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-OL-5R (EP Exercise)
(Shoreham Nuclear Power Station, Unit 1)	

Amended Emergency Planning Contentions Relating to the June 7-9, 1988 Shoreham Exercise

November 29, 1988

Filed by: Suffolk County,
The State of New York, and
The Town of Southampton

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-OL-5R (EP Exercise)
(Shoreham Nuclear Power Station, Unit 1)	)	

Amended Emergency Planning Contentions Relating to the June 7-9, 1988 Shoreham Exercise

November 29, 1988

Filed by: Suffolk County,
The State of New York, and
The Town of Southampton

Amended Emergency Planning Contentions Relating To the June 7-9, 1988 Shoreham Exercise

TABLE OF CONTENTS

AMENDED EMERGENCY PLANNING CONTENTIONS RELATING TO THE JUNE 7-9, 1988 SHOREHAM EXERCISE

INTRODUCTION

On February 13, 1986, LILCO held the first exercise of its offsite radiological emergency plan (the "Plan") for Shoreham. As this Board concluded in LBP-87-32, 26 NRC 479 (1987), aff'd, ALAB-900, 28 NRC ___ (Sept. 20, 1988), and LBP-88-2, 27 NRC 85 (1988), ~~appeal pending~~, rev'd in part, ALAB-903, 28 NRC ___ (Nov. 10, 1988), remainder of appeal pending, the results of that exercise revealed that LILCO's Plan was fundamentally flawed in numerous respects. The Board also found that the exercise itself was flawed in that it was insufficient in scope and failed to test adequately several crucial aspects of LILCO's Plan.

On June 7-9, 1988, LILCO held a three-day exercise[1/] (the "Exercise") in its second attempt to meet the NRC's exercise requirements. Suffolk County, the State of New York and the Town of Southampton (the "Governments") hereby submit their contentions concerning the Exercise. As the contentions demonstrate, the Exercise results again reveal fundamental flaws

---

1/ The Exercise scenario postulated two leaps in time, so that the third day of the Exercise was postulated to be, at first, the fourth day of the simulated emergency, and later, the twentieth day of the emergency. FEMA Post-Exercise Assessment, June 7-9, 1988 Exercise of the Local Emergency Response Organization (LERO), as specified in the LILCO Off-Site Radiological Emergency Response Plan for Shoreham Nuclear Power Station, Sept. 2, 1988 ("FEMA Report") at 25-26. In order to avoid the confusion that might arise by using actual dates, the following contentions refer to June 7 as Day 1; June 8 as Day 2; and June 9 (June 10 and June 27 in the simulated emergency) as Day 3.

in LILCO's Plan and in the Exercise itself. For example, LILCO has once again failed to demonstrate that its Plan meets the objectives by which FEMA evaluated the Exercise, or that LILCO has met the NRC's regulatory requirements. In many instances, LILCO has failed to correct the fundamental flaws that were found to exist as a result of the February 1986 exercise. The Exercise also revealed several additional fundamental flaws in LILCO's Plan. Moreover, analysis of the scope of the Exercise reveals that, once again, LILCO has failed to test and/or FEMA has failed to evaluate many crucial aspects of the Plan, thus resulting in non-compliance with 10 CFR Part 50, Appendix E, § IV.F.1.

In light of the fundamental flaws which exist in the Plan, and in light of the continued failure to test that Plan thoroughly, there can be no finding of compliance with regulatory requirements and no finding of reasonable assurance that adequate protective measures can and will be implemented in the event of a radiological emergency at Shoreham. See 10 CFR § 50.47(a)(1). Thus, there is no basis to grant LILCO a license to operate Shoreham above five percent of rated power.

The Board should note that most of the contentions below are followed by a listing of a number of bases for those contentions. The bases are not individual contentions, but rather must be read as part of the whole contention. In addition, the bases cited should not be construed as exhaustive of all evidence potentially supporting each contention. It has been difficult to identify,

in advance of discovery, all potential bases for various contentions, particularly because of the difficulty in determining what actually occurred (e.g., separating actual testing/involvement from simulation) during the Exercise. The Governments expect that as discovery proceeds, additional bases will be identified and the facts supporting existing bases will become better refined.

Finally, the contentions have been revised (from those originally submitted on October 24, 1988) to reflect ALAB-903. To assist in review, deleted portions of the original contentions have been left in this version, with a line drawn through them; new portions are indicated by double underlining.

CONTENTIONS

I. Contentions 1-3: The Scope of the Exercise, the Assumptions Underlying It, and FEMA's Evaluation Were Deficient

Contention 1: Scope of the Exercise. The Exercise did not comply with applicable regulatory requirements, including 10 CFR §§ 50.47(a)(1) and (b)(14), and 10 CFR Part 50, Appendix E, § IV.F (particularly § IV.F.1 thereof), in that critical elements of preparedness were omitted from or insufficiently tested during the Exercise. Appendix E, § IV.F.1, provides in relevant part:

> A full participation exercise*/ which tests as much of the licensee, State and local emergency plans as is reasonably achievable without mandatory public participation shall be conducted for each site . . . . This exercise shall . . . . include participation by each State and local government within the plume

exposure pathway EPZ and each State within the ingestion exposure pathway EPZ. . . .

---

*/ 'Full participation' when used in conjunction with emergency preparedness exercises for a particular site means appropriate offsite local and State authorities and licensee personnel physically and actively take part in testing their integrated capability to adequately assess and respond to an accident at a commercial nuclear power plant. 'Full participation' includes testing the major observable portions of the onsite and offsite emergency plans and mobilization of State, local and licensee personnel and other resources in sufficient numbers to verify the capability to respond to the accident scenario. (Emphasis added.)

Appendix E, § IV.F, also provides:

> Exercises shall test the adequacy of timing and content of implementing procedures and methods, test emergency equipment and communications networks, test the public notification system, and ensure that emergency organization personnel are familiar with their duties.

(Footnote omitted).

Notwithstanding these regulatory requirements, the Exercise omitted in whole or in part major observable portions of LILCO's Plan; there was a failure in whole or in part to verify various response capabilities, a failure to test as much of the Plan as was reasonably achievable without mandatory public participation, a failure to test much of the public notification system, a failure to test much of the LERO communications network, a failure to test the timing and content of many implementing procedures and methods, and a failure to ensure that emergency organization personnel were familiar with their duties.

Accordingly, the Exercise results are insufficient to support a finding of reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at Shoreham, as required by 10 CFR § 50.47(a)(1), or a finding that the Exercise complied with regulatory requirements for licensing Shoreham above 5% power. Such deficiencies in the scope of the Exercise are all the more significant given the fact that similar deficiencies were cited in LBP-87-32, ALAB-900, and the Appeal Board's unpublished Memorandum dated May 25, 1988.

The Exercise elements which currently can be identified as having been omitted, untested or unverified, in whole or in part, and which require a ruling that the Exercise failed to comply with regulatory requirements are as follows:

A. The LILCO public notification system was insufficiently tested. There was no adequate testing or evaluation of LILCO's siren system and no test broadcast of an emergency broadcast system ("EBS") message. Furthermore, there was no test of the EBS radio network upon which LILCO places prime reliance in its Plan. The radio station which is reported to have participated to a limited extent in the Exercise -- WPLR -- had, prior to the Exercise, withdrawn from LILCO's EBS and thus, whatever "testing" occurred with respect to WPLR was not pertinent to LILCO's Plan. The EBS network, including LILCO's purported lead EBS station -- WCBS -- and that station's personnel, as described and relied upon in Revision 10 of LILCO's Plan (OPIP 3.8.2 at 1), was not tested during the Exercise, despite the fact that 10 CFR Part

50, Appendix E, § IV.F, states specifically that "[e]xercises shall . . . . test the public notification system, and ensure that emergency organization personnel are familiar with their duties." These omissions resulted in the failure to test the integrated response capabilities of LERO with the LILCO EBS network, the omission of a major observable portion of LILCO's Plan, and the failure to test as much of the Plan as was reasonably achievable without mandatory public participation.

B. LILCO's Plan for school preparedness was inadequately tested. Only one school district -- the Shoreham-Wading River Central School District -- participated at all in the Exercise, and that participation was extremely limited. In fact, only one elementary school, Briarcliff Road School, with a total school enrollment of 170 students, participated and this participation was limited to the arrival of three LERO buses on the school grounds, and the interview of one school official. There are, however, eight other school districts and 23 private and parochial schools, with approximately 26,302 students, within the 10-mile Shoreham EPZ. These schools did not participate in the Exercise and were not even contacted by LILCO or FEMA during the Exercise. Similarly, personnel from these schools did not participate, and thus there was no testing or evaluation of their response capabilities. Accordingly, there was no testing or verification of the capability to early dismiss, shelter, or evacuate school children. In short, there was no testing of a major observable portion of LILCO's Plan, and LILCO failed to

test as much of its Plan as was reasonably achievable without mandatory public participation. In LBP-87-32, 26 NRC at 495-98, this Board found that there was insufficient testing of school preparedness. That finding was recently affirmed by the Appeal Board. ALAB-900, slip op. at 33-35. The facts demonstrate that, once again, there was inadequate testing of school preparedness. See FEMA Guidance Memorandum ("GM") EV-2.

C. LILCO's Plan also has provisions concerning schools located outside the EPZ attended by students who reside within the EPZ. For example, the Plan provides that, in the event of a Shoreham emergency, schools located outside the EPZ should retain students residing within the EPZ at the end of the school day. OPIP 3.6.1 at 31a. During the Exercise, there was a need for these Plan provisions to be implemented and, indeed, there even was an EBS message (EBS No. 7) which purported to address this situation. Nevertheless, LILCO did not attempt to contact any of these schools either before or during the Exercise and none of these schools or their personnel participated in the Exercise. Accordingly, there was no testing of the ability of these schools or LERO to implement these Plan provisions, there was no testing of a major observable portion of LILCO's Plan, and LILCO failed to test as much of its Plan as was reasonably achievable without mandatory public participation.

D. LILCO's Plan calls for school children from the EPZ to be evacuated to relocation centers at the Nassau County Coliseum and the Nassau County Community College. Plan at 4.2-1. In

fact, during the Exercise, LILCO pretended that there was such an evacuation. Further, LILCO also pretended that many of the children attending school outside the EPZ but who reside within the EPZ were relocated late on Day 1 to those Nassau County facilities. Nevertheless, those critical facilities were not activated, staffed, tested, or evaluated during the Exercise. This is another example of a failure to test integrated response capabilities, the omission of a major observable portion of LILCO's Plan, and the failure to test as much of LILCO's Plan as was reasonably achievable without mandatory public participation.

E. LILCO's plan for school evacuation, under which LILCO-employed drivers are responsible for evacuating all or portions of the EPZ school children, was inadequately tested during the Exercise. See, e.g., FEMA GM EV-2. For example, only one school participated with LILCO, even though LILCO's school plan requires there to be close integration of LERO and school personnel; only three actual LERO buses arrived at the Briarcliff Elementary school; there was no demonstration during the Exercise of how school children and other bus passengers would be directed after disembarking buses (FEMA Report at 113); and only 30 LERO school bus drivers (out of 613) actually were dispatched to a bus yard (and this "demonstration" was problem-ridden, since some bus yards did not even have the LERO boxes containing driver assignment packets). Thus, these drivers could not be dispatched and there could be no "test" of their response capabilities. Further, there was no demonstration of how buses coming from

potentially contaminated zones would be directed upon arriving at relocation or reception centers, or how potentially contaminated school children would be monitored and decontaminated if necessary. There was also no demonstration of how LILCO would provide adult supervision on evacuating the school buses.

F. LILCO's Plan for evacuation of special facility residents (adult homes, nursing homes, and hospitals) was inadequately tested during the Exercise. There are 39 such facilities within the Shoreham EPZ, ordinarily housing approximately 2,697 residents. OPIP 3.6.5, Att. 2. The LILCO Plan provides that at the time of a General Emergency, assuming the issuance of an evacuation protective action recommendation, LERO would dispatch ambulances and ambulettes to many of these health care facilities within affected zones to transport residents to reception hospitals or other appropriate facilities. OPIP 3.6.5. During the Exercise, however, none of these facilities participated in the Exercise; indeed, none of these facilities was so much as contacted by LILCO or FEMA during the Exercise.

In addition, the purported demonstration of transportation capabilities -- i.e., the use of ambulances and ambulettes or mini-buses to effect evacuation -- provided no meaningful data. Only 13 such vehicles (six ambulances and seven ambulettes) reportedly participated in the Exercise, and only a portion of these vehicles participated in any demonstration of the implementation of protective actions for special facilities.

Further, there was no meaningful interaction between LILCO and the ambulance companies relied upon by LILCO, between those ambulance companies and the special facilities to which they were supposed to report, or between those ambulance companies and the special facilities outside the EPZ to which the ambulance companies were supposed to pretend to evacuate residents and personnel. The Licensing Board and the Appeal Board faulted LILCO for failing to demonstrate such interaction in the 1986 exercise. ALAB-900, slip. op. at 40; LBP-87-32, 26 NRC at 500-01. LILCO's failure to do so again in 1988 reflects a continued failure to satisfy 10 CFR Part 50, Appendix E, § IV.F.1.

G. LILCO failed to test its capability to implement evacuation of the homebound disabled population residing within the EPZ. The LILCO Plan provides that at the time of a General Emergency, the homebound disabled are to be transported via ambulance or ambulette to reception hospitals. OPIP 3.6.5. To demonstrate this, LERO is reported to have dispatched one ambulance to Zone C and one ambulance to Zone B to simulate the evacuation of the homebound disabled. No actual person was transported, however. Moreover, the dispatch of only two vehicles failed to demonstrate any actual capability to evacuate this segment of the EPZ population. Thus, the testing was far too limited to comply with Appendix E requirements. See ALAB-900, slip op. at 40-43.

H. The LILCO Plan relies on numerous hospitals, nursing homes, and similar facilities outside the EPZ for relocation services and necessary health care for special facility evacuees. These reception hospitals are to be selected at the time of the emergency. OPIP 3.6.5, Atts. 5 and 16. Those facilities, however, did not participate in the Exercise and LERO demonstrated no capability to implement such selection. Further, the LILCO Plan fails to include agreements for such facilities. The omission of these facilities from the Exercise constitutes non-compliance with Appendix E.

I. Only one ambulance was dispatched to test LILCO's ability to transport injured and contaminated victims. (Again, no "victim" was actually transported.) And, only one radiation safety officer was present during LILCO's medical drills designed to demonstrate LILCO's ability to care for injured contaminated victims. FEMA Report at 99. As a result, the test of these portions of LILCO's Plan (OPIP 4.2.2) was too limited to comply with Appendix E.

J. The LILCO Plan calls for the use of congregate care centers for evacuees from a Shoreham emergency. These centers are to be staffed by the American Red Cross. Plan at 2.2-9. During the 1986 exercise, two centers were activated, and the American Red Cross participated. During the 1988 Exercise, however, no congregate care centers were activated, no Red Cross personnel participated, and no testing of procedures or

communications was effected. FEMA Report at 11. These omissions demonstrate non-compliance with Appendix E.

K. Procedures for public education and the dissemination of information to the public on a periodic basis, as set forth in OPIP 3.8.1 of the LILCO Plan, and a demonstration of the adequacy of public education materials, were omitted from the Exercise. Nevertheless, LERO EBS messages continually referred to these materials. These omissions demonstrate non-compliance with Appendix E. The omissions are of even greater concern in light of the fact that on June 16, 1988, only shortly after the Exercise, LILCO's draft public education brochure was determined by FEMA to be of questionable utility and effectiveness.

L. The LILCO Plan provides that special population evacuees are to be transported to LILCO's Brentwood facility for monitoring or to the reception facility's nuclear medicine or radiology department or to LERO staging areas. See OPIP 3.6.5 at 5, 5a, 9 and 12. Procedures related to the radiological monitoring and decontamination of evacuees from special facilities were excluded from the Exercise, despite the fact that the Exercise scenario created a need for these functions to be performed. These omissions demonstrate non-compliance with Appendix E.

M. LILCO's Plan relies upon the participation of other entities, including the Long Island Railroad, the FAA, the U.S. Department of Agriculture, and the U.S. Department of Commerce. Plan at 2.2-1 thru 2.2-10. None of these entities participated

in the Exercise, despite the fact that the Exercise scenario called for interaction with these entities. FEMA Report at vii, 10. These omissions are further evidence of the failure to comply with Appendix E.

N. The Exercise scenario resulted in radiation releases of sufficient severity to require protective action recommendations ("PARS") in the ingestion exposure pathway EPZ, including portions of southern Connecticut. Despite this fact, there was no testing of the capability to implement ingestion pathway protective actions in the Connecticut portion of the ingestion pathway EPZ. This failure was contrary to the requirements of Appendix E. See ALAB-900, slip op. at 8; LBP-87-32, 26 NRC at 498-99.

O. Although LILCO relies upon some 42 bus companies for implementation of the protective action of evacuation of the general, school and special populations (OPIP 3.6.5, Att. 3a), an insufficient number of these companies participated in the Exercise to demonstrate the ability to implement evacuation, and there was no testing of non-participating companies to determine their availability.

P. The LILCO Plan relies upon local ambulance companies to provide ambulances to evacuate special facilities, such as hospitals and nursing homes. However, only a few of the many companies relied upon by LILCO participated in the Exercise, and there was no testing of non-participating companies to determine their availability. In addition, participation of those

ambulance companies taking part in the Exercise was limited to providing 13 vehicles (7 ambulances and 6 ambulettes). The LILCO Plan provides that ambulance companies will provide 193 vehicles. OPIP 3.6.5, Att. 6. The provision of 13 vehicles does not demonstrate the capability to mobilize 193 ambulances and ambulettes.

Q. The Exercise failed to test sufficiently the communications network described in LILCO's Plan. The LILCO Plan calls for communications between LERO and: schools inside and outside the EPZ; school reception centers; hospitals inside and outside the EPZ; adult and nursing homes inside and outside the EPZ; LERC's lead EBS station; other radio stations; congregate care centers; the American Red Cross; the Long Island Railroad; the FAA; other federal government entities; and other organizations. See Plan, Fig. 3.4.1. These many aspects of the LILCO/LERO communications network were omitted in whole or in substantial part from the Exercise.

Contention 2: The Exercise's False Premises and Assumptions. The Exercise was premised on the concept that in an emergency, LERO personnel would interact with personnel from various governments (Suffolk County, New York State, Nassau County, State of Connecticut) in particular ways, including approving EBS messages, authorizing LERO personnel to take various actions (like sounding sirens, broadcasting EBS messages, setting up traffic control points), and even delegating to LERO

the permission and/or authority necessary for the implementation of various aspects of LILCO's Plan. FEMA also assumed that various resources of the governments would be provided at various times during the Exercise (such as New York State ingestion pathway teams). However, neither the FEMA Report, FEMA control cell documents, nor any other materials relating to the Exercise provide a factual basis for FEMA's assumptions. Indeed, some of those assumptions (such as authorizing LERO to direct traffic) involve actions which would be illegal for the governments to authorize, and which the affected governments have stated clearly would never occur. The LILCO Plan discusses LERO's ability to interface with affected governments. See Plan at 1.4-2 thru 1.4-2c; OPIP 3.1.1, Att. 10. Such interface capabilities are required by NUREG-0654, Rev. 1, Supp. 1, § II.A.1.b. A "test" of such interface capabilities could only be valid and probative if the actions and conduct assumed on behalf of the affected governments have a basis in reality. As FEMA's assumptions have no such basis -- and indeed frequently are contradicted by law and fact -- the Exercise results provide no basis for a finding that LILCO could interface properly with government personnel.

