

3. The LILCO Plan does not indicate that radio station WALK has a backup power supply, or that any other broadcasting facility has the capability to transmit the emergency broadcast signal used to activate the tone alert radios which will allegedly be provided to hundreds of facilities within the plume EPZ. See LILCO Plan at 3.3 pp. 6-7. In the event of a loss of offsite power, WALK would cease transmissions and would be unable to activate the tone alert radios.

4. LILCO relies on tone alert radios to provide the extra evacuation time required by large facilities such as factories and schools. See LILCO Plan at 3.3-4,5. The tone alert radios will evidently operate on AC power rather than on batteries. Therefore, in the event of a loss of offsite power, the tone alert radios would not function.

5. Emergency plans must provide formal means for dissemination of information to the public through the news media. See NUREG 0654, Section II.G.3 and 10 CFR Section 50.47(b)(7). LILCO relies on the establishment of an Emergency News Center to satisfy this requirement. See OPIP 3.8.1. However, the LILCO Plan does not indicate that the Emergency News Center has a backup power supply or that a backup news facility has been established. Therefore, in the event of a loss of offsite power, the Emergency News Center will become inoperable and LILCO's public notification duties will not be satisfied.

SOC Contention 13: Implementation of Protective

Actions. 10 CFR Section 50.47(b)(10) requires each emergency plan to provide for protective actions which protect the public health and safety in the event of an accident. NUREG 0654, Section II.J.9 requires a demonstration that the protective actions within a plan are capable of being implemented. The LILCO Plan does not satisfy these requirements because it fails to take account of the possibility of a loss of offsite power. Specifically:

1. Assuming that an evacuation of the plume EPZ were determined to be the appropriate protective action, the LILCO Plan relies heavily on the services of private firms such as ambulance services, LILCO Plan at 3.7-1, bus companies, OPIP 3.6.4 at 2, and lumber companies, Appendix A at IV-186. However, in the event of a loss of offsite power these firms and facilities would become inoperable and close. LERO would thus become unable to utilize those services.

2. Assuming that an evacuation of the plume EPZ were determined to be the appropriate protective action, LERO would be responsible for evacuating scores of hospitals, nursing homes, and facilities for the handicapped. However, the LILCO Plan does not indicate that these facilities have backup power supplies. In the event of a loss of offsite power, evacuation

of these facilities would be either impossible or far more difficult and time-consuming than indicated in the LILCO Plan.

Without functioning elevators, non-ambulatory persons could be moved only with extreme difficulty, if at all. Without lighting, nighttime evacuation of these facilities would be all but impossible. Without functioning medical equipment, management would attempt some form of limited evacuation on its own. In any case, this potential circumstance is not taken into account in the LILCO Plan.

3. Assuming that evacuation of the plume EPZ were determined to be the appropriate protective action, the successful implementation of such an action would depend on the functioning of systems and facilities that would in fact be inoperable in the absence of offsite power. These include: residential lighting, public streetlights, traffic signals, and service stations. The LILCO Plan does not indicate that any of these facilities and systems have backup power supplies. Therefore, in the event of a loss of offsite power, the Plan would not provide for the protection of the public health and safety.

SOC Contention 14: Bad Weather

SOC contends that the LILCO Plan is inadequate because it fails to take account of the possibility that a severe accident at Shoreham might occur in tandem with severe adverse weather, i.e., heavy snow. This deficiency violates the applicable standards in several respects.

A. Notification of the Public

Prompt notification of the public is mandated by 10 CFR Section 50.47(b)(6) and NUREG 0654, Sections II.E.6 and II.J.10. The means specified by the LILCO Plan for immediate public notification are the siren system and, as a backup, route alerting. In the event of a heavy snowfall, however, neither of these means will work. Heavy snow may damage commercial telephone lines and prevent communications, via pagers, with those LERO personnel responsible for activating the siren and emergency broadcast systems. Even if these persons were contacted, they would be unable to travel to the EOC, and from there to initiate the siren and emergency broadcast systems. Moreover, during a heavy snowfall, the route alerting system would not constitute a reliable backup to the siren system because route alert drivers would not receive notification of the emergency (due to the inoperability of the EOC), would not be able to reach the staging areas (because of

impassable roads), or (for the same reason) would not be able to travel from the staging areas along the designated alert routes.