Contention 3: The FEMA Report's Unfounded Conclusions. FEMA has concluded that the Exercise results permit FEMA to make a reasonable assurance finding. See 10 CFR § 50.47(a)(2). In light of the many fundamental flaws in LILCO's Plan revealed by the Exercise, which are explained in greater detail in the

contentions below, this conclusion is groundless and should be given no weight by the Board. In particular, FEMA has overlooked, or ignored, many serious problems experienced by LILCO in its attempts to implement its Plan, and has inappropriately minimized the significance of the problems that were identified.

FEMA was aware, or should have been aware, of virtually every problem set forth in the contentions below. A fair, balanced assessment by FEMA would therefore have resulted in a finding that fundamental flaws continue to exist in LILCO's Plan. Instead, however, FEMA chose to ignore LILCO's inability to implement its Plan, as demonstrated during the Exercise. This conclusion is strongly supported by scrutiny of the FEMA Report, as well as the FEMA control cell logs completed by FEMA evaluators during the Exercise. Those logs reveal that FEMA was well aware of the deficiencies that were demonstrated during the Exercise, but chose to downplay those portions of the Exercise which would not support a reasonable assurance finding. In addition, FEMA chose to ignore serious limitations on the scope of the Exercise.

Discovery and further proceedings will likely reveal many more instances of FEMA's failure to accord observed problem areas the weight they deserve. Yet, even a preliminary listing of some problems minimized by FEMA makes clear that FEMA's Report and any FEMA reasonable assurance finding are entitled to no weight. The following list, combined with the numerous other

examples set forth in the contentions below, are indicative of FEMA's noncritical approach to its assessment of the LILCO Exercise.

A. LILCO failed to develop and issue prompt ingestion PARs. Even FEMA agrees that ingestion pathway PARs "were very slow to be developed." FEMA Report at 51. In actuality, the delay in issuing ingestion pathway PARs was over 24 hours. Although LILCO had sufficient scenario information available on the morning of Day 2 of the Exercise (and, indeed, even sooner; see Contention 11) to issue PARs for the 10-50 mile ingestion pathway area, such PARs were not conveyed to the public until 12:50 p.m. on Day 3. The ability to promptly advise the public of PARs is of critical importance to public health and safety. LILCO's failure to do so should have resulted in a finding that the LILCO Plan is flawed, thus precluding any finding of reasonable assurance. Instead, FEMA concluded that, as a result of LILCO's delay, EOC Objective 29 and BHO Objective 29 were "partially met." FEMA Report at 51. There was no justification for this FEMA conclusion.

B. The Exercise results demonstrated that FEMA's EBS messages were woefully inadequate. See Contention 6. Many were so poorly constructed as to be ineffective. See FEMA Report at 45; Contention 6. Others contained incorrect data about the nature of the release for extended periods of time. See FEMA Report at 45; Contention 6. Similar problems, when revealed

during the 1986 Shoreham exercise, were found by the Board in LBP-88-2 to constitute a fundamental flaw in LILCO's Plan. 27 NRC at 170-172. LILCO experienced the same kinds of problems during the 1988 Exercise, mandating the conclusion that LILCO's Plan continues to be fundamentally flawed. Indeed, if EBS messages are so ineffective that some listeners will not stay tuned (FEMA Report at 45), it is clear that the public will not be protected. But, consistent with its uncritical approach to the 1988 Exercise, FEMA found "reasonable assurance" -- even in the face of these obvious problems. Under such circumstances, this FEMA finding is entitled to no weight.

C. FEMA also ignored LILCO's failed attempt to demonstrate its alert and notification capability. Fifty-seven of the 89 LILCO sirens failed to sound as planned during the Exercise. See Contention 5. This notification failure has serious implications for safety. It is clear that LILCO intended to test its sirens during the Exercise, and that this intention was known to and agreed upon by FEMA. Yet, long after the sirens failed to sound, FEMA pretended that this failure had never occurred and even found that the notification objective (EOC Objective 12) was met. There was, and is, no basis for such a conclusion.

D. A review of the FEMA control cell logs reveals that FEMA evaluators present in the control cell during the Exercise documented many problems occurring during the course of the Exercise, particularly in the area of LILCO's demonstration of

the capability to interface with the government "officials" simulated by FEMA. See Contention 4. Yet, the FEMA Report is devoid even of hints of such problems. See FEMA Report at 49, 55 (finding interface objectives to be met).

E. FEMA failed to give appropriate weight to recurrent problems. FEMA's own guidance counsels that ARCAs that reoccur in subsequent exercises may appropriately be reclassified as a Deficiency. FEMA Report at 10. Although at least five ARCAs from 1986 occurred again in the 1988 Exercise (FEMA Report at 107-110), FEMA did not reclassify those ARCAs as Deficiencies or even so much as discuss the possibility of doing so.

Other examples abound, but as the foregoing makes clear, FEMA has engaged in a one-sided, incomplete, and inaccurate assessment of the Exercise results. Accordingly, FEMA's findings and conclusions, as set forth in the FEMA Report, must be rejected.

II. Contention 4: Fundamental Flaws Relating to LILCO's Interface with State and Local Governments

For LILCO's Plan to be successfully implemented, LERO personnel must be able to deal effectively with governmental authorities. For example, under LILCO's Plan governmental authorities must be contacted by LERO personnel before PARs can be approved; moreover, governmental approval is required for LILCO to overcome LERO's lack of legal authority to implement many portions of LILCO's Plan. The essential nature of this

"interface" function is reflected in the provisions of LILCO's Plan which seek to provide a structure for a successful "interface" between LILCO and the governmental authorities. See e.g., Plan at 1.4-2 thru 1.4-2c; OPIP 3.1.1, Att. 10.

In preparing for the Exercise, FEMA recognized that LERO's ability to interface with governmental authorities represented an essential element of LILCO's Plan. Thus, one of the objectives of the Exercise was to:

> [d]emonstrate the capability of utility off-site response organization personnel to interface with nonparticipating state and local governments through their mobilization and provision of advice and assistance.

EOC Objective 37, FEMA Report at 13. Because neither Suffolk County, the State of New York, Nassau County, nor the State of Connecticut participated in the Exercise, the participation of those governments was "simulated" through the use of FEMA controllers who played the roles of various State and County officials. FEMA Report at 8-9. The Exercise revealed, however, that LILCO is incapable of "interfacing" promptly and effectively with State and local governments. LERO personnel, in contact with simulated "officials," consistently provided inaccurate or confusing information, did not know pertinent information that they were asked about, contacted the wrong "governments" for information, and were untimely in their contacts with the simulated governmental "officials". These consistent "interface" problems constitute a fundamental flaw in an essential element of LILCO's Plan, ~~as that Plan~~ which relies

on the assumption that State and local governments would use their best efforts and follow the LILCO Plan in an actual Shoreham emergency. See 10 CFR § 50.47(c)(1)(iii)(B). ~~Plan at 1-4-2 thru 1-4-2e; OPIP-3-1-1, Attr. 10.~~ In an actual emergency, these problems would have had the potential to delay the issuance and implementation of PARs and would have led to an uncoordinated response.

Assuming the validity of ~~that~~ the Section 50.47(c)(1)(iii)(B) assumption for the sake of argument only, and assuming, again for the sake of argument, that the conduct of the government simulators (i.e., the FEMA controllers) had a basis in reality (see Contention 2), such governmental participation in and adherence to the LILCO Plan is impossible if LILCO is unable to interface effectively with the governments that it assumes will participate in the implementation of its Plan. Accordingly, LILCO has failed to demonstrate that it has satisfied EOC Objective 37, and that its Plan comports with 10 CFR §§ 50.47(b)(1) and (3), 10 CFR § 50.47(c)(1)(iii)(B), and NUREG-0654, Rev. 1, Sup. 1 §§ II.A, E and F. See also FEMA Memorandum, "Guidance for Regions to Use in Implementing NUREG-0654/FEMA-Rep-1, Rev. 1, Supplement 1 with Qualifying Exercises," March 7, 1988. The failure to satisfy these regulatory requirements and EOC Objective 37 demonstrates that LILCO cannot implement an essential element of its Plan, precludes a finding of reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at

Shoreham, as required by 10 CFR § 50.47(a)(1), and requires a finding that LILCO's Plan is fundamentally flawed.

FEMA has expressed the view that LERO personnel were successful in demonstrating their ability to interface with nonparticipating State and local governments. FEMA Report at 49. FEMA's conclusions, however, cannot be accepted. FEMA provides only a most generalized statement on the subject and fails to address at all from an interface perspective any of the examples set forth in subpart A - I below, even though many of the problems in those subparts were identified in FEMA control cell documents. In these circumstances, the Board, even if it were to pay some deference to FEMA's views, cannot bar the admission of Contention 4. See ALAB-903, slip op. at 12.

The following examples ~~of~~ also demonstrate that LILCO's ~~failure to demonstrate its~~ inability to interface with State and local governments ~~follow:~~ during the Exercise was pervasive and is not easily correctable. Any LILCO efforts to cure this flaw will inevitably require extensive review of, and modification to, LILCO's Plan, procedures and training program. Indeed, in view of the many errors, and the Governments' understanding that there was extensive drill training prior to the Exercise, LILCO may be incapable of correcting these problems, no matter how much effort it exerts. To date, no LILCO corrective action plan has been presented.

A. LILCO was untimely in keeping simulated "officials" informed of the status of the emergency. For instance, while the

emergency was upgraded to an Alert at 5:40 a.m. on Day 1, the State of New York was not informed of that fact until over an hour later at 6:43 a.m. In fact, LILCO's untimeliness prompted a LILCO apology to the simulated "Governor" on Day 1 for its delays. Similarly, a FEMA controller complained that LERO was very slow in forwarding pertinent dose rate estimates to the simulated Suffolk County Health Commissioner.

B. When LILCO activated its prompt notification system on Day 1, 57 of the system's 89 sirens failed to sound. Their activation was necessary to alert residents to tune to the EBS and receive the PARS contained in EBS No. 2, including evacuation of more than half of the EPZ. Despite the potential significance of the siren failure, LERO failed to convey notice of this situation to the governments.

C. FEMA controller logs indicate that the information provided to the simulated government "officials" was often wrong, confusing or unhelpful. For instance:

1. LILCO knew or should have known by noon on Day 1 that EPZ plume exposure protective action guideline ("PAG") limits were predicted to be exceeded. FEMA Report at 45. LILCO never so informed the simulated government "officials" on Day 1. Indeed, to the contrary, the State of New York was informed about 1:30 p.m. on Day 1 that LERO would tell the public that the doses that might be received were comparable to a chest x-ray.

2. On Day 2, LILCO advised the New York State control cell that it did not expect any ingestion-related problems and

was confirming the absence of such problems in order to assure the public. Such advice to New York State was not accurate, based upon available data at that time. FEMA Report at 51.

3. LERO gave the simulated government "officials" confusing information about the protective action it was recommending for school children ("early dismissal") at approximately 6:00 a.m. on Day 1, even though a FEMA controller noted that such a recommendation was inappropriate since school was not yet in session.

4. One government "official" noted that the LERO Health Coordinator was "not much help" in passing along critical information about the emergency.

5. Another government "official" noted LILCO's confusion regarding the information which LERO was providing concerning the status of protective actions for the Rocky Point School District. (This same "official" noted LERO's contentious attitude in dealing with the "governments.")

6. A LERO representative calling one government "official" incorrectly told the "official" that Zone G was sheltering when it was not.

7. The simulated Suffolk County Executive was given contradictory information by a LERO representative regarding the status of access control around evacuated areas.

8. LERO representatives demonstrated confusion regarding what protective actions were recommended for schools outside the EPZ, and how parents were supposed to reunite with

children attending schools outside the EPZ, but who live within the EPZ.

9. Still other LERO representatives identified the Alert stage as having been reached at 6:13 a.m. of Day 1 (the time of the first EBS message), rather than at 5:40 a.m.

D. Many LERO representatives calling simulated government "officials" had difficulty conveying pertinent information. Controller logs complain specifically that LILCO employees who called simulated "officials" did not ask with whom they were speaking, did not identify who they were, conveyed very general or "vague, nondescript" information, and gave incomplete information. Indeed, one FEMA controller noted that a LERO representative appeared "very shook up" when attempting to respond to questions. LERO representatives in contact with a simulated Suffolk County "official" were also unable to convey how many rescue and fire vehicles were needed for hospital evacuation purposes.

E. LERO workers also called simulated government "officials" for information that was actually in the Plan and should have been known to the LERO callers. For instance, many LERO workers called a simulated "official" for addresses of certain schools. As the "official" noted, those addresses are located in the LILCO Plan. See OPIP 3.6.5, Att. 3.

F. LERO workers contacted the wrong simulated government to attempt to obtain information. For instance, the LERO Evacuation Coordinator called a simulated "official" of the

State of New York to determine whether there were any impediments on the roads in Suffolk County. As the "official" commented, the proper simulated government to have called was Suffolk County.

G. As events developed, LILCO sometimes failed to "interface" at all, choosing instead to make key decisions without "government" concurrence. For instance, LERO management informed the FEMA controller simulating a New York State "official" that the ingestion PAR had been extended to 50 miles after the decision was made. Thus, LERO management failed to consult with the simulated New York State "official" and failed to seek New York State concurrence prior to the issuance of the decision. Such improper practice led a FEMA controller to conclude that there existed "a problem of lack of coordination with (the) State of New York." Similarly, although LERO traffic control informed a simulated New York State "official" that access control would not begin until the State concurred in the access control plan, this was not the case. Prior to transmission of State approval or disapproval, access control was implemented on the perimeter of Zones O, P, S, M and N.

H. Moreover, when governmental approval was requested by LERO, it was often requested prematurely. Thus, LERO expected simulated government "officials" to agree to actions without having before them all information required to make such decisions. This prompted a FEMA controller simulating a Suffolk County "official" to state that "LERO should clarify what they

want and when they can deploy" before seeking Suffolk County approval.

I. LERO's inability to interface promptly and efficiently with government "officials" resulted in delays in getting PARs onto the air waves. The PAR at the Site Area Emergency ("SAE") level was delayed from approximately 7:33 a.m., when the SAE was declared at the LERO EOC, until approximately 8:08 a.m., when EBS No. 2 was broadcast. This meant that although the SAE has an automatic ("immediate") PAR of placing animals within two miles of Shoreham on stored feed, there was a delay of more than 30 minutes in getting the PAR to the public. See FEMA Report at 39-40; EBS No. 2; OPIP 3.6.6, at § 5.1.1.1.b. It appears that it took LERO until 8:03 a.m. to obtain the "approval" of Suffolk County to issue the PAR.

Similarly, there was a delay in the initial evacuation and sheltering notification to the public from approximately 9:34 a.m., when the General Emergency was declared, until 10:26 a.m., when the public was notified. See FEMA Report at 39-40. Indeed, even though a General Emergency requires an "immediate recommendation to place milk animals within 10 miles on stored feed" (OPIP 3.6.6, § 5.1.1.1.c), this recommendation was not conveyed to the public until after 10:26 a.m. on Day 1. Thus, from 9:34 a.m. until 10:26 a.m., an incorrect PAR was being conveyed to the public via EBS No. 2. LILCO experienced similar delays with many other EBS messages as well. See Contention 6 below, where similar matters are discussed. To the extent that

LILCO may claim that these delays resulted in whole or in part from the need to obtain governmental approvals, the delays demonstrate that LILCO is incapable of effecting prompt and effective interface with government officials and that such delays have the potential to impact public health and safety severely. Indeed, the delays experienced during the Exercise meant that the public would not have been advised to take protective actions as promptly as otherwise might have been the case and, accordingly, might have resulted in persons not being alerted to harmful radiation dangers until a later time.

III. Contention 5: Fundamental Flaws Relating to Notification

NRC regulations require that an applicant demonstrate the ability to alert the public of an accident promptly. 10 CFR §§ 50.47(b)(5) and (7); 10 CFR Part 50, Appendix E, § IV.D.3; and NUREG-0654 §§ II.E.4-6. For example, under the NRC's regulations, LERO is required to notify the public of the need for protective actions within 15 minutes of the time that LERO authorities are notified by the plant (i.e., usually by the Emergency Operations Facility ("EOF") in the case of Shoreham) of the need for protective actions. See also LBP-85-12, 21 NRC 644, 757-59. Such a prompt notification capability is crucial to an adequate emergency response; without it, the public might remain ignorant of the emergency for some period of time, thus delaying or precluding the public from taking appropriate protective actions. Indeed, the Appeal Board has stated that "[p]ublic

alert and notification is unquestionably a major element of emergency planning." ALAB-900, slip op. at 28.

Consistent with the foregoing, LILCO has recognized the need for prompt notification and incorporated it as an essential element of its Plan. E.g., Plan at 3.3-4 thru 3.3-6; OPIPs 3.3.4, 3.8.2. The public alert and notification system is considered to be of such importance that it is tested at virtually all exercises. See FEMA Guidance Memorandum Ex-3, Objectives 12-15.

The Exercise revealed, however, that LILCO is incapable of implementing prompt notification to the public. Specifically, a failure in LILCO's siren system and other Exercise results discussed below demonstrated that LILCO does not have a reliable means to notify the general public, or to keep the public informed of changes in the status of a Shoreham emergency in a timely manner. Moreover, LILCO personnel failed to exercise good judgment in the face of unexpected events, and special procedures to notify the deaf proved to be ineffective. Thus, LILCO did not satisfy EOC Objectives 12 and 18, SA Objective 18 and FA Objective 18 and demonstrated that it cannot meet the foregoing NRC regulations. These failures represent fundamental flaws in an essential element of LILCO's Plan.

FEMA found that LILCO had performed satisfactorily on public notification matters. E.g., FEMA Report at 44, 46, 75. FEMA's rationale provides no basis, however, for rejection of Contention 5. First, with respect to the problems identified in subparts A

and B below, FEMA did not even evaluate the siren failure or the judgment (or lack thereof) exercised by LERO personnel when the sirens failed. Thus, the FEMA Report provides no basis even to consider rejection of subparts A and B. Second, with respect to subpart C, FEMA again failed even to discuss whether the delays described therein constituted a serious failure of performance. Once again, therefore, the FEMA Report contains no discussion that arguably might be entitled to some deference. Finally, with respect to subpart D concerning notification of the deaf, FEMA's conclusion that the problems identified during the Exercise were "minor" (FEMA Report at 75) was supported by no explanation. The reference by FEMA to the 1985 Partial Initial Decision is not persuasive, since the types of problems demonstrated in the 1988 Exercise could have delayed protective actions for the deaf population for much more than four hours.

Examples of the ways in which LILCO failed to demonstrate an ability to provide prompt notification are set forth below. They reveal that the defects in LILCO's prompt notification system are serious and not readily correctable as they cover diverse elements of the notification function. For example, the failure of virtually LILCO's entire siren system was indicative of far more than a simple mechanical breakdown of the siren system. In a real emergency, such a wholesale failure of LILCO's siren system would have severely impacted LILCO's ability to provide timely notification to the public and the public's receipt of PARs. LILCO must, therefore, demonstrate that it has remedied or

can remedy the equipment and/or training defects that led to the collapse of its prompt notification system. Given the scope of the system's failure during the Exercise, the efforts required to cure those defects -- assuming they can be cured -- are likely to be extensive. Furthermore, LERO's failure to react appropriately to the siren failures constitutes a systemic deficiency in the failure to teach LERO personnel to use good judgment and to respond to unexpected events, similar to deficiencies that were revealed during the 1986 exercise (LBP-88-2, 27 NRC at 178-80, 197-200) and still have not been corrected. Likewise, LILCO's untimeliness in notifying the public, and flaws in notifying the deaf, if correctable at all, will require substantial review of, and modification to, LERO's notification procedures and extensive revisions to the LILCO training program. The substantial notification delays and defects noted below are also likely to result in significant delays in the public's receipt of PARs.

A. LILCO has developed a so-called "prompt notification system" consisting of 89 sirens located within the EPZ. According to LILCO's Plan, the sirens, when triggered, are supposed to alert the public to tune to LILCO's EBS for official information. Plan at 3.3-4; OPIP 3.3.4 at 2. On Day 1 of the Exercise, LILCO activated the sirens to attempt to test LILCO's public alerting capabilities, as required by 10 CFR Part 50, Appendix E, § IV.F. That effort failed dismally, however, when 57 of the 89 LILCO sirens failed to function. In the event of a

real emergency, such a failure would mean that a substantial majority of EPZ residents would not receive prompt notification of an accident or of the PARs which are recommended to be taken. Absent such notification, there can be no likelihood that the PARs can be implemented, thus threatening the public's health and safety.

B. In an emergency situation, if sirens were to fail, LILCO's Plan provides for backup notification to the public via use of route alert drivers. OPIP 3.3.4 at 5 and Att. 3. On Day 1 of the Exercise, when 57 sirens failed, LILCO personnel failed to exercise good judgment or to follow the Plan in the face of that unexpected situation. The siren failure was not communicated to other LERO personnel or to the media or to the "governments;" no route alert drivers were activated or sent out, and no other actions were taken to attempt to respond to the siren failures, thus underscoring the fact that LILCO cannot be relied upon to provide prompt notification to the public as required by NRC regulations.

C. The Exercise demonstrated that, even aside from siren failures, LILCO is incapable of complying with regulatory requirements for promptly notifying the public of emergency conditions requiring protective actions. Some examples are:

1. The LERO EOC declared an Alert at 5:49 a.m. on Day 1, a condition (given the time of day) which required a PAR to cancel schools. OPIP 3.6.1 at 31a. LERO failed to notify the

public, however, until 6:13 a.m. on Day 1, when EBS No. 1 was "broadcast."

2. The EOF advised the LERO EOC of conditions mandating a Site Area Emergency at approximately 7:30 a.m. on Day 1. FEMA Report at 39. Thus, by approximately 7:45 a.m. on Day 1, LERO should have notified the public of the Site Area Emergency and also should have advised the public of the protective action to put dairy animals on stored feed. Instead, however, LERO waited until 8:08 a.m., when EBS No. 2 was "broadcast," to accomplish this notification.

3. The EOF notified the LERO EOC of the existence of a General Emergency and the need for evacuation and sheltering at approximately 9:34 a.m. on Day 1. That recommendation was received by the LERO EOC no later than 9:37 a.m. on Day 1. See FEMA Report at 40. The declaration of General Emergency required an immediate PAR to expand the dairy animal PAR already being "broadcast" in EBS No. 1. The public, however, was not notified of any new PARs until at least 10:26 a.m. on Day 1, when EBS No. 3 was "broadcast." The notification at 10:26 a.m. was not only untimely, it was inadequate, since it did not provide any PAR regarding what persons should do if they decided not to evacuate. This PAR was not provided until EBS No. 10 was "broadcast" at 11:35 a.m. on Day 2, a delay of over 24 hours.

4. At 11:00 a.m. on Day 1, the EOC and the EOF were notified that a release of radiation had begun. FEMA Report at 39. The public was not notified of this increased safety risk

and of the resulting recommendation that evacuees from affected zones should go to reception centers until EBS No. 4 was issued one hour and 11 minutes later, at 12:11 p.m.

D. The LILCO Plan provides special means for notification of the deaf. Specifically, route alert drivers are assigned to drive designated routes within the EPZ and to notify deaf people living along those routes of an emergency. OPIP 3.3.4 at 6, 7. There were several instances, however, in which route alert drivers were unable to identify the homes of the deaf or find the routes that they were supposed to drive. See FEMA Report at 75. In an actual emergency, these failures would have resulted in substantial numbers of deaf people failing to receive prompt notification of the emergency, thus threatening their health and safety.

IV. Contentions 6-10: Fundamental Flaws Relating to Public Information

Contention 6: EBS Messages. An essential element of the LILCO Plan provides for the dissemination of emergency information to the public through messages broadcast over an emergency broadcast system ("EBS"). Plan at 3.8-6 thru 3.8-8; OPIP 3.8.1, § 5.2; OPIP 3.8.2. The importance of adequate emergency information to an effective response is reflected in the fact that such information is required by NRC regulations (10 CFR § 50.47(b)(6); NUREG-0654 §§ II.E and F) and tested regularly by FEMA. See FEMA Guidance Memorandum Ex-3, Objectives 12 and

13. Indeed, the need for good public information was one of the subjects of this Board's previous inquiry into LILCO's 1986 exercise. Moreover, the Appeal Board stated recently that "[t]he EBS message is an integral component of the public notification system, and ordinarily should be tested in a full participation exercise." ALAB-900, slip op. at 29. In LBP-88-2, the Licensing Board determined that the February 1986 exercise revealed fundamental flaws in certain aspects of LILCO's Plan for the dissemination of clear, accurate and timely public information. In particular, the Board found that LILCO's EBS messages were frequently inconsistent and confusing, and that such EBS problems were an integral part of a fundamental flaw in LILCO's Plan. 27 NRC at 170-72.

The results of the Exercise demonstrate that LILCO has failed to correct this fundamental flaw in its Plan and that additional EBS-related fundamental flaws exist. LILCO personnel repeatedly "broadcast" EBS messages that were confusing, inaccurate, inconsistent, untimely, poorly organized and/or too long to be effective. Therefore, the LILCO Plan is fundamentally flawed in that it cannot be implemented effectively by LERO personnel, and fails to comply with 10 CFR § 50.47(b)(6) and NUREG-0654 §§ II.E and F. The numerous defects in LILCO's EBS messages create a strong likelihood that the public will not view LILCO as a credible source of emergency information, making it less likely that the PARs and other information conveyed in the EBS messages will be believed or

relied upon. See Contention 9. Furthermore, LILCO's substantial untimeliness in issuing EBS messages is likely to result in delays in the public's receipt of, and response to, PARs.

FEMA identified several EBS-related problems, assessing both an "ARCA" and an "ARFI" (Area Recommended for Improvement). FEMA Report at 45, 55, 56. FEMA never addressed, however, the vast majority of the problems listed in subparts A - D below. Thus, the FEMA Report in this regard stands as no obstacle to Contention 6's admission. Moreover, to the limited extent that FEMA did address the problems listed in COntention 6, it provided no explanation why these problems, when viewed with the many other problems listed in Contention 6, should not be considered a fundamental flaw. Indeed, FEMA provided no rationale at all in its Report for its EBS "grade." Thus, FEMA's views on the EBS problems revealed by the Exercise do not constitute a bar to admission of Contention 6.

The following examples illustrate many of the flaws concerning LILCO's EBS messages that were demons' ated during the Exercise. Their sheer number demonstrates that LILCO's EBS failures are pervasive and not readily correctable. Indeed, LILCO had over two years to correct similar flaws found as a result of the February 1986 exercise, but failed to do so, making it all the more clear that these problems are not readily correctable. Thus, it must be concluded that any attempts to correct LILCO's continued failure to issue clear, concise,

accurate and timely information to the public will require extensive retraining of LILCO personnel and substantial review of, and modifications to, LILCO's Plan and procedures for issuing EBS messages.

A. The EBS messages contained incorrect information. For example:

1. EBS Nos. 4, 5, 6, and 7, "broadcast" between 12:11 p.m. and 5:52 p.m. on Day 1 of the Exercise, stated that only small doses of radiation were projected at the Shoreham site boundary and that these doses would be below EPA guidelines for doses requiring protective actions. However, at the time EBS Nos. 4-7 were being "broadcast" -- a period covering almost six hours during which thousands of EPZ residents were supposed to be evacuating -- the projected radiation doses beyond the Shoreham site boundary were in excess of the EPA's guidelines for protective actions. FEMA Report at 45. LERO's EBS messages were inaccurate and could have convinced persons that there was no immediate danger or that the EBS messages could be ignored -- i.e., that the recommended protective action of evacuation was merely a precaution -- thus resulting in persons remaining in zones of potential danger and receiving greater radiation doses.

2. EBS No. 2, "broadcast" at 8:08 a.m. on Day 1, not only contained incorrect information, but also sought to minimize the seriousness of the potential ingestion pathway hazard. Thus, EBS No. 2 recommended placing milk-producing animals within two miles of Shoreham on stored feed. LILCO stated it was issuing

that recommendation because it was "required" to do so by "NRC regulations." This statement was followed by the assertion:

> This does not mean that a release of radiation has occurred. This does not mean that a release of radiation will occur.

These statements tended to understate the possible seriousness of the developing accident, at the precise time when it was important to establish LILCO's credibility with the public. The message suggests that LILCO was issuing the dairy animal PAR because it was forced to do so by a "regulation," rather than because the PAR was a prudent step in attempting to avoid harmful radiation exposure. Further, LILCO's initial statement is untrue: there is no NRC regulation that required LERO at 8:08 a.m. to recommend putting milk-producing animals on stored feed. That is a requirement of LILCO's Plan. OPIP 3.6.6, § 5.1.1.1.b. Similar inaccurate statements concerning alleged requirements of NRC regulations were contained in EBS Nos. 3, 4, 5, 6, 7, 8, 10, 15, and 16. Accordingly, inaccurate EBS assertions were broadcast throughout the three-day Exercise.

3. EBS No. 1 was issued at 6:13 a.m. on Day 1, a time prior to the opening of any schools, and prior to the time school buses began picking up children. The LILCO Plan thus called for a PAR that school be canceled. OPIP 3.6.1 at 31a. Nevertheless, contrary to the Plan and contrary to good judgment and common sense, LERO recommended that schools should "immediately cancel classes or implement their early dismissal plans." (Emphasis added.) The possibility of schools

implementing early dismissal, rather than simply canceling classes, was an incorrect instruction, having the potential to cause confusion and concern, not to mention increased risks of exposure to radiation, because it implied that children should first be sent to school.

LILCO's error in EBS No. 1 was all the more serious because LILCO failed to correct the error. EBS No. 1 was rebroadcast every 15 minutes until EBS No. 2 was issued at approximately 8:08 a.m. Shortly after EBS No. 1 had been "broadcast" the first time, a FEMA controller advised LILCO that its notice to dismiss the schools early was inappropriate, given the early hour of the day. Nevertheless, LERO personnel did not correct the error.

It should be further noted that as EBS No. 1 was being "broadcast" after 7:00 a.m., the notification to "cancel" classes became inapplicable. By that hour, most schools in the 10-mile EPZ would have commenced the process of picking up students and, accordingly, the appropriate protective action would have been early dismissal. It was not until EBS No. 2 was "broadcast" at 8:08 a.m. that the school cancellation recommendation was deleted, however.

4. EBS No. 10A was "broadcast" at 3:35 p.m. on Day 2. It stated, among other things, as follows:

> Residents beyond the 10-mile Emergency Planning Zone do not need to take any protective action as a consequence of the incident on June 7, 1988, at the Shoreham Nuclear Power Station. Residents beyond the 10-mile Emergency Planning Zone have not been exposed to contamination in excess of the guidelines established by the U.S. Environmental Protection Agency and New York State for protective action. In particular,

> residents east of the 10-mile zone are not required to take any protective action whatsoever. This conclusion is the result of active sampling by Federal, State and County survey teams throughout the area.

The foregoing information was inaccurate, demonstrating LERO's inability to convey proper PARs to the public, the failure to assimilate information from diverse sources within LERO, and inadequate interface with the "governments." Among other inaccuracies were the following:

(a) As of no later than early on Day 2 of the Exercise (and probably earlier; see Contention 11), sufficient data existed to justify ingestion PARs in the 10-50 mile zone. FEMA Report at 51. In fact, a Field Monitoring Data Log from Day 1 indicated Beta readings in excess of 400 cpm above background, a threshold under LILCO's Plan (OPIP 3.6.6, § 5.2.2) for ingestion actions.

(b) At approximately 1:00 p.m. on Day 2 of the Exercise, the New York State control cell had been advised by LERO that there were "hot spots" east of the plant.

(c) At 2:15 p.m. on Day 2 of the Exercise, the LERO Director and DOE advised the New York State control cell via conference call that "hot spots" had been identified 13 miles east of the plant with measurements above the EPA PAGs.

In view of the foregoing, it was wrong for LERO to have advised, via EBS messages on Day 2, that persons outside the 10-mile EPZ to the east of the plant were not required to take any protective action whatsoever. This error went uncorrected

until EBS No. 17 was "broadcast" at 12:52 p.m. on Day 3 of the Exercise.

5. EBS No. 16, "broadcast" at noon on Day 3 of the Exercise, asserted that persons outside the 10-mile EPZ needed to take no action because radiation doses, if any, were below the EPA guidelines. Prior to that EBS, at 10:40 a.m. on Day 3, the New York State control cell had been advised that LERO had found milk samples exceeding the PAGs for infants in Riverhead, New York, and locations further east. Further, the advice in EBS No. 16 that persons outside the 10-mile EPZ needed to take no action was inconsistent with other portions of that EBS message. In fact, paragraph 8 of EBS No. 16 advised the public that animals located east of the William Floyd Parkway needed to be put on stored feed. This "advice" was not limited to the 10-mile EPZ and suggested that persons outside the EPZ should have been advised to take action. Accordingly, EBS No. 16 was not only inaccurate, it also was internally inconsistent and confusing.

6. Incorrect information was included in EBS No. 4, which was "broadcast" at 12:11 p.m. on Day 1 of the Exercise. That message reported that as of 11:46 a.m., children from the Rocky Point Public School District were en route to the Nassau County Coliseum. In fact, however, at the time EBS No. 4 was "broadcast," LERO was aware that those children were being redirected to Hicksville for monitoring and possible decontamination. This erroneous information was repeated in EBS No. 5, "broadcast" at 1:08 p.m. on Day 1. An attempt was made by

LERO to update this information in EBS No. 6 by tacking the information concerning the monitoring and possible decontamination of the Rocky Point school children onto that message. The updated information, however, was located quite some distance (2 pages) from the repeated misinformation. This situation was not clarified until EBS No. 7 was issued at 5:52 p.m. on Day 1.

B. The LERO EBS messages did not disseminate important information to the public in a timely fashion. For example:

1. Beginning at 10:26 a.m. on Day 1 of the Exercise, and continuing every 15 minutes thereafter until 12:11 p.m. on Day 1, EBS No. 3 was "broadcast." That EBS message stated, among other things, that there was a possibility of fuel damage which could result in a significant radiation release to persons downwind of the plant. It further advised that the release of radiation into the air could begin in approximately two hours. By 11:00 a.m., however, LERO personnel knew that a release of radiation from Shoreham had begun. Notwithstanding this knowledge, EBS No. 3 continued to be "broadcast," and thus, the public was incorrectly "advised" that a release would not occur for two hours when, in fact, the release was already occurring.

2. It was not until EBS No. 4, "broadcast" initially at 12:11 p.m. on Day 1 of the Exercise, that LERO "advised" persons from the evacuated zones to go to LILCO reception centers. This advice was untimely. LERO logs indicate that as of 11:12 a.m., 59 minutes earlier, LERO had already developed a

list of the zones that needed to be instructed to go to reception centers. LERO failed, however, to amend EBS No. 3 in a timely manner to advise persons of the need to report to reception centers. Instead, LERO waited almost an hour, until EBS No. 4 was "broadcast," to issue that advice.

When LERO did issue EBS No. 4, thereby advising persons in particular zones to go to the reception centers, its advice was confusing. EBS No. 4 stated that persons should go to reception centers "[t]o be certain that there is little or no hazard." Evacuees were not told the nature of the hazard (possible contamination), what would happen at reception centers, (monitoring to detect contamination and, if necessary, decontamination), or given other information to explain why they should follow this recommended action. EBS Nos. 5 and 6 also were deficient in this regard. It was not until EBS No. 7 was "broadcast" at 5:52 p.m. on Day 1 that persons were advised that they would be monitored and (if needed) decontaminated at reception centers.

LERO's confusing and untimely instruction in EBS Nos. 4-6 could have caused persons to delay going to reception centers for monitoring and decontamination. Indeed, as late as 2:50 p.m. on Day 1 of the Exercise, LILCO personnel noted that a substantial number of people who were supposed to go to reception centers were not doing so. Nevertheless, this matter was not addressed in an EBS message until 5:52 p.m., some three hours later, when EBS No. 7 was "broadcast."

3. As of 10:26 a.m. on Day 1 of the Exercise, persons in Zones A-J, O, P, and S were recommended to evacuate. Notwithstanding this recommendation, LILCO knew that some portion of the population in those zones would nevertheless choose to remain at home. Indeed, on Day 1 LERO advised the FEMA control cell that 5% of the people advised to evacuate had chosen not to do so. Thus, LILCO knew or should have known that it needed to caution these persons about how they could protect themselves (i.e., via sheltering). LILCO failed to do so, however, until Day 2 of the Exercise, when EBS No. 10 was "broadcast."

4. LILCO did not advise the public of the PAR for dairy animals within two miles of the Shoreham plant until EBS No. 2 was "broadcast" at 8:08 a.m. on Day 1 of the Exercise -- almost 40 minutes after a Site Area Emergency had been declared. During this time, EBS No. 1 was being "broadcast" every 15 minutes. That message contained no dairy animal PAR. LILCO thus failed to follow its Plan, which requires that this dairy animal PAR be an "immediate recommendation" after a Site Area Emergency is declared. See OPIP 3.6.6, § 5.1.1.1.b.