B. Protective Actions

Pursuant to 10 CFR Section 50.47(b)(10) the LILCO Plan must designate a range of protective actions appropriate to a variety of circumstances. See also NUREG 0654, Section II.J.9. This includes unfavorable weather. Yet the LILCO Plan's procedures for evacuation completely disregard the possibility of the existence of deep snow. SOC contends that the evacuation procedures outlined in the LILCO Plan would not work during a heavy snowfall, for the following reasons:

1. Key LERO personnel would be unable to travel to the EOC, as required by the LILCO Plan at 3.3;

2. Neither traffic guides, road crews, evacuation route spotters, ambulance drivers nor staging area coordinators would be able to travel to the staging areas, as required by OPIP 3.3.3 at 2 and 3.6.3 at 5, 6;

3. Even if the persons listed in (2) above were to reach the staging areas, they would be unable to travel to their assigned posts/routes, as required by OPIP 3.6.3;

4. Bus drivers and shuttle operators would be unable to travel to staging areas, as required by OPIP 3.6.4 at 4 and, in any case, would be unable to complete their assigned trips;

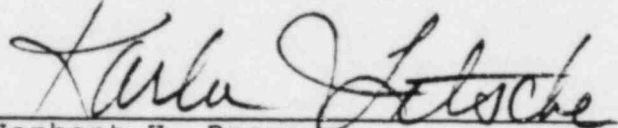
5. Relocation center staff would be unable to travel to the relocation centers; and

6. Members of the public would be unable to evacuate their homes or places of work.

Respectfully submitted,

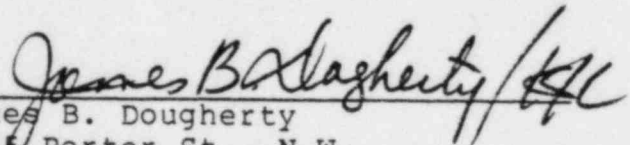
Dated: July 7, 1983
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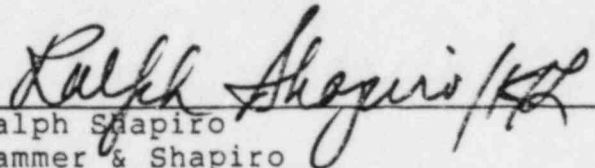
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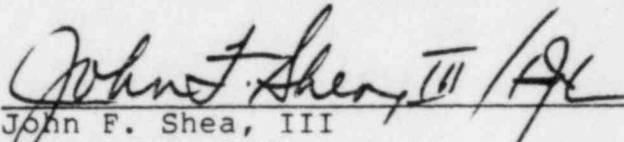
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Before the Atomic Safety and Licensing Board

Docket No. 50-322
(Emergency Planning)

CERTIFICATE OF SERVICE

I hereby certify that copies of the Consolidated Emergency Planning Contentions of Suffolk County, the Shoreham Opponents Coalition, the North Shore Committee Against Thermal and Nuclear Pollution, and the Town of Southamptton were served this 7th day of July, 1983, by first-class mail, postage prepaid, unless otherwise indicated.

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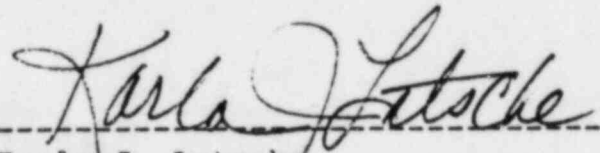
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- * By hand.
 - ** By Federal Express on July 7, 1983.
 - *** By Federal Express on July 6, 1983.