LILCO's delay in issuing the dairy animal PAR could have been all the more confusing, because media at the ENC were advised of the Site Area Emergency shortly after 7:30 a.m. on Day 1 of the Exercise, and would certainly have begun disseminating that information while EBS No. 1 was still being "broadcast." Moreover, a similar delay was involved in expanding

the two mile dairy animal PAR to 10 miles, when a General Emergency was eventually declared on Day 1.

5. At approximately 11:46 a.m. on Day 1 of the Exercise, a decision was made to transport children who live within the EPZ, but attend school outside the EPZ, to the Nassau Coliseum at the end of the day if their parents had not picked them up. The FEMA control cell was told several times that this information would be placed in an EBS message, but the control cell was not even asked to approve an EBS message until 4:31 p.m. on Day 1, and this information did not appear in an EBS message until 5:52 p.m., when EBS No. 7 was issued. It was untimely for LILCO to have waited until 5:52 p.m. to have made known its decision to transport these school children to the Nassau Coliseum, particularly since schools dismiss around 3:00 p.m. Moreover, between the time of LILCO's decision to transport the children and the issuance of EBS No. 7, three EBS messages (Nos. 4-6) were issued. All these messages mentioned some school matters; however, none mentioned LILCO's decision regarding EPZ-resident school children attending school outside of the EPZ, which had been made at 11:46 a.m.

6. EBS No. 7 also was misleading and confusing in that it advised parents with children attending schools outside the EPZ, but residing within the EPZ, to pick up those children "at their schools in accordance with protective action plans of the individual schools," while, in the next sentence, it advised that such children already had been transported to the Nassau

Coliseum. EBS No. 8, which was "broadcast" on Day 2 of the Exercise, repeated this misleading message.

7. The LERO Coordinator of Public Information was notified at 12:12 p.m. on Day 1 of the Exercise of the need to issue an EBS message informing the public of a traffic impediment in Coram at Granny Road. This information was not disseminated until EBS No. 5, which was issued at 1:08 p.m. Thus, there was a delay of almost one hour in conveying this information to the public, even though the information concerning the impediment of Granny Road was the only change from EBS No. 4.

8. LERO informed the State of New York control cell at 10:51 a.m. on Day 3 of the Exercise that LERO management had decided to extend ingestion PARs for milk-producing animals on stored feed to 50 miles. Nevertheless, LERO did not promptly amend its prior EBS message and EBS No. 16, subsequently issued at noon on Day 3, did not make clear that an ingestion PAR had been extended to 50 miles for milk-producing animals.

9. As of 12:05 p.m. on Day 3 of the Exercise, the New York State control cell was advised that milk and vegetables east of the EPZ might be contaminated. Despite this information, EBS No. 16 was not promptly amended to reflect such data. Further, EBS No. 17, which was issued at 12:50 p.m., did not report this information accurately. Whereas the advice to the New York State control cell stated broadly that milk and vegetables east of the EPZ might be contaminated, EBS No. 17 defined the area of potential contamination much more narrowly.

10. A road impediment at Sheep Pasture Road was reported to the EOC at 11:28 a.m. on Day 1 of the Exercise. Such advice was not conveyed to the public, however, until EBS No. 4 was "broadcast" at 12:11 p.m. on Day 1. Similarly, approximately one hour elapsed between the time that the EOC became aware of a traffic impediment blocking Granny Road and the issuance of EBS No. 5, which advised evacuees to avoid this area. Such untimely notification of impediments could lead to substantial delays in the evacuation of residents from affected zones, thereby increasing their risk of radiation exposure.

C. The LERO EBS messages were too long and they were poorly organized. Indeed, many of the EBS messages were 4-5 pages long (single spaced), requiring many minutes just to read them over the EBS. Due to their excessive length, the public might not have listened to the entire message. This could have resulted in listeners missing pertinent information. FEMA Report at 45.

Concerns resulting from the excessive length of the EBS messages were compounded by the fact that the messages were poorly organized, leading to further confusion and ineffectiveness. An important function of EBS messages is to provide the public with new information about the circumstances surrounding the emergency. LILCO personnel, however, usually inserted new information in the middle or toward the end of the messages, rather than at the beginning, where it should have appeared. FEMA Report at 45. Thus, if persons stopped listening

because of the excessive length of the messages, they likely would have missed any new and important information which was being conveyed. Examples of problems in the organization and structure of the LERO EBS messages are set forth below.

1. EBS No. 5 exemplifies LILCO's "cut and paste" approach to structuring EBS messages. The addition of information about a traffic impediment on Granny Road was the only change from EBS No. 4. This new information, however, was relegated to the bottom of page 3, towards the end of the message. This same procedure was followed in EBS No. 6, where information about the fourth traffic impediment was added -- again, toward the end of the message.

2. LERO personnel revised EBS messages in a mechanical manner, rather than exercising sound judgment and having a clear understanding of the context of new information that was being inserted into existing EBS messages. When inserting new information, LERO personnel failed to determine whether the surrounding text of the message being revised required modification so that the newly-inserted information would not be confusing or contradictory. For instance, on page 3 of EBS No. 10, issued at 11:35 a.m. on Day 2 of the Exercise, people outside the 10-mile EPZ were told that they did not need to take any protective action. That statement was immediately followed, however, by the statement, "Make sure that before you leave your home or business, you have closed all windows and doors . . . . [y]ou could be away for several days." This

confusing and conflicting information was not corrected until EBS No. 15 was issued at 10:05 a.m. on Day 3 of the Exercise.

Similarly, EBS No. 16 contained cumulative information that would have confused the public. At one point on page 4, for example, the public was advised that doses outside the 10-mile EPZ were below levels requiring protective actions. At another point on the same page, it was stated that "[i]n particular, residents east of the 10-mile zone are not required to take any protection [sic] action whatsoever." This second entry suggested that persons in other areas were not as well protected and perhaps should have taken protective action.

3. Careless organization of the EBS messages also was reflected in EBS No. 3, "broadcast" at 10:26 a.m. on Day 1 of the Exercise. On page 2, listeners "within the 10-mile emergency planning zone" were told to refer to their brochures in order to determine the zone in which they live. Then, after a page-and-a-half of newly inserted recommendations, a description of the 10-mile zone was given. This poor organization continues in EBS Nos. 4, 5, 6, 7, 8 and 10.

4. Another indication of the poor organization of LILCO's EBS messages was the failure to mention, until the end of the EBS messages, that emergency information is contained in local telephone books. As FEMA noted:

> Because experience has shown that many people do not retain emergency booklets, telephone books may be the only source of such information at some homes and offices. EBS messages should explain as close to their beginning as possible that emergency information is provided in their telephone book.

FEMA Report at 45. Similarly, the messages neglected to tell listeners that LILCO's Customer Relations District Offices and Customer Call Boards could be telephoned if additional information were needed or questions regarding the emergency arose. But see Contention 8.

5. In EBS No. 8, issued at 9:06 a.m. on Day 2 of the Exercise, LILCO issued its first ingestion pathway "precaution" (except for automatic dairy animal advisories originally issued early on Day 1). The LILCO "precaution" in EBS No. 8 stated:

> Food in homes or stores in the 10-mile Emergency Planning Zone which was frozen, refrigerated or securely packaged prior to the incident is safe to consume except for foods that may have naturally spoiled. As a precaution pending further analysis, fruits and vegetables locally grown and from gardens stored prior to the incident should be avoided. In addition, as a precaution, however, all fruit and vegetables stored inside prior to the incident should be washed before consumption. There are no restrictions on water.

This notice is unclear on its face. The first sentence discussed the 10-mile EPZ, but the remainder of the message -- the portion where specific actions were recommended -- did not state specifically whether it applied to the entire 10-mile EPZ, to part of it, or to a larger area. This precaution was all the more confusing because the immediately prior paragraph discussed the specific zones which were recommended to be sheltered, while the following paragraph discussed the specific zones to be evacuated. This "precaution," in short, was inserted in an inappropriate location in EBS No. 8.

Moreover, the message was inconsistent. Specifically, the second sentence advised persons to avoid fruits and vegetables stored prior to the incident, while the third sentence merely recommended washing such food prior to consumption. Similar confusing statements were contained in EBS Nos. 10, 15, 16, and 17.

D. LILCO's EBS messages lacked significant details and were otherwise confusing and vague.

1. LILCO's EBS messages did not provide clear information regarding protective actions for special facility residents. For example, EBS Nos. 3 and 4 both recommended evacuation for certain zones of the EPZ and sheltering for other zones. The EBS messages did not mention, however, whether residents of special facilities in or near the EPZ were to comply with those general recommendations, or whether there were special recommendations relating to those persons. This failure of LILCO's EBS messages to clearly convey to all affected members of the public the PARs being recommended represents a continuation of LILCO's inability to exercise good judgment and to communicate clear, precise, and unambiguous information to the public.

2. No EBS message during the Exercise informed the public that the Long Island Railroad had agreed to alter service to and from the EPZ. Thus, the public was not informed that a potential means of evacuating the EPZ was not available.

3. EBS No. 2 urged persons in Zones A-E to put

milk-producing animals on stored feed. The message never stated, however, where Zones A-E were, or even their approximate location. Rather, persons were directed to refer to their brochures for "help [to] understand future messages" (emphasis added). The EBS message did not indicate that the brochure would help in understanding that message, except to state that the brochure contained zone information.

4. In EBS No. 3, LERO recommended that all zones in the 10-mile EPZ either shelter or evacuate. LILCO then stated:

> If you are not within planning zones A, B, C, D, E, F, G, H, I, J, O, P and S or planning zones K. L, M, N, Q and R, there is no reason to either shelter or evacuate. If you are outside the 10-mile emergency planning zone, there is no reason to take any action.

The clear implication of this message was that there are zones within the 10-mile EPZ other than those which were listed. As this is not the case, the statement made was misleading and confusing.

Moreover, the above statement from EBS No. 3 was followed by a similarly misleading statement:

> We are required by NRC regulations to recommend that all milk producing animals in the 10-mile Emergency Planning Zone should be moved into shelters and placed on stored feed. This does not mean there is any danger from radiation in zones that have not been recommended to shelter or evacuate.

(Emphasis added.) As noted, all zones had already been mentioned. Similar confusing information was contained in EBS Nos. 4, 5, 6, and 7.

5. The Exercise demonstrated that LILCO is incapable of providing prompt notification of emergency conditions to

residents of special facilities (adult homes, nursing homes, and hospitals). EBS No. 3 was issued at 10:26 a.m. on Day 1 of the Exercise. That EBS message specifically mentioned the needs of homebound individuals. The message did not mention at all what protective actions, if any, were recommended for residents of special facilities. Indeed, it did not even indicate that LERO personnel would attempt to contact special facilities (other than via EBS messages) in order to advise them of what particular protective actions would or might be recommended for those special facilities.

6. EBS No. 3 also advised persons in certain specified zones to evacuate. There was no direction in that message that persons from those evacuated zones should report to reception centers for any purpose. Nevertheless, in paragraph 5 there was discussion of the locations of, and ways to reach, the reception centers. There was no statement in the EBS message, however, describing the purpose reception centers serve or why any person should attempt to reach these reception centers. There also was not any discussion of the fac' that at the reception center, people in need of shelter would be directed to congregate care centers.

7. Also in EBS No. 3, persons in Zone K were told to evacuate in one sentence and to shelter in a later sentence in the same paragraph.

8. On page 1 of EBS No. 4, "broadcast" at 12:11 p.m. on Day 1 of the Exercise, irreconcilable information was

juxtaposed. First, the message stated that a "general emergency condition . . . indicates . . . fuel core damage, which could result in a significant radiation dose to people downwind." (Emphasis added.) The next sentence then defined small doses as "doses below the U.S. Environmental Protection Agency's guidelines requiring protective actions." The message next stated that protective actions were, nevertheless, being recommended "as a precaution." The following paragraph then reported that the plant was continuing to release radiation (and that this had been occurring since 11:00 a.m.), but, that only small doses were projected "at the site boundary." Aside from the fact that this information was incorrect (FEMA Report at 45), these conflicting messages, inserted at the beginning of EBS No. 4, would likely have caused the average listener to conclude that the people "in charge" did not in fact know what was happening. As a result, recommendations made by LERO would likely have been ignored.

9. EBS No. 10, broadcast at 11:35 a.m. on Day 2 of the Exercise, stated that persons outside Zones A-J, O, P and S "do not need to take any action . . ." Later in the same message, however, it was stated that all persons in the EPZ were to take precautions regarding locally grown fruits and vegetables and that all milk-producing animals within the EPZ were to be placed on stored feed. Clearly, the message was internally inconsistent. EBS Nos. 15 and 16 on Day 3 contained similar inconsistencies.

10. EBS No. 15, broadcast at 10:05 a.m. on Day 3 of the Exercise, included a sheltering recommendation for milk-producing animals in Connecticut, while stating that no protective actions needed to be taken by residents outside the 10-mile zone. This inconsistent information was also included in EBS No. 16, issued at 12:00 p.m.

11. EBS No. 16, "broadcast" at 12:00 noon on Day 3, stated that persons located more than 10 miles from Shoreham needed to take no action due to radiation doses. Thereafter, however, the same message stated that livestock at "all locations east of the William Floyd Parkway on Long Island should be moved into shelters and placed on stored feed." This inconsistency continued in EBS No. 17, which was "broadcast" at 12:50 p.m. on Day 3.

12. EBS No. 17, broadcast at 12:50 p.m. on Day 3 of the Exercise, contained further inconsistencies. It stated (page 1) that there were radiation measurements above ingestion PAR levels outside the EPZ, requiring special action related to local produce. At page 4, however, it stated (in two places) that persons outside the EPZ needed to take no action because doses were below PAR levels. It also stated (page 5) that persons within the 10-mile EPZ were to exercise care in consuming local produce, implying that persons outside the 10-mile EPZ should have had no concerns.

13. EBS No. 17 was an exception to LILCO's general practice of inserting new information toward the end of an EBS

message. EBS No. 17 (page 1) contained the initial ingestion pathway PAR. But LILCO did nothing to highlight to the listening public that this constituted a new PAR. Indeed, it confused the situation. EBS No. 17 advised that the FDA Protective Action Guidelines had been exceeded in the following area:

> This area is bounded by the Long Island Sound on the north, Route 25 on the south, Wading River - Manorville Road on the west and Aldrich Lane on the east.

The message then went on to state that with respect to the ingestion PAR, "all locally grown fresh produce and leafy vegetables stored in the open should be washed, brushed, scrubbed or peeled to remove surface contamination." This message was confusing and unclear in multiple respects, including the following:

(a) In contrast to other messages (and other portions of EBS No. 17) the precise EPZ zones were not identified.

(b) The message did not specify whether only produce and vegetables grown in the area where FDA dose rates had been exceeded or "all locally grown" produce had to be treated.

Contention 7: Emergency News Center. The Exercise demonstrated fundamental flaws in the LILCO Plan because: LILCO was unable to provide timely, accurate, consistent, non-confusing, and non-misleading information to the news media at the Emergency News Center ("ENC"); LILCO's news briefings did not ensure public and media confidence; and LILCO did not

prevent misinformation and did not respond adequately to the media's questions. LILCO thus failed to demonstrate that it could implement an essential element of its Plan adequately or effectively. See Plan at 3.8-4 thru 3.8-5 and 3.8-8; OPIP 3.8.1.

The Plan provides, in pertinent part, that: "[a]ll public information personnel will confer on a regular basis to ensure that accurate and consistent emergency information is being shared and discussed." Plan at 3.8-4. Under the LILCO Plan, news briefings at the ENC are to serve three purposes:

- to provide accurate information on a timely basis
- to ensure public and media confidence
- to prevent misinformation and rumors

Plan at 3.8-5. Similarly, press conferences are to "provide up-to-date information, respond to any rumor received, and answer any questions the media may have." Plan at 3.8-8. Moreover, according to OPIP 3.8.1, the LERO Coordinator of Public Information is to "[c]onfer with the Director of Local Response . . . and the Public Information Staff at the ENC on a regular basis to maintain consistent information content;" and "obtain up-to-date information regarding [the] offsite emergency response" prior to preparing press releases.

The Licensing Board in LBP-88-2 recognized that clear and timely communications with the media are important: "if such [clear, accurate and timely] information is not provided, the media will at best be a neutral influence and at worst detrimental to an orderly response." 27 NRC at 151. In

addition, FEMA has standard objectives to test ENC operations. See FEMA Guidance Memorandum EX-3, Objectives 14, 15. Thus, the operations of the ENC comprise an essential element of LILCO's Plan, and are intended to meet the requirements of 10 CFR §§ 50.47(b)(6) and (7) and NUREG-0654 §§ II.G.2-4.

The 1986 exercise revealed fundamental flaws in numerous aspects of LILCO's ENC scheme. LBP-88-2, 27 NRC at 149-67. As the examples in subparts A-H below reveal, those flaws remain and, in fact, the Exercise revealed the existence of new flaws. Thus, during the Exercise, LILCO was incapable of complying with the LILCO Plan and OPIPs, and LILCO did not provide the media and public with accurate and timely information. LILCO also failed to satisfy ENC Objectives 13 and 14. Accordingly, the Exercise demonstrated that ~~the~~ this essential element of the LILCO Plan is fundamentally flawed because it cannot be implemented by LILCO and fails to comply with 10 CFR §§ 50.47(b)(6) and (7) and NUREG-0654 §§ II.G.2-4. Furthermore, the substantial delays in conveying important information, as noted in several of the examples below, are likely to cause significant delays in the public's receipt of, and response to, PARs.

FEMA found LILCO's ENC performance to be satisfactory. FEMA Report at 69. FEMA's conclusions in this regard, however, are devoid of detail, providing no indication of FEMA's bases for such a view. In particular, FEMA's discussion in its Report fails to address any of the specific examples noted by the Governments in Contention 7. Thus, the matters set forth in the

FEMA Report provide no basis to disregard the allegations set forth by the Governments in Contention 7. Indeed, the Governments' specific examples, as set forth in subparts A - H below, constitute a clear prima facie rebuttal of FEMA's conclusions.

The numerous examples set forth below also reveal the pervasive nature of LILCO's inability to operate the ENC effectively. In addition, they demonstrate that any efforts to correct this deficiency will require extensive retraining of ENC personnel and substantial review of, and modifications to, LILCO's Plan and procedures. Indeed, given LILCO's failure to correct errors and problem areas revealed during the 1986 exercise, it is doubtful that LILCO is even capable of correcting these problems.

Exercise results which individually and collectively demonstrate these LILCO failures and fundamental flaws in the LILCO Plan, and therefore preclude a finding of reasonable assurance that adequate protective measures can and will be taken in the event of a Shoreham accident, include the following:

A. The organization and management of LILCO/LERO public information operations and the interface of LILCO/LERO with the media was inadequate and ineffective, and the LILCO/LERO spokespersons who presided at the news briefings were not sufficiently skilled and qualified in media relations to perform effectively. For example:

1. The Emergency News Manager announced that news conferences would be started at particular times, but such conferences were repeatedly not held on schedule. For example, the first, third, fourth, fifth, and seventh press briefings on Day 1 of the Exercise were each convened later than the Emergency News Manager had announced.

2. On repeated occasions, the LILCO/LERO spokespersons jousted with reporters, did not respond to reporters' requests, did not accept reporters' constructive criticisms, and did not provide clear, consistent, and accurate information. For example, at the 11:20 a.m. news briefing on Day 2 of the Exercise, in response to a reporter's complaint about the length of EBS messages, LERO's spokesperson simply defended the messages, and without considering the merits of the complaint said the messages were "very carefully prepared" and were "what people want." LILCO's spokesperson said the format had been approved by the NRC "after litigation." At the same news briefing, a reporter complained that LILCO had failed to provide two items of information and a map that had been promised to reporters. And, at the fourth briefing on Day 1, the spokespersons did not know whether the Coast Guard had been contacted and would not address other matters related to the offsite emergency response. The LERO spokesperson did not even attend this briefing until the very end.

3. Between news conferences, LILCO did not post knowledgeable spokespersons at the ENC to maintain liaison with

reporters and respond to their follow-up questions. Only a technical advisor was made available. In a real emergency, there would be large numbers of media representatives with varying degrees of knowledge about what was happening, and there would be constant turnover among the media representatives at the ENC. In such circumstances, LILCO would have to make a sufficient number of knowledgeable spokespersons available to deal with the needs of both the print and electronic media. LILCO did not demonstrate the capability to do so during the Exercise.

Also, in a real emergency, news reports would be generated by countless sources and communicated to reporters at the ENC. There would be misinformation as well as accurate information among the media corps. The failure of LILCO to provide continuing, knowledgeable information, or to offer to meet continually with the media at the ENC, would cause confusion and prevent the ENC from operating effectively. An example of the confusion caused by not posting LILCO/LERO spokespersons between news briefings during the Exercise was demonstrated following the third news briefing. After this briefing, the wind shifted, but reporters did not learn of this fact until nearly an hour later, at the fourth news briefing. Also, inconsistencies between the posted news releases, EBS messages being aired, and news briefings would cause confusion and the spread of misinformation.

B. The ENC was activated at 7:16 a.m. on Day 1 of the Exercise, nearly three hours after the 4:36 a.m. report of the

Unusual Event and more than one-and-one-half hours after LILCO had declared an Alert. The first LILCO/LERO press conference was held at 8:15 a.m., 35 minutes after LILCO News Release No. 4 was issued reporting that a Site Area Emergency was declared and seven minutes after an EBS "broadcast" had declared such an emergency at 8:08 a.m. The first news briefing should have been held more promptly after activating the ENC. In a real emergency, reporters would converge upon the ENC within moments after learning about a Shoreham emergency. Local radio and TV stations would dispatch their crews to the ENC as early as possible, and normal broadcasts would be preempted. National TV morning news shows would include the early developments in their live coverage. In an actual emergency, if the media had to wait from 7:16 a.m. until 8:15 a.m. before LILCO held a news briefing, confusion, speculation, misinformation, and rumors among the media and public would have resulted. This was particularly likely because the only news release posted at the ENC before the 8:15 a.m. news conference was the out-of-date LERO Release No. 1, which announced an Alert condition, rather than the Site Area Emergency that had been in existence since 7:31 a.m.; and because at 8:08 a.m. LERO "broadcast" by EBS the declaration of a Site Area Emergency while reporters at the ENC had still not been informed of it.

C. While LILCO assumes that it would be able to set the agenda and control press briefings, this would not be the case in a real emergency, if LILCO personnel were to conduct themselves

as they did during the Exercise. Because the news releases lagged far behind the actual state of events during the Exercise, and because LILCO did not provide liaison with the media between briefings, the media would have possessed misinformation regarding what was occurring. The LILCO/LERO spokespersons therefore would have been largely forced to spend much time correcting misinformation, and would not have been in a position to focus on presenting clear and concise information.

D. LERO EBS messages were assumed to be repeated every 15 minutes during the Exercise. During the 15 minute intervening times, however, other information -- sometimes conflicting -- was being issued to the public by LILCO through news releases, press briefings, and media interviews. An actual Shoreham accident also would be the subject of live radio and TV reports, interviews, and speculation among experts and laypersons as to what was happening and the implications of the ongoing events. The result would be confusion and speculation caused by conflicts between the EBS messages and live radio and TV reports. LILCO did not take effective actions during the Exercise to prevent such conflicts and to assure that accurate and complete information was given to the media and public; LILCO's actions instead exacerbated the problem because those actions actually contributed to the misinformation being disseminated.

E. Following the February 1986 exercise, the Board concluded that a fundamental flaw existed in LILCO's Plan because LILCO had failed to disseminate timely information to the news

media at the ENC. 27 NRC at 157. An "integral part" of that fundamental flaw was the failure to provide EBS messages promptly to the news media, thus creating the potential for information broadcast by the media to conflict with "official" EBS messages. Id. The June 1988 Exercise revealed that this fundamental flaw still exists. Once again, LILCO personnel were untimely in posting EBS messages for the news media at the ENC. Examples supporting the existence of this continuing fundamental flaw are as follows:

1. Although LILCO released EBS No. 1 declaring an Alert at 6:13 a.m. on Day 1 of the Exercise, and the ENC was activated at 7:20 a.m. on that same day, EBS No. 1 was not posted at the ENC until 7:51 a.m., which was 20 minutes after LILCO had declared a Site Area Emergency. Thus, when posted, EBS No. 1 was already obsolete.

2. News Release No. 3, which contained the EBS message announcing the declaration of a General Emergency, was issued by LERO at 10:26 a.m, nearly one hour after the General Emergency was declared.

3. The ENC did not receive EBS No. 5 from the EOC until 1:52 p.m. on Day 1 of the Exercise, which was after EBS No. 6 was "broadcast" at 1:40 p.m.

4. One hour and 15 minutes elapsed from the down-grading of the emergency classification to the Alert stage (at 9:30 a.m. on Day 3) until the distribution of EBS No. 15, announcing that fact, at the ENC.

5. One hour and 10 minutes elapsed between the "broadcast" of EBS No. 16 at 12:00 p.m. on Day 3 of the Exercise until the distribution of the message itself at the ENC at 1:10 p.m.

F. In a real emergency, the untimeliness of LERO's EBS messages (as discussed in Contention 6) would create major confusion for the media and the listening and viewing public. For example, during the period from 6:13 a.m. to 8:07 a.m. on Day 1 of the Exercise, when LERO was announcing only the existence of an Alert at Shoreham, the media at the ENC would have presumably learned of LILCO News Release No. 4, which was issued at 7:40 a.m. and announced the existence of a Site Area Emergency. And, at 8:02 a.m., LILCO issued News Release No. 5, which stated that the plant "remains in a Site Area Emergency." Thus, news accounts emanating from the ENC during the 15-minute intervals between EBS broadcasts would have relied on the news releases and would have reported that a Site Area Emergency existed. In conflict with this, however, LILCO's EBS broadcasts would have been announcing every 15 minutes that only an Alert existed. Confusion, alarm and speculation would have resulted; LILCO's purported credibility would have been undermined. Moreover, as another example, the public was not informed of the General Emergency by EBS until 10:26 a.m., 58 minutes after the General Emergency had been declared. The public was told every 15 minutes during this 58-minute period that a Site Area Emergency -- which did not threaten offsite releases -- was the

condition at Shoreham, while in fact the most severe accident classification existed. This false information would have misled the public into believing that a less serious accident condition existed than actually was the case. Such false information would have undermined LILCO's credibility, bred hostility toward LILCO, and discouraged the public from following LILCO's recommendations or taking LILCO's statements at face value.

G. During the Exercise, there was inadequate and ineffective coordination between LILCO and LERO. This contributed to LILCO being unable to provide timely and accurate information to the media and public. For example, there were repeated time delays and inconsistencies among LERO news releases, LILCO news releases, ENC press briefings, and the transmission of information to LILCO's District Offices and Call Boards. Moreover, at one news briefing, no LERO representative even showed up, and the reporters' questions concerning offsite response matters could not be answered.

H. The "ENC Log" for Day 1 states, "Sirens sounded at 10:22" and "(Real sirens were sounded)". The ENC logged the "real sirens" because their attempted sounding was a part of LILCO's plan for the Exercise. Of the 89 sirens activated, only 57 actually sounded. LILCO, however, did not disclose this fact to media representatives at the ENC. Instead, LILCO pretended that only two sirens failed and told this to the media and

public. This demonstrated a failure of LILCO to transmit accurate and timely information.

Contention 8: Rumor Control. Under LILCO's Plan, the rumor control function has an important role in responding to an emergency. Absent prompt and accurate response to rumors, inconsistent and conflicting data can become public, making it difficult or impossible to convince people to comply with recommended protective actions.

According to the LILCO Plan, in an emergency the public is expected to call LILCO Customer Relations District Offices and Customer Call Boards to obtain information and ask questions. Plan at 3.8-5; OPIP 3 8.1. The Plan provides, under the heading "Correcting Misinformation," that "LILCO personnel at these locations will be provided with updated press releases. If they cannot answer the inquiry they will call the ENC where a coordinated rumor control point will be manned by representatives from LERO and the Utility." Plan at 3.8-5.

The Exercise results, however, demonstrated that LILCO is incapable of dealing with rumors or responding to inquiries from the public during an emergency. During the Exercise, LILCO employees from several LILCO District Offices and Call Boards responded to simulated inquiries from the public. As demonstrated by the examples set forth below, however, such responses demonstrated LILCO's inability to dispel rumors, to correct misinformation, to provide necessary and accurate

information to the public, to provide such information in a timely manner, or to provide consistent, coordinated, and non-conflicting information to the public. Thus, LILCO failed to comply with 10 CFR §§ 50.47(b)(6) and (7), and NUREG-0654 § II.G.4. LILCO also failed to exercise good judgment in handling rumors and failed to comply with the provisions of its own Plan, or to satisfy ENC Objective 15 and DO Objective 15. Accordingly, ~~the~~ this essential element of LILCO's Plan is fundamentally flawed and the Exercise results preclude a finding of reasonable assurance that adequate protective measures can and will be taken in the event of an accident, as required by 10 CFR § 50.47(a)(1).

The untimeliness and inadequacy of LILCO's responses are of particular concern because the same problems arose during the 1986 Shoreham exercise. While the Board found that the problems existing at that time did not rise to the level of a fundamental flaw (see LBP-88-2, 27 NRC at 162-66), the fact that such problems continue to exist demonstrates that LILCO is incapable of: (1) correcting such problems; (2) providing timely and accurate information to dispel rumors; or (3) training its personnel to promptly and accurately respond to public inquiries. Therefore, LILCO's continuing inability to implement effective rumor control provisions of its Plan rises to the level of a fundamental flaw. Even if this defect in LILCO's Plan were correctable, any such efforts would require extensive retraining

of LILCO personnel and substantial review and revision of LILCO's Plan and procedures.

In addition, LILCO's untimeliness and inadequate responses to rumors constitute a fundamental flaw because the problems contravene the standard established by the Board in LBP-88-2, when it stated:

> We agree with the Staff that Rumor Control personnel should have basic information on radiation, the plant, the EPZ, and the protective action recommendations readily at hand.

27 NRC at 164, n.43. As demonstrated below, LILCO's rumor control response did not meet this requirement, thereby demonstrating a fundamental flaw in LILCO's Plan. Indeed, in a real emergency, the substantial delays in handling and responding to rumors would be likely to result in delaying the public's receipt and response to PARs. The numerous examples which follow reveal that this flaw is pervasive and systemic.

FEMA baldly concluded that "[t]imely and accurate responses were made by rumor-control personnel." FEMA Report at 70. The examples set forth in subparts A and B below directly contest this FEMA conclusion. In reaching its conclusions, FEMA failed to deal with any of the specific examples cited by the Governments. Thus, the FEMA Report provides no basis upon which the allegations of Contention 8 could be disregarded at this early stage in the proceeding. To the contrary, the examples raise serious questions about the correctness of FEMA's conclusions.

A. During the Exercise, LILCO personnel were unable to provide prompt responses to simulated inquiries seeking information about "radiation, the plant, the EPZ, and the protective action recommendations" which the Board has previously found should be "readily at hand." 27 NRC at 164, n.43. Instead, responses were generally delayed by more than 30 minutes, and frequently longer. In the following examples, more prompt answers could and should have been forthcoming.

1. An inquiry whether to leave a particular area was received by a Bellmore operator at 6:35 a.m. on Day 1 of the Exercise; a response was not relayed to the caller until 8:01 a.m.

2. An inquiry about conditions at Shoreham was received at the Hewlett District Office at 6:49 a.m. on Day 1; a response was not relayed to the caller until 7:59 a.m.

3. An inquiry about conditions at Shoreham was received at the Huntington facility at 7:25 a.m. on Day 1; a response was not relayed to the caller until 8:00 a.m.

4. A "customer" heard fire trucks going towards the plant and inquired as to the condition of the plant; his call was received at the Roslyn facility at 7:34 a.m. on Day 1; a response was not relayed to the caller until 8:35 a.m.

5. A caller asked the Hicksville District Office at 8:09 a.m. on Day 1 where pets could be left once the owners left home; a response was not relayed to the caller until 9:35 a.m.

6. An inquiry from a new employee of the Shoreham plant about plant conditions was received by a Roslyn operator at 8:55 a.m. on Day 1; a response was not relayed to the caller until 10:11 a.m.

7. The Roslyn District Office received a call at 11:30 a.m. on Day 1 asking whether the accident at Shoreham was "another Three Mile Island"; a response was not relayed to the caller until 12:40 p.m.

8. An inquiry as to possible danger to unborn children was received by the Port Jefferson District Office at 9:38 a.m. on Day 1; the caller did not receive an answer until 10:58 a.m.

9. The Hewlett District Office, in particular, was consistently untimely in responding to even simple inquiries. The LILCO Plan instructs District Office/Callboard operators to answer questions they receive if the appropriate information is available to them. If this information is not available, they are instructed to forward the question to their supervisor, who is then to send the inquiry to the ENC for an answer. OPIP 3.8.1; EPIP 4-4, § 5.2.1. The Hewlett operators, however, failed to follow this procedure. Instead of forwarding inquiries they were unable to answer promptly to the ENC, they retained the inquiries for long periods of time (often up to an hour or more), and then answered the questions. In light of the absence of ENC involvement, there was no justification for these delays.

B. During the Exercise, rumor control personnel were unable to provide satisfactory and reasonable advice or information to simulated public inquiries. Instead, such personnel frequently provided inaccurate or insufficient information or demonstrated poor judgment in responding. For example:

1. At 7:20 a.m. on Day 1, the Riverhead District Office received a call from a customer in Zone "S" who wanted to know if she should evacuate. She was not informed about the status of plant conditions at Shoreham, the status of the emergency or the current PAR, even though LBP-88-2 requires rumor control operators to have such information readily at hand. Rather, she was told simply to "listen to your Emergency Broadcast Radio." The same response, again without elaboration, was apparently given to a 7:40 a.m. caller inquiring about the condition of the plant.

2. At 8:12 a.m. on Day 1, a Hewlett Callboard operator described the status of the plant as "Alert." A Site Area Emergency had been in effect, however, since 7:31 a.m.

3. At 10:35 a.m. on Day 1, a Hewlett Callboard operator informed a customer that travel to Brookhaven Laboratory would be safe since no radiation had been released. This advice demonstrated poor judgment. Indeed, only nine minutes earlier, LILCO had issued an EBS message calling for evacuation of an area including Brookhaven Laboratory. Brookhaven Laboratory is situated very close to the Shoreham plant and thus, persons

traveling to that facility would be closer to danger in the event of a possible release.

4. At 11:30 a.m. on Day 1, a Patchogue operator informed a caller that there had not been a release of radiation. That information was plainly wrong, as a release had commenced at 11:00 a.m.

5. At 12:36 p.m. on Day 3, Port Jefferson received a call from a customer in Zone J who wanted to know why he had not heard any sirens in his area. First, the operator told him that Zone J was supposed to evacuate, and then told him that they would call him back to give him the information he requested about the sirens. One hour later, at 1:53 p.m., the customer was informed that the sirens in his area would be checked at a later date. This response showed bad judgment. The caller should have been told to evacuate and not given the suggestion that it was safe to wait for a return telephone call one hour later.

The Babylon District Office received a call with the same inquiry at 12:40 p.m. Again, one hour later (at 1:49 p.m.), the customer was told the sirens would be checked later. This time, however, there was not even any mention of the fact that the customer should have evacuated.

Contention 9: The Public Would Reject LILCO's Flawed EBS Messages as a Primary Source of Information. The LILCO Plan is premised on the assumption that timely, clear, authoritative and unambiguous EBS messages will be the primary means by which the

public will be informed of an accident and given recommendations as to what protective actions are advisable. In Contentions 6-8 above, the bases for such an assumption are demonstrated to be false.

The facts set forth in support of the foregoing contentions also establish a further fundamental flaw in LILCO's Plan. LILCO assumes, and it is an essential element of LILCO's Plan, that EBS messages will be broadcast in a timely manner and thus will constitute the primary source of emergency information to the public. The Exercise revealed that, far from being a primary source of information, LILCO's EBS messages lagged far behind actual events, and far behind the media.

For example, the Site Area Emergency was declared at the EOC at 7:33 a.m. on Day 1 of the Exercise. The LERO EBS message conveying of this information was not broadcast until 8:10 a.m.; prior to that time, EBS No. 1, containing much different information, was LERO's official communication to the public. The news media at the ENC, however, knew soon after 7:33 a.m. that a Site Area Emergency had been declared. It is inevitable that the media would immediately have begun to communicate this information to the public -- long before EBS No. 2 was broadcast at 8:08 a.m. -- and thus the media would have been conveying information inconsistent with the information in the official LERO communication (EBS No. 1). Therefore, contrary to the basic assumption of the LILCO Plan, EBS No. 2 would have been issued after conflicting information (news media reports vs. EBS No. 1)

had been broadcast for some time. As a result, EBS No. 2, when issued, would have been viewed as a belated attempt by LILCO to provide information that the news media had already published. The LERO EBS simply would not have been viewed as an authoritative source of information.

This same pattern existed throughout the Exercise. The LERO EBS messages were consistently slow in being issued, resulting in the media having access to and (in the real world) broadcasting information substantially before the broadcast of EBS messages. In each case, the media's broadcasts would inevitably conflict to some degree with LERO's existing EBS message, which would still be the "current" LERO official announcement. This reflects a fundamental flaw in LILCO's Plan: the assumption that LERO EBS messages would be viewed as the first line, authoritative statement issued regarding accident matters is without basis. Those messages would be so delayed that the public would choose to rely on the media for information. In a real emergency, LILCO's inability to convey prompt, non-conflicting information would be likely to result in delays in the public's receipt of, and response to, PARs. For the reasons set forth in Contentions 6-8 above, there is no basis to believe that LILCO is capable of correcting this flaw in its Plan.

Contention 10: Evacuation Shadow Phenomenon. In its Partial Initial Decision on Shoreham emergency planning issues,

the Licensing Board ruled with [illegible] to the evacuation shadow phenomenon that:

> The Board's finding on this contention strongly depends on there being clear non-conflicting notice and instructions to the public at the time of an accident. If for any reason confused or conflicting information was disseminated at the time of an accident the Board accepts that a large excess evacuation on Long Island could materialize.

LBP-85-12, 21 NRC 644, 670 (1985). In issuing its opinion on the results of the February 1986 exercise, this Board accepted that pronouncement as the law of the case. Finding that LILCO had in fact issued confusing and conflicting information during the exercise, this Board reasoned as follows:

> That finding brings the PID's conclusion that an excess evacuation could occur into play. In such an event, a controlled evacuation, which is required by the Plan, probably could not be achieved. Thus, we conclude that a fundamental flaw was demonstrated.

LBP-88-2, 27 NRC at 173 (footnote omitted).

As demonstrated by the Governments' contentions concerning LILCO's inability to convey clear, timely, accurate and concise information to the public, the media, and government "officials" (see e.g., Contentions 4-8) the Exercise confirms that a large evacuation shadow is likely to occur in the event of an actual Shoreham accident. Under such circumstances, an essential element of LILCO's Plan as exercised, a controlled evacuation, could not be achieved. LILCO's Plan, however, does not account for such a large evacuation shadow and LERO's ability to handle such conditions was not tested during the Exercise. Indeed, LERO assumed during the Exercise that there was no evacuation shadow.

Given the fact that a similar flaw was demonstrated in the 1986 exercise, any LILCO effort to correct this flaw, if it is correctable, will require substantial revision of LILCO's Plan and procedures to take the evacuation shadow phenomenon into account. Accordingly, the fundamental flaw found by this Board in LBP-88-2 continues to exist, clearly precluding a finding of reasonable assurance that adequate protective measures can and will be implemented in the event of a radiological emergency at Shoreham, as required by 10 CFR § 50.47(a)(1).

V. Contentions 11-12: Fundamental Flaws Relating to Protective Action Recommendations

Contention 11: Ingestion Pathway PARs. The Exercise demonstrated a fundamental flaw in an essential element of LILCO's Plan in that LERO failed to recommend timely and appropriate protective actions relating to the ingestion pathway. LILCO thus demonstrated a failure to comply with 10 CFR §§ 50.47(b)(6), (7), (9), and (10), 10 CFR Part 50, Appendix E, § IV.F.1, and NUREG-0654, §§ II.F, G.1 and J.11. The bases for this contention are discussed in subparts A-E below.

LILCO recommended ingestion PARs for the first time on Day 3 of the Exercise. FEMA found that LILCO was untimely in issuing ingestion PARs at that time; according to FEMA, such PARs should have been issued no later than Day 2. FEMA Report at 51. As discussed below, however, ingestion pathway PARs should have been issued on Day 1. At any rate, LILCO's

untimely issuance of ingestion PARs compels a finding that LILCO failed to comply with the foregoing regulatory standards and failed to satisfy EOC Objectives 3, 4, 13, 29, 30, and 37. This fundamental flaw in LILCO's Plan precludes a finding that adequate protective measures can and will be taken in the event of a radiological emergency at Shoreham, as required by 10 CFR § 50.47(a)(1). Before setting forth the specific bases for this contention, certain background facts warrant discussion.

At approximately 7:33 a.m. on Day 1 of the Exercise, LERO declared a Site Area Emergency, resulting in an automatic ingestion pathway PAR to place dairy animals within two miles of the Shoreham plant on stored feed. FEMA Report at 39-40; OPIP 3.6.6, § 5.1.1.1.b. This advisory was "broadcast" to the public in EBS No. 2, at 8:08 a.m. FEMA Report at 40. The LILCO Plan requires the PAR for dairy animals to be increased to 10 miles in the event that a General Emergency is declared (OPIP 3.6.6, § 5.1.1.1.c) and, accordingly, the public was "advised" of this increased ingestion PAR at 10:26 a.m. on Day 1 via EBS No. 3. FEMA Report at 40. At the same time, LERO decided to evacuate persons from Zones A-J, O, P, and S and to shelter persons in Zones K, L, M, N, Q, and R. Id.

On Day 1, LILCO predicted that EPA PAG levels for the plume EPZ would be exceeded during the "accident." Indeed, no later than 12:11 p.m. on Day 1, when EBS No. 4 was issued, LILCO projected radiation doses beyond the Shoreham site boundary in excess of EPA PAGs requiring protective actions. FEMA Report at

45. Such a prediction of plume EPZ doses in excess of the PAGs continued at least until 5:52 p.m. on Day 1, when EBS No. 7 was issued. Id.

LILCO's predictions were confirmed by actual field measurements taken on Day 1. Field monitoring data logs reveal that there were large readings of Beta radiation taken between 5:00 p.m. and 5:35 p.m. at locations between seven and 10 miles east of the Shoreham plant. Thus, HP-270 survey instrument showed readings of 50,000 cpm with the Beta window open and 7200 cpm with the Beta window closed. These high readings indicated the strong presence of Beta radiation -- most likely iodine. At the same time, smear samples of the deposited material were showing readings of 470 to 2100 cpm, indicating the presence of particulate deposition at each of the measurement locations between seven and 10 miles east of the plant. Readings of this magnitude at 10 miles from the plant indicate that iodine and particulate contamination beyond 10 miles was almost a certainty.

Furthermore, while normal weather conditions were assumed during Day 1 of the Exercise, rain was assumed to have fallen between Day 1 and Day 2. FEMA Report at 30-31. This assumption regarding rain increased the likelihood of the need for ingestion PARs because rain can lead to increased levels of surface contamination and may require protective actions at greater distances or increased restrictions on the food chain. Other

assumptions also were made to increase the need for ingestion PARs. See FEMA Report at 30-31.

Except for the automatic ingestion pathway PARs for dairy animals referenced above, it was not until EBS No. 17 was "broadcast" on Day 3,[2/] at 12:50 p.m., that LILCO issued a further ingestion pathway PAR. ~~With these facts as background, the bases for this contention include the following:~~

The following numerous examples of LILCO's inability to issue timely and appropriate ingestion pathway PARs reveal that this defect in LILCO's Plan is pervasive and systemic. Even if correctable, any such efforts would require extensive retraining of LILCO personnel and substantial review and revision of LILCO's Plan and procedures. Moreover, the delays noted below would, in a real emergency, delay the public's receipt of, and response to, appropriate ingestion PARs.

As noted above, FEMA agreed that LILCO was untimely in the issuance of ingestion PARs. See FEMA Report at 51. FEMA cited LILCO with an ARCA (id. at 55), stating that the delay from Day 2 to Day 3 in issuing ingestion PARs was apparently due to a LERO "management decision to have the dose assessment staff focus on reentry and relocation issues." Id. at 51. FEMA offers no reason, however, why this problem, standing alone, did not

---

2/ According to the FEMA Report, this PAR on Day 3 was actually, with the time leap of the scenario, assumed to be made on June 27, 20 days after the accident started. FEMA Report at 26. However, EBS No. 17 is dated June 10, which would indicate that perhaps the time leap referenced in the FEMA Report had not taken place. This matter will need to be pursued in discovery.

constitute a fundamental flaw. Indeed, it represents a breakdown in good judgment, training and command and control to ignore necessary PAR decisionmaking in favor of recovery measures.

Further, FEMA has not addressed at all the other bases for Contention 11. These bases underscore that LILCO's ingestion pathway decisionmaking was seriously flawed and involved far more than the single error mentioned at page 51 of the FEMA Report. They also directly contest the assertion by FEMA (FEMA Report at 51) that LERO's ingestion PARs "were well thought out." FEMA gives no basis for this conclusion, while Contention 11 provides numerous reasons to doubt its accuracy.

In short, notwithstanding any deference that might normally be given to FEMA's views, the Governments have set forth a strong basis for the rebuttal of FEMA's conclusions, regarding LILCO's ingestion pathway PARs issued during the Exercise.

With this background, the bases for Contention 11 can now be set forth:

A. LILCO's failure to issue ingestion pathway PARs until 12:50 p.m. on Day 3 of the Exercise was untimely. Under the conditions present during the Exercise, it was incumbent upon LERO personnel to develop and issue ingestion pathway PARs to the public at a much earlier time. LILCO personnel knew by approximately noon on Day 1 that at least portions of the 10-mile EPZ were predicted to have radiation levels in excess of the PAGs for plume exposure protective actions. FEMA Report at 45.

Further, actual field readings taken on Day 1 indicated Beta readings greater than 400 cpm, far beyond the plant. Under LILCO's Plan, such readings required ingestion pathway PARs to be issued, especially since the readings indicated the presence of particulates. OPIP 3.6.6, § 5.2.2.

In addition, conditions existing on Day 2 further indicated a need to issue PARs for the ingestion EPZ. FEMA Report at 51. Indeed, as reported in FEMA control cell documents, by the afternoon of Day 2, LERO knew that there were "hot spots" and that the FDA PAGs had been exceeded 13 miles east of the plant. Nevertheless, LILCO failed to develop any ingestion PARs on Day 1 or Day 2. Thus, it is clear that LILCO was untimely in the development and issuance of ingestion PARs, resulting in a condition whereby the public faced increased radiation risk due to the lack of PARs.

B. LILCO not only failed to develop and broadcast ingestion PARs prior to the issuance of EBS No. 17 at 12:50 p.m. on Day 3 of the Exercise, but it also failed even to alert persons more than 10 miles from Shoreham of the potential for ingestion risks, thus demonstrating a failure to exercise the "sound judgment" (OPIP 3.6.6, §) that is essential on ingestion matters. Indeed, LILCO's EBS messages conveyed virtually no ingestion pathway concern or awareness for persons beyond 10 miles from Shoreham prior to Day 3. For example, EBS No. 8, "broadcast" early on Day 2, sta that persons more than 10 miles from Shoreham have "no reason to take any action"

because radiation "beyond the 10-mile Emergency Planning Zone will be below the U.S. Environmental Protection Agency's guidelines for doses requiring protective action." (Emphasis added.) EBS No. 10, issued at 11:35 a.m. on Day 2, EBS No. 10A issued at 3:35 p.m. on Day 2, and EBS Nos. 15 and 16 issued on Day 3, contained similar statements. LILCO had no basis to make such categorical assertions; indeed, data available to LILCO indicated ingestion zone PAGs had been exceeded on Day 2. FEMA Report at 51. At a minimum, given the seriousness of the accident postulated, persons more than 10 miles from Shoreham should have been told to use caution -- e.g., washing local vegetables very carefully. And, LILCO should have corrected the erroneous and misleading statements contained in EBS messages issued throughout the Exercise. Instead, LILCO, exercising poor judgment and reflecting bad training, told the public beyond 10 miles from Shoreham to exercise no caution at all.

C. LILCO EBS messages improperly sought to minimize the likelihood of any ingestion hazard. For example, EBS No. 2 recommended placing animals within two miles of Shoreham on stored feed. LILCO said it was making that recommendation because it was "required" to do so by "NRC regulations." The statement then was followed by the assertion:

> This does not mean that a release of radiation has occurred. This does not mean that a release of radiation will occur.

These statements tended to understate the possible seriousness of the developing accident, to imply that LILCO was making the PAR

only because of a regulation and not because of any potential health hazard, and to reflect LERO's failure to exercise sound judgment regarding ingestion matters. OPIP 3.6.6, § 1. Similar misleading statements were contained in EBS No. 3, issued at 10:55 a.m. on Day 1 of the Exercise, and in virtually all later messages (see EBS Nos. 4, 5, 6, 7, 8, 15, and 16).

LILCO's minimization of the potential hazard to the public continued in EBS No. 17. At that point (Day 3, 12:50 p.m.), LILCO finally issued an ingestion PAR in response to radiation levels above the PAGs outside the 10-mile EPZ. Yet, even then, LILCO's PAR was issued only "as a precaution," again minimizing the potential harm to the public.

D. Despite the fact that Zones A-J, O, P, and S had been directed to evacuate at 10:26 a.m. on Day 1 of the Exercise, despite knowing by noon on Day 1 that portions of those zones were predicted to have radiation readings in excess of plume EPZ PAG levels, despite knowing that readings far in excess of 400 cpm had been measured within the EPZ, and despite knowing that some persons within those zones would not evacuate despite being urged to do so, LILCO never specifically advised such persons to take any ingestion pathway precautions (such as care concerning drinking water, washing local vegetables, closing windows and doors, etc.), except for the advisory to place dairy animals on stored feed. Indeed, even when an ingestion PAR finally was issued on Day 3 (EBS No. 17), it was not clear whether it applied to those specific zones which had previously

been advised to evacuate. As persons in these zones were in an area where exposure to radiation was likely, and particularly since the areas east of Shoreham have a high concentration of agriculture activities, it was essential that detailed ingestion advice be developed and provided to this population.

E. The LERO EOF recommended a Site Area Emergency at 7:31 a.m. on Day 1 of the Exercise and the LERO EOC accepted that recommendation at 7:33 a.m. on Day 1. FEMA Report at 39. It was not until 8:08 a.m. on Day 1, however, that the LERO EOC issued to the public the automatic protective action (OPIP 3.6.6, § 5.1.1.1.b) to place dairy animals within two miles of Shoreham on stored feed. FEMA Report at 40. LILCO thus demonstrated a fundamental flaw in its decisionmaking capability by failing to take prompt action to recommend sheltering dairy animals within two miles of Shoreham. Since this was an automatic protective action that should have taken no "thinking" in order to implement it, LERO personnel should have immediately made that protective action recommendation to the public as soon as the Site Area Emergency was declared. Similar unjustified delays were evidenced at the General Emergency level, when LILCO failed to recommend promptly the expansion of the dairy advisory to 10 miles, as required by OPIP 3.6.6, § 5.1.1.1.c.

Contention 12: Plume Exposure Pathway PARS. The Exercise demonstrated a fundamental flaw in the LILCO Plan in that LERO

personnel were untimely in making PARs for the plume exposure pathway, made inappropriate recommendations in violation of 10 CFR §§ 50.47(b)(6),(7),(9) and (10) and NUREG-0654 §§ II.F, G and J.10, failed to amend emergency broadcasts containing PARs in a timely manner, and failed to satisfy EOC Objective 18. As reflected by the numerous regulatory requirements cited above, and the fact that the issuance of timely and adequate PARs was specifically made one of the objectives of the Exercise, it is plain that the ability to issue plume exposure pathway PARs is an essential element of LILCO's Plan. LILCO's continued, pervasive and systemic failure to issue such PARs on a timely and accurate basis during the Exercise, demonstrates a fundamental flaw in LILCO's Plan. Thus, the Exercise precludes a finding of reasonable assurance that adequate protective measures can and will be taken in the event of a Shoreham accident, as required by 10 CFR § 50.47(a)(1).

This defect in LILCO's Plan is not readily correctable. Rather, any efforts to cure this defect will necessarily require extensive retraining of LILCO personnel, and substantial review and revision of LILCO's Plan and procedures. In a real emergency, LILCO's inability to issue timely and accurate PARs, or to make timely amendments to PARs, would have a negative effect on the public's receipt of, and response to, such PARs. For example, the delay in the evacuation advisory (subpart A below) meant that there were only about 34 minutes between "broadcast" of the PAR and the radiation release at 11:00 a.m.

An earlier issuance of the PAR would have increased time for persons to evacuate prior to the release.

The plume exposure PAR problems reflected in Contention 12 cannot be dismissed or disregarded on the basis of any data in the FEMA Report. For example, subpart A below concerns the delay in issuing the initial evacuation PAR. The FEMA Report never addresses whether this PAR was delayed, given the data which were available. Thus, the Report provides no basis to reject that subpart.

Subpart B concerns LERO's erroneous school PAR early on Day 1 of the Exercise. The FEMA Report is silent on this issue, even though a FEMA control log demonstrates that a FEMA controller believed that LERO personnel had erred. Similarly, the errors in subparts C-F raise matters which FEMA essentially ignored in its Report. Accordingly, the FEMA Report provides no basis to reject Contention 12 or any of its subparts. Rather, Contention 12's subparts, individually and collectively, make a strong prima facie rebuttal of FEMA's conclusions, requiring admission of the contention. See ALAB-903, slip op. at 12.

The bases for ~~this~~ Contention 12 include the following:

A. On Day 1 of the Exercise, the EOF recommended at 9:34 a.m. that particular zones in the plume exposure EPZ be evacuated and that particular zones in that EPZ be sheltered. This recommendation was received by the LERO EOC at 9:37 a.m. Nonetheless, it was not until 10:20 a.m. that the LERO EOC decided to accept these recommendations and it was not until

10:26 a.m. that the public was notified of these crucial recommendations. FEMA Report at 40. There was no justification for this delay in the critical decisionmaking process related to plume exposure pathway PARs. See Contention 5. A similar unjustified delay with respect to LILCO's declaration of a Site Area Emergency PAR also occurred. See Contention 5.

B. In EBS No. 1, issued at 6:13 a.m. on Day 1 at the Alert stage of the Exercise, LERO recommended that schools within the EPZ implement their early dismissal plans. This PAR was untimely. See Contention 5. Further, this recommendation was inappropriate and issued contrary to LILCO Plan provisions. The Plan provides that the canceling of schools is the appropriate recommendation to be issued at the Alert or higher classification level if schools are not in session but will be in a few hours. OPIP 3.6.1. Recognizing early dismissal to be an inappropriate PAR, a FEMA controller simulating a government "official" informed the LERO Director of Local Response that LERO should instead advise schools not to open. Nevertheless, LERO continued to issue the early dismissal recommendation and simulated the early dismissal of EPZ schools, except the Rocky Point School District. LERO even dispelled a "rumor" that children residing within five miles of the Shoreham plant should remain home, rather than attending school, by issuing a statement that schools should early dismiss (implying that those students should not remain home, but instead, should travel to school and then back

home again pursuant to implementation of early dismissal). Such a recommendation defies logic.

By advising early dismissal rather than simply recommending schools not to open, LERO not only violated the LILCO Plan provisions concerning appropriate school PARs, but also needlessly exposed school children, a segment of the population particularly sensitive to the harmful effects of radiation, to potential dose exposure.

C. Evacuation for certain zones of the 10-mile EPZ was recommended at 10:26 a.m. on Day 1 of the Exercise. Yet, despite knowing that some persons would choose not to evacuate and despite being urged to do so, it was not until EBS No. 10 was "broadcast," at approximately 11:35 a.m. on Day 2, that LILCO issued any PAR for persons who were in the evacuating zones who had decided not to evacuate.

D. In EBS No. 4, issued at 12:11 p.m. on Day 1 of the Exercise, LERO advised persons from the evacuated zones to go to LILCO reception centers. LERO personnel had already determined the need for these persons to report to reception centers one hour earlier, but did not promptly amend EBS No. 3 (which was being broadcast at the time the determination was made) to make that need known to the public. Instead, EBS No. 3 continued to be "broadcast" until 12:11 p.m. There is no justification for the delay in providing this PAR to the public. In any event, EBS No. 4 was an ineffective PAR because it did not explain why people should go to the reception centers. See Contention 6.

E. LILCO also was untimely in notifying evacuees of the need to avoid a road impediment in the vicinity of Sheep Pasture Road. This impediment had been reported to the EOC at 11:28 a.m. on Day 1 of the Exercise. Notice of the impediment was not conveyed to the public until EBS No. 4, "broadcast" at 12:11 p.m. on Day 1. Similarly, approximately one hour elapsed between the time that the EOC became aware of a traffic impediment blocking Granny Road and the time that EBS No. 5 was issued advising evacuees to avoid that area. Finally, the EOC was notified of an impediment at Wading River Road and Schultz Road at 12:59 p.m. on Day 1, but the public was not informed of this impediment until EBS No. 6 was issued at 2:40 p.m. Such untimely notification of impediments easily could have caused substantial delays in the evacuation of residents from affected zones, thereby increasing the risk of radiation exposure to this population.

F. The Exercise demonstrated that LILCO is incapable of providing prompt PARs to residents of special facilities (adult homes, nursing homes, and hospitals). EBS No. 3 was issued at 10:26 a.m. on Day 1 of the Exercise. That EBS message specifically mentioned the needs of homebound individuals. However, the message did not mention at all what protective action, if any, was recommended for residents of special facilities.

VI. Contentions 13-17: Fundamental Flaws Relating to Implementation of Protective Actions

Contention 13: Medical Services. The NRC's regulations require that an emergency plan ensure that "[a]rrangements are made for medical services for contaminated injured individuals." 10 CFR § 50.47(b)(12); see also NUREG-0654 § II.L. This requirement applies both to onsite workers and to members of the general public who may become both contaminated and injured during a radiological emergency. See Guard v. NRC, 753 F.2d 1141 (D.C. Cir. 1985). This requirement has been incorporated as an essential element of LILCO's Plan. Plan at 3.7-1 thru 3.7-2; OPIP 4.2.2.

The Exercise results reveal a fundamental flaw in LILCO's Plan arising from LERO's inability to handle contaminated and injured individuals safely and effectively. The medical drills held at Mid-Island Hospital and Brunswick Hospital during the Exercise demonstrated numerous errors, incorrect procedures and inadequate training on the part of many of the medical personnel on whom LILCO relies to provide the specialized treatment which contaminated and injured individuals require.3/ The Exercise results thus revealed that LILCO failed to satisfy FA Objectives 23 and 24, and that the LILCO Plan does not comply with the foregoing regulatory requirements. The existence of this

3/ The scope of the medical drills held during the Exercise was so limited that it is not possible to determine whether a pervasive pattern of errors was established. There were, however, many errors demonstrated during the medical drills which were conducted.

fundamental flaw precludes a finding of reasonable assurance that adequate protective measures can and will be taken in the event of a Shoreham emergency, as required by 10 CFR § 50.47(a)(1). Any attempt to correct this flaw will require extensive retraining of hospital personnel.

Three ARCAs and three ARFIs were identified by FEMA in connection with the medical drills. FEMA Report at 100-101. FEMA provides no discussion as to why a more severe category -- Deficiency -- was not assessed. Based upon the multiple errors which were revealed, however, it must be concluded that in a real emergency, injured, contaminated persons would potentially incur greater injury due to inadequate and delayed treatment. The FEMA Report offers no basis to rule at this early stage that the performance errors revealed during the Exercise were minor or easily correctable. Rather, they reflect fundamental errors which preclude any finding that the injured, contaminated persons would have received adequate treatment.

The errors and other problems which demonstrate the existence of this fundamental flaw include:

A. The only radiation safety officer ("RSO") present at Brunswick Hospital monitored simulated patients too quickly and often held the monitoring probe too far from the patients to detect contamination accurately and effectively. The same improper procedure was used by the RSO to monitor personnel leaving the emergency room. This improper technique could result

in a failure to detect, and therefore contain, contamination. FEMA Report at 99.

B. Contamination control also was inadequate. For instance, potentially contaminated water pooled in a plastic sheet rather than properly being drained away from the patient, thereby risking recontamination of the patient. The patient was also transferred to a clean gurney from a stretcher without first checking the patient's back and the original stretcher for contamination. During the patient exit process, a gurney was removed from the area without first being monitored. In addition, windows left open for ventilation could have produced drafts which would have spread contamination. FEMA Report at 99.

C. LILCO did not provide for a sufficient number of RSOs to be available at the hospitals, thus delaying the monitoring process and creating the conditions which led to the use of hurried and improper monitoring procedures. In fact, as noted in subpart A above, LILCO provided only one RSO at Brunswick Hospital. This RSO was entrusted with the responsibility of conducting all staff exit procedures, in addition to monitoring patients, hospital staff, and the ambulance and its crew. When the sole RSO prepared to exit the radiation emergency area of the hospital, he was improperly monitored. FEMA Report at 99.

D. Since no person assumed the role of an injured and contaminated victim, no person was transported during the LILCO medical drills, and FEMA was unable to evaluate the performance

of the ambulance crew. FEMA Report at 98. Thus, it is impossible to conclude that LILCO demonstrated any ability to arrange transportation of victims of radiological accidents to medical support facilities, as required by NUREG-0654 § II.L.4.

E. An ambulance driver simulating the transport of a contaminated injured individual to one of the hospitals did not know the location of the radiation emergency area entrance and, once the entrance was found, hospital personnel were not present to remove a barrier to the entrance. Accordingly, the patient's treatment was delayed. FEMA Report at 99.

Contention 14: Schools. NRC regulations require the ability to implement protective actions for schools and other "special" populations. See 10 CFR § 50.47(b)(10); see also, NUREG-0654, § J.10 and App. 4 at 4-3. In ALAB-900, the Appeal Board recognized that school matters constitute a major portion of LILCO's Plan ALAB-900, slip op. at 33-36. Thus, ~~for example, the~~ an essential element of LILCO's Plan provides for protective actions to be taken to safeguard the welfare of the EPZ schools' population in the event of a radiological emergency at Shoreham. Plan at 4.2-1; OPIPs 3.6.1, 3.6.5. The Exercise, however, revealed that the LILCO Plan, as it applies to protection of the school populations is fundamentally flawed. Accordingly, LILCO failed to satisfy FA Objectives 2, 18, and 19 and failed to demonstrate that its Plan complies with the foregoing NRC requirements. The existence of this fundamental

flaw in LILCO's Plan for schools precludes a finding of reasonable assurance that adequate protective measures can and will be taken in the event of a Shoreham accident, as required by 10 CFR § 50.47(a)(1).

The numerous examples set forth below demonstrate a systemic inability to protect the EPZ school population. It is evident that any attempts to correct this flaw will require both extensive retraining of LILCO personnel and substantial review and revision of LILCO's Plan and procedures. This particularly is the case since LILCO was on notice of the need to demonstrate school preparedness and undoubtedly conducted numerous drills and practice sessions prior to the Exercise. The Exercise revealed, however, that these efforts have been unsuccessful, making it questionable whether these matters (with the possible exception of subpart E) can be corrected.

FEMA appears to be satisfied that LILCO's school preparedness was demonstrated. FEMA Report at 105-106, 110-11. However, many of the problems set forth in Contention 14 are not addressed in the FEMA Report (subparts A, B, F and G). For the others, there is no indication why FEMA, looking at the problems as a whole, failed to find the problems to be serious. The Governments allege that the problems set forth in Contention 14's subparts, taken collectively, demonstrate that LILCO's school plan contains multiple flaws, making it impossible to conclude that adequate protective measures can and will be taken.

Specific factual disputes have thus been created which require admission of the contention.

The bases for ~~this~~ Contention 14 include the following:

A. The LILCO Plan provides for LILCO to provide bus drivers to assist in the evacuation of the schools in a single wave. OPIP 3.6.4 at 2b-2d. Thus, after reporting to staging areas, LERO bus drivers are required to report to designated school bus companies where they are provided with assignment packets containing their school assignments, dosimeters, KI tablets, emergency worker dose record forms, emergency worker badges, bus lease receipt forms, maps describing the predesignated routes to the schools, maps describing the routes to the school relocation centers, maps describing the routes to the EWDF, and other documents. OPIP 3.6.5, Att. 14. According to the LILCO Plan, such assignment packets are to be stored in "LERO boxes" and either pre-positioned at the school bus companies or delivered to the bus yards by one of the LERO bus drivers at the time of the Shoreham emergency. OPIP 3.6.5, Att. 4. As a practical matter, no evacuation of school children pursuant to the LILCO Plan can take place without the information and supplies contained in the packets.

During the Exercise, however, there were no such packets at many school bus companies and bus yards, thus preventing drivers from carrying out any school-related duties and forcing the LERO school bus drivers to return to their staging areas to await further instructions. In fact, it appears that the bus drivers

were not redeployed. In the event of an actual radiological emergency at Shoreham, the inability to implement an evacuation of schools, or delays in implementing an evacuation of schools, caused by the failure to make school assignments, route information and dosimetry supplies available to bus drivers, would pose a serious health and safety risk to the school children within the EPZ. Under such circumstances, drivers could not be deployed and LILCO's Plan could not be implemented. LERO personnel exhibited no ability to deal with this unanticipated situation.

B. During the Exercise, LILCO issued an EBS message at 5:52 p.m. on Day 1 advising EPZ residents with children attending schools located outside the EPZ that children not retrieved by parents at the schools had been taken to the Nassau County Coliseum "under school supervision". There are, however, no Plan provisions to handle this contingency. While LILCO simulated that an estimated 11,000 students required transportation, the Plan reveals no pre-planning to assure that buses and drivers are available to provide such transportation or that these children will be adequately supervised either while in transit or once relocated. Instead, the Plan provides only that these students are to be retained at school at the end of the day. OPIP 3.6.1 at 31a. The Exercise revealed that this is a significant aspect of LILCO's Plan, but it was neither developed before the Exercise, nor implemented during it.

C. According to the Plan, LILCO bus drivers are required to drive school children out of the EPZ using pre-designated evacuation routes which apparently have been chosen by LILCO to expedite evacuation times for school children. A significant number of LILCO bus drivers, however, ignored their designated routes and decided to take other routes without prior approval and without notifying LERO of the unplanned route deviation. FEMA Report at 111-12. While there may be instances where deviation from prescribed routes would be appropriate (for instance, to avoid a traffic impediment), failure to follow the prescribed routing scheme in most instances is likely to lead to increased evacuation times for school children, thereby heightening the threat of increased radiation doses for such children. Further, once "off course," LERO would no longer be able to trace the route of school buses or control or monitor traffic volumes or monitor the relationship of school evacuation routes to other evacuation routes. FEMA Report at 111.

D. During the Exercise, LERO simulated the protective action of evacuation of the Rocky Point School District schools. This simulation was fraught with problems. First, between 7:31 a.m. and 10:39 a.m. on Day 1 of the Exercise, no protective action was implemented for Rocky Point students. Once underway, the simulated evacuation took almost seven hours to complete, including one-and-one-half hours for the children to travel from the Nassau County Coliseum to LILCO's Hicksville facility. As a FEMA controller noted, this delay was excessive. Once at the

Coliseum, another 50 minutes elapsed before parents were informed in EBS No. 7 that their children could now be retrieved.

Further, LILCO failed to contact or simulate contact with the Rocky Point schools to ascertain whether assistance would be needed to evacuate handicapped students, as required by OPIP 3.6.5, Att. 11. Untimely deployment of school bus drivers also needlessly delayed the evacuation of the Rocky Point schools, thereby increasing the time students attending those schools spent in the EPZ. Although school bus drivers were tc report to staging areas by 9:10 a.m., bus driver deployment was not completed until over two hours later, at 11:15 a.m. FEMA Report at 106.

E. The Exercise revealed that not all the school buses which LILCO intends to use to evacuate school children are equipped with two-way or even AM/FM radios. See FEMA Report at 108. Without radios, LILCO bus drivers would not be able to hear any notification regarding emergency conditions while en route and would be unaware of accidents or other such traffic impediments, which could unnecessarily delay the evacuation of the school children and lead to potentially increased radiation doses. Moreover, should a bus deviate from its assigned route, LERO would be unable to contact that bus and ascertain its actual location.

F. LILCO also failed to demonstrate how school children taken to relocation centers would be cared for or supervised.

G. In some instances, LERO bus drivers reporting to certain bus yards were told that no buses were available. This demonstrated that LILCO cannot rely upon the bus companies to supply buses in the event of an actual emergency at Shoreham.

H. The maps provided to school bus drivers were inaccurate. FEMA Report at 111.

Contention 15: Traffic Impediments. The LILCO Plan provides that in the event an evacuation is recommended, evacuees will be advised to follow pre-designated routes out of the EPZ. An essential element of LILCO's Plan is to keep traffic flowing along those routes and to identify and remove any impediments which might occur during an evacuation. See Plan at 3.6-6 thru 3.6-7; OPIP 3.6.3; Appendix A. However, one of the fundamental flaws found in LILCO's Plan as a result of the February 1986 exercise was LILCO's inability to respond to simulated traffic impediments promptly or effectively. See LBP-88-2, 27 NRC at 97-121. Specifically, LILCO's responses to the impediments were untimely, disorganized, and ill-conceived.

In the 1988 Exercise, LILCO's ability to respond to such impediments once again was tested; and, once again, LILCO failed the test. During the Exercise, LILCO "road crews" did not respond to certain impediments in a timely manner and traffic was incorrectly rerouted. FEMA assessed an ARCA for this deficient performance. FEMA Report at 89, 90. However, given the similarity of this problem to problems in 1986 and thereafter

this problem should have been considered part of a fundamental flaw in LILCO's ability to respond to impediments.

LILCO's inadequate response to the traffic impediments simulated during the Exercise cannot be characterized as simply the result of a single person's failure. See ALAB-903, slip op. at 7-8. The LILCO Plan has no adequate backup provisions to avoid the kinds of problems revealed during the Exercise or to correct such problems once they occur. Rather, such problems were the result of miscommunications, inadequacies in LILCO's training program, and basic flaws in LERO's command and control structure. Thus, for example, there was no indication during the Exercise that other members of LERO questioned the inadequate and inappropriate actions taken by the LERO personnel who responded to the impediments.

Accordingly, LILCO failed to satisfy FA Objective 20, and demonstrated its lack of compliance with 10 CFR § 50.47(b)(10), and NUREG-0654 § II.J.10.k. The continuing existence of this fundamental flaw indicates that LILCO is incapable of correcting it. But, even if this flaw could be corrected, it would require extensive retraining of LILCO personnel and substantial review and revision of LILCO's Plan and procedures. This fundamental flaw also precludes a finding of reasonable assurance that adequate protective measures can and will be taken in the event of a Shoreham emergency, as required by 10 CFR § 50.47(a)(1). Examples of this continuing fundamental flaw are as follows:

A. As was the case in the February 1986 exercise, the 1988 Exercise demonstrated that LILCO cannot respond to impediments in a timely manner. See LBP-88-2, 27 NRC at 115-16. At 12:00 noon on Day 1 of the Exercise, a FEMA controller inserted a free-play message into the Exercise describing a simulated accident in which a large moving van, having struck a utility pole, was lying on its side on Granny Road, blocking all traffic and leaking diesel fuel. LILCO road crews reported to the wrong intersection, however, and did not reach the proper location until 1:15 p.m. -- one hour and 15 minutes after the impediment was first reported. This delay in responding to the impediment demonstrated that LILCO is still incapable of providing a reliable and prompt response to traffic impediments.

B. The 1986 exercise also demonstrated that LILCO cannot effectively reroute traffic away from an impediment. LBP-88-2, 27 NRC 116-18. This same problem arose again during the 1988 Exercise with respect to another impediment involving two automobiles and a trailer carrying eight horses. A LILCO traffic guide was assigned to direct traffic away from the impediment. He failed to do so, however, and instead directed traffic directly toward the impediment. See FEMA Report at 89. This confirmed that LILCO continues to be unable to respond appropriately to traffic impediments and that LILCO cannot correct this fundamental flaw in its Plan.

C. LILCO was also untimely in communicating the existence of certain impediments to the public. See Contention 6.

Contention 16: Access Control. The LILCO Plan provides that after an evacuation has been completed, personnel will be positioned around the evacuated areas to prevent access to those areas. OPIP 3.10.1 at 3. This is an essential element of LILCO's Plan which is required by 10 CFR § 50.47(b)(10) and NUREG-0654 § II.J.10 and which was tested during the Exercise pursuant to Objective 20 of FEMA Guidance Memorandum EX-3. The Exercise demonstrated, however, that LILCO's Plan is fundamentally flawed because it does not provide adequate guidance as to where such personnel should be located. As a result of this defect in LILCO's Plan, it took many hours after the end of the evacuation period to prepare and approve an access control plan. In an actual emergency, such a delay could have serious consequences for the public health and safety, since some people might attempt, either inadvertently or purposely, to enter evacuated (and possibly contaminated) zones. During the Exercise, the absence of pre-designated access control points also led to confusion concerning the Day 2 decision to "unshelter" the portions of the EPZ for which sheltering had been the initial protective action recommendation, in that such action without adequate control of access points to evacuated subzones posed risks to the "unsheltering" population. See FEMA Report at 47.

In addition, when questioned by FEMA evaluators, LERO personnel also exhibited a lack of understanding concerning who

should be allowed access to evacuated areas and what areas were specifically restricted. LILCO's failure to provide adequate access control demonstrates that it did not satisfy EOC Objective 20 or FA Objective 20, and that its Plan fails to comply with 10 CFR § 50.47(b)(10). Accordingly, there can be no finding that adequate protective measures can and will be implemented, as required by 10 CFR § 50.47(a)(1). Even assuming that LILCO can correct this flaw, it will require extensive review of the LILCO Plan and procedures, analysis of the EPZ and subzone perimeters, and additions of plans for providing access control under different evacuation scenarios. Thus, this defect is not readily correctable.

Contention 17: Monitoring and Decontamination of Public and Emergency Workers. NRC regulations require the ability to provide monitoring and decontamination facilities for the public. 10 CFR § 50.47(b)(10); NUREG-0654 § II.J.12. The LILCO Plan has incorporated this essential element of emergency planning by providing ~~provides~~ that persons from evacuated areas who may have been contaminated will be advised to report to "reception centers" for monitoring and, if necessary, decontamination. Plan at 4.2-1; OPIP 4.2.3. Likewise, NRC regulations require facilities for monitoring and decontaminating emergency workers. 10 CFR § 50.47(b)(10); NUREG-0654 § II.K. For this purpose, LILCO has established an Emergency Worker Decontamination Facility ("EWDF"), to which emergency workers

must report following completion of their duties. Plan at 3.9-1; OPIP 3.9.2 at 3. The Exercise, however, revealed that LILCO is not capable of providing timely and effective monitoring and decontamination of the public or emergency workers. Rather, as set forth below, LILCO was untimely in recommending that members of the public report to reception centers, and it employed improper monitoring and decontamination procedures. LILCO's inability to provide adequate monitoring and decontamination services is a fundamental flaw which is in violation of the foregoing NRC regulations and fails to satisfy FA Objective and EWDF Objective 25. Accordingly, there can be no reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at Shoreham, as required by 10 CFR § 50.47(a)(1).

As demonstrated in the examples below, errors by LILCO personnel were numerous and diverse and involved not only the communication of essential information (subpart A) but also defective performance of the simulated monitoring and decontamination functions (subpart B.4). This fact indicates that it will require extensive review and revision of the LILCO Plan and procedures, and substantial retraining of LILCO personnel, to correct this defect -- if it in fact is correctable.

FEMA's review of these matters does not provide a basis to reject this contention. The FEMA Report does not address the problem reflected in subpart A and never explains why the

examples in subpart B do not constitute fundamental flaws. Indeed, taken together, the examples demonstrate that LERO's performance in monitoring and decontamination matters was seriously lacking during the Exercise.

A. As described in Contention 6 above, LILCO failed in EBS Nos. 4-6 to inform members of the evacuating public why they should report to the reception centers until the issuance of EBS No. 7, some seven-and-one-half hours after they were first advised to evacuate. Thus, LILCO failed to explain that evacuees needed to be monitored and, if necessary, decontaminated at the reception centers until EBS No. 7 was issued at 5:52 p.m. on Day 1. In an actual Shoreham emergency, the failure to inform the public of the reasons for going to the reception centers would likely lead to under-utilization of the reception centers (as in fact occurred during the Exercise) and to an increased likelihood that contaminated members of the public would not be decontaminated.

B. LERO personnel failed to follow the Plan and employed incorrect monitoring and decontamination procedures and, as the FEMA Report noted, were inconsistent in their use of contamination control procedures. FEMA Report at 97. These problems existed at all of the LILCO facilities designated for monitoring and decontamination.

1. At the Roslyn reception center, monitoring personnel touched evacuees with survey probes, thus potentially contaminating the probes. In addition, LERO personnel risked

spreading contamination when: a potentially contaminated emergency worker drove a clean vehicle away from the decontamination center without first being monitored; a tag was removed from a bag of contaminated clothing and handed to a person in the "clean area;" and a monitor placed a pen on a potentially contaminated vehicle and then picked it up. Furthermore, most of the LERO workers at Roslyn demonstrated confusion regarding how to read and record thyroid scans. Finally, there was no female decontamination leader present at Roslyn to answer the numerous questions women had for the decontamination leader.

2. At the Hicksville reception center, workers were observed monitoring an individual in the men's clean area with the meter probe closed, thus risking an inaccurate reading. Moreover, a woman was decontaminated by shower three times, even though her reading was "clean" after the second shower. Improper procedures also were used when an evacuee was told to put a clean foot down on a contaminated step-off pad. Finally, Hicksville workers displayed confusion regarding proper recording procedures.

3. At the Bellmore reception center, a contaminated person was sent into the shower without being instructed in proper decontamination procedures.

4. At the EWDF, only about half of the 40 persons that FEMA observed being monitored by LERO workers were monitored within 10 seconds of the 90 second guideline set forth in OPIP

3.9.2 for such monitoring. Monitoring of a substantial number of persons exceeded the guideline by more than one minute. In addition, in some instances, instrument probes were not covered and could have become contaminated.

VII. Contentions 18-19: Fundamental Flaws Relating to Communications

Contention 18: Equipment and Reception Failures. NRC regulations require that LILCO demonstrate that provisions exist for prompt communications between and among emergency personnel and the offsite emergency response organizations. 10 CFR § 50.47(b)(6); NUREG-0654 § II.F. In an attempt to meet this ~~requirement,~~ essential element of emergency planning, LILCO has issued radios to its field workers so that they can communicate with personnel managing the emergency response, and has further installed telephones and other such communications equipment at various facilities from which an emergency will be managed. See Plan, § 3.4; OPIP 3.6.3 at 3d. The Exercise revealed that this communications system is not reliable, as many LILCO personnel were unable to communicate with other personnel due to malfunctioning equipment or other problems with reception or transmission. This pattern of communications breakdowns, which were numerous, widespread and pervasive, constitutes a fundamental flaw, as it would severely impede an adequate response by emergency personnel in the event of an actual emergency at Shoreham. LILCO has therefore failed to satisfy EOC

Objective 4, FA Objective 4 and BHO Objective 4, and it has further failed to comply with the foregoing regulatory requirements, thus precluding a finding of reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at Shoreham, as required by 10 CFR § 50.47(a)(1).

Equipment problems such as those noted below might ordinarily be viewed as day-of-the-exercise type problems which are easily correctable. For Shoreham, however, no such finding is possible. Since the 1986 exercise and the results of the training drills conducted after the 1986 exercise, LILCO has been on notice of the importance of effective communications. The fact that so many equipment-related problems arose in 1988 is illustrative of the failure of LILCO to devote necessary attention to the details of communications. These problems are likely correctable but not easily. Rather, the numerous breakdowns in the LILCO communications system indicate that LILCO must review and revise that system extensively before the communications failures revealed by the Exercise can be remedied. Substantial training of LILCO personnel will also be required.

The fact that FEMA found no deficiency relating to these matters is not dispositive. Not only did FEMA not address many of these problems, the problems it did address were looked at in isolation, rather than collectively. When looked at collectively, the problems addressed in this contention, if

established, would preclude a reasonable assurance finding and require a finding that LILCO's Plan is fundamentally flawed.

Examples of ~~these~~ communications equipment and reception problems during the Exercise were as follows:

A. Some radios issued to traffic guides dispatched out of the Riverhead and Patchogue Staging Areas failed to operate, necessitating the delivery of replacement radios. FEMA Report at 88. Another radio used by one of the field teams also failed to operate properly. Id. at 61.

B. Between 11:00 a.m. and 11:20 a.m. on Day 1 of the Exercise, LILCO lost all radio contact with field workers in the vicinity of Port Jefferson. Heavy static afterward further impeded effective communications and unnecessarily delayed the receipt of the first free-play message and consequently delayed the response to that message. See FEMA Report at 42.

C. LERO field personnel were hampered in attempting to communicate details of an impediment to the EOC because of inadequate coverage of the radio signal. See FEMA Report at 76.

D. Personnel arriving at the scene of another impediment were unable to notify the EOC of the impediment, although such communication was attempted three times. See FEMA Report at 89.

E. At times, radio traffic on the evacuation support communications frequency was so heavy that no further message traffic could be handled. This would have had the potential in a real emergency of delaying the transmission and receipt of priority messages.

F. The Exercise revealed that not all the school buses that LILCO intends to rely upon in an actual emergency are equipped with radios, thus precluding any communication with school bus drivers in those buses. FEMA Report at 108; see also Contention 14.

G. LILCO documents also appear to indicate that the RECS (dedicated) telephone system did not function properly in some instances.

Contention 19: Failure to Communicate Information. The LILCO Plan requires LILCO personnel to communicate effectively among themselves, to other non-LILCO emergency workers, local governments, the public and the media. See e.g., Plan, Figs. 2.2.1, and 3.4.1. The Exercise demonstrated, however, that LILCO's Plan is fundamentally flawed in that much of LERO, and personnel working in support of LERO, are unable to obtain, identify, process, communicate, and transmit essential information and data effectively, accurately, appropriately, and on a timely basis as is necessary to implement the LILCO Plan. Examples of the repeated failures of LERO personnel in communicating emergency information and data during the Exercise are enumerated in subparts A-E below. Collectively and individually, they demonstrate LILCO's lack of compliance with 10 CFR § 50.47(b)(6) and NUREG-0654 § II.F, repeated violations of LILCO's own procedures, and LILCO's failure to satisfy numerous objectives of the Exercise. These failures preclude a finding of

reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at Shoreham, as required by 10 CFR § 50.47(a)(1). The Exercise results further demonstrate that LILCO's communications defects are not readily correctable. Indeed, the fundamental communications problems identified in the February 1986 exercise (see 27 NRC at 110-15) have not been remedied, indicating that LILCO is incapable of correcting those problems. But, even if correctable, the multiple fundamental flaws in LILCO's Plan, and the chronic nature of those flaws demonstrate that such efforts would require extensive review and revision of the LILCO Plan and procedures, and extensive retraining of LILCO personnel. The numerous communications flaws revealed by the Exercise thus preclude a finding of reasonable assurance that adequate protective measures can and will be taken in the event of a Shoreham emergency.

FEMA's findings on the Exercise provide no bar to this contention. FEMA failed to review many of the problems and also failed to review LERO's communications as a whole, even though the 1986 exercise had demonstrated a pervasive communication deficiency. The multiple bases of Contention 19 plead with specificity many reasons to believe that LERO's communications scheme continues to be flawed. An admissible contention has therefore been pled.

The bases for Contention 19 are as follows:

A. The Exercise demonstrated numerous problems with communications to, from and among emergency workers at the staging areas. For instance, many workers failed to attend briefing sessions, and when briefing sessions were attended, the briefings were often inadequate. Furthermore, FEMA observed that staging area personnel ignored current information broadcast over the public address system and did not always know the current Emergency Classification Level. FEMA Report at 72. FEMA also observed that one of the staging areas lacked adequate means for keeping personnel posted on current emergency conditions. Id. In addition, staging area personnel neglected to transmit important information up the chain of communication to the EOC, such as the fact that school bus drivers could not be dispatched because of the lack of LERO assignment packets at the bus yards. See Contention 14.

B. EOC personnel demonstrated difficulty in communicating important information to other emergency facilities and personnel, especially with respect to their communications with the ENC which were frequently untimely and inaccurate. See Contentions 5-9. In a real emergency, the failure to communicate effectively with other emergency facilities and personnel would lead to an uncoordinated and confused emergency response.

C. EOC personnel also demonstrated extreme difficulty in processing and communicating timely, accurate, consistent and concise information to the public. See Contention 6-9. Similarly, ENC personnel failed in many respects in communicating

effectively with the media. Many examples are found in Contentions 6-7. LILCO's inability to communicate emergency information to the media and to the public effectively and in a timely manner would likely lead, in an actual emergency, to a confused public response, thus increasing the risks of increased doses of radiation to the public.

D. EOC personnel also displayed their inability to communicate effectively with simulated government "officials." As set forth in Contentions 4-5. LERO communications with such "officials" were frequently inaccurate, confused, contradictory, disorganized and untimely. Thus, LILCO has not demonstrated the ability to keep such "officials" informed or to call on such government "officials" for assistance, even assuming, for the sake of argument only, that such government officials would assist LERO and follow the LILCO Plan in the event of a Shoreham emergency.

E. The Exercise also revealed inadequate communications between the EOC and field personnel, such as field monitoring teams, traffic guides and road crews, in that EOC personnel failed to provide those workers with adequate guidance. The lack of guidance was exacerbated by the issuance of inaccurate maps to several categories of workers, including school bus drivers, field monitoring teams, and route spotters. See FEMA Report at 65, 82, 111.

VIII. Contention 20: Fundamental Flaws in LILCO's Training Program

The Exercise demonstrated that LILCO's Plan is fundamentally flawed in that members of LERO, as well as personnel from organizations who are relied upon by LERO, are unable to carry out the LILCO Plan effectively or accurately because of inadequate training.

Under the LILCO Plan, LILCO is responsible for the training of LERO personnel. Training began in 1983 and, since that time, has consisted of classroom instruction, tabletop sessions, drills and exercises. Plan at 5.1-1 thru 5.2-1 and Table 5.1.1; OPIP 5.1.1. LILCO requires all LILCO members of LERO to participate in its training program on an annual basis. Plan at 5.1-1 and Table 5.1.1; OPIP 5.1.1 and Att. 1. Further, subsequent to the 1986 exercise, LILCO conducted extensive additional training and drills. Thus as of the time of the Exercise, LILCO's LERO personnel had already undergone as much as five years of training. The foregoing facts reveal that LILCO's training program is considered an essential part of its Plan.

The 1986 exercise revealed many fundamental flaws in LILCO's training program which were "significant to the ability of LERO to implement the LILCO Plan." 27 NRC at 174-212. The 1988 Exercise demonstrated that these flaws have not been corrected and that, in fact, new flaws exist. In light of the large number of training deficiencies revealed during the Exercise, LILCO has failed to comply with 10 CFR § 50.47(b)(14) and (15), NUREG-0654

§ II.N and O, and its own Plan and procedures. These training program flaws preclude a finding of reasonable assurance that adequate protective measures can and will be taken in the event of a Shoreham emergency, as required by 10 CFR § 50.47(a)(1).

It is impossible to describe at length every instance of a LILCO training deficiency revealed during the Exercise because they are so numerous; virtually every error made by a LILCO player during the Exercise involved, to some degree, a failure of the LILCO training program to prepare personnel adequately to perform necessary actions. However, the numerous instances cited below demonstrate that the flaws in LILCO's training program are pervasive and systemic. It is apparent from these numerous errors, and from the fact that LILCO has failed to cure the training flaws found as a result of its 1986 exercise, that the defects in LILCO's training program are not readily correctable. Assuming for the sake of argument that they are correctable, it would obviously require extensive review and revision of LILCO's training program to do so.

FEMA conducted no systematic review of LERO's training program and, hence, the FEMA Report contains no findings therein. Accordingly, there is nothing in that Report as to which any deference must be afforded.

Because ~~such~~ the errors reflecting LILCO's poor training program are identified elsewhere, and to avoid needless repetition, subparts A-I below rely on cross-references to other

contentions as much as possible to identify specific examples of the training deficiencies which support this contention.4/

A. The Exercise demonstrated that LERO personnel lack the necessary training to interface in a timely and effective manner with State and local government officials. LILCO's Plan requires LERO personnal to be capable of such interface. Plan at 2.2-6 thru 2.2-7; OPIP 3.1.1, Att. 10. Notwithstanding the requirements of LILCO's Plan, however, there were repeated instances during the Exercise in which LERO personnel did not keep government "officials" informed of critical events and otherwise did not interface properly. Exercise events and examples which support this contention subpart are described in Contentions 4-5.

B. The Exercise demonstrated that the LILCO training program has not successfully or effectively prepared LERO personnel to respond properly, appropriately, or effectively to unanticipated and unrehearsed situations likely to arise in an emergency. Exercise actions and events which support this contention subpart are described in Contentions 4-8, 14-15.

C. The Exercise demonstrated that LILCO's training program has been ineffective in instructing LERO personnel to follow and implement the LILCO Plan and LILCO procedures, and in imparting basic knowledge about the Plan and information essential to the ability to implement the Plan and procedures. Exercise actions

---

4/ References in the subparts to FEMA ARCAs are to the Table at pages 116-43 of the FEMA Report, where the ARCAs are numbered and identified by LILCO facility.

and events which support this contention subpart are described in Contentions 4-8, 11-12, 17, and by the FEMA Report. See EOC ARCAs 1, 4, 5, 6, 7, 8, 9, 11, 22, 23, 25; Riverhead ARCAs 1, 2, 5,; Reception ARCA 1; Medical ARCA 1.

D. The Exercise demonstrated that the LILCO training program has not successfully or effectively trained LERO personnel to communicate necessary data and information, to inquire and obtain such information, or to recognize the need to do so. The Exercise results further demonstrated that LERO personnel lack necessary training to communicate emergency information to the public in a timely, clear and non-confusing manner. Exercise events and examples which support this contention subpart are described in Contentions 4-8, 11-12, 19, and in the FEMA Report. See EOC ARCAs 1, 2, and 5.

E. The Exercise demonstrated that LILCO's training program has not successfully or effectively trained LERO personnel to exercise good judgment or to use common sense in dealing with situations presented during an emergency, or in implementing the LILCO Plan and procedures. Exercise events and examples which support this contention subpart are described in Contentions 4-8, 11-12, 15, 17, and in the FEMA Report. See EOC ARCAs 1, 3; Riverhead ARCA 2.

F. The Exercise demonstrated that LILCO's training program has not successfully or effectively trained LERO personnel to deal with the media or otherwise provide timely, accurate, consistent and non-conflicting information to the public, through

the media or in response to rumors, during an emergency. Exercise events and examples which support this contention subpart are described in Contentions 6-7.

G. The Exercise demonstrated that LERO training is deficient in the area of dosimetry, exposure control, KI, understanding of radiation terminology, and related areas. In the 1986 exercise, LILCO made errors in this area, but the Licensing Board concluded that these errors did not rise to the level of a fundamental flaw. See 27 NRC at 204-05. A different conclusion is necessary now. Similar errors have been found in the 1988 Exercise, meaning that LILCO's training, despite the problems identified in LBP-88-2, has been ineffective. Such training deficiencies are serious because public and non-LILCO personnel relied upon to respond to a Shoreham accident (for example, school officials, special facility personnel, and other individuals who are expected by LILCO to respond on an ad hoc basis) would seek information on such subjects from LERO personnel during a real emergency. Since LERO personnel do not understand or know how to use dosimetry equipment and are apparently unable to comprehend the procedures relating to the use of such equipment, they would be incapable of responding accurately or effectively to questions concerning those matters raised by members of the public, or other non-LERO workers expected to respond. Exercise events and examples which support this contention subpart are described in Contention 19 and in the

FEMA Report. See EOC ARCAs 4, 6, 7, 22, 23, 25; Riverhead ARCA 5; Reception ARCA 1; Medical ARCAs 1, and 2.

H. The Exercise demonstrated that LERO personnel have been inadequately trained to correct errors or information when new information or data are brought to their attention. This often contributed to LERO conveying inaccurate information to the public. Exercise events and examples which support this contention subpart are described in Contentions 4-8, 11-12.

I. Most non-LERO personnel who are relied upon in LILCO's Plan failed to participate in the Exercise. However, those who did participate demonstrated a lack of training to implement the Plan. Exercise events and examples which support this contention subpart are described in Contention 13 and in the FEMA Report. See EOC ARCAs 4, 6, 7, 22, 23, 25; Medicals ARCA 1, 2, and 3.

Respectfully submitted,

E. Thomas Boyle
Suffolk County Attorney
Building 158 North County Complex
Veterans Memorial Highway
Hauppauge, New York 11788

Lawrence Coe Lanpher
Michael S. Miller
Christopher M. McMurray
J. Lynn Taylor
Cecilia L. Norton
KIRKPATRICK & LOCKHART
1800 M Street, N.W.
South Lobby - 9th Floor
Washington, D.C. 20036-5891

Attorneys for Suffolk County

Fabian G. Palomino
Richard J. Zahnleuter
Special Counsel to the Governor
of the State of New York
Executive Chamber, Room 229
Capitol Building
Albany, New York 12224

Attorneys for Mario M. Cuomo,
Governor of the State of New York

Stephen B. Latham
Twomey, Latham & Shea
P.O. Box 398
33 West Second Street
Riverhead, New York 11901

Attorney for the Town of
Southampton

November 29, 1988