

1039

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

DOCKETED  
USNRC

'86 OCT -9 P2:38

BEFORE THE COMMISSION

OFFICE OF SECRETARY  
DOCKETING & SERVICE  
BRANCH

In the Matter of )  
 )  
LONG ISLAND LIGHTING COMPANY ) Docket No. 50-322-OL-3  
 ) (Emergency Planning)  
(Shoreham Nuclear Power Station, )  
Unit 1) )

NRC STAFF BRIEF ON ISSUES  
UNDER COMMISSION REVIEW  
PURSUANT TO ORDER OF SEPTEMBER 19, 1986

Bordenick M. Bordenick  
Counsel for NRC Staff

October 9, 1986

8610100759 861009  
PDR ADOCK 05000322  
G PDR

DS07

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

DOCKETED  
USNRC

'86 OCT -9 P2:38

BEFORE THE COMMISSION

OFFICE OF SECRETARY  
DOCKETING & SERVICE  
BRANCH

In the Matter of	)	
	)	
LONG ISLAND LIGHTING COMPANY	)	Docket No. 50-322-OL-3
	)	(Emergency Planning)
(Shoreham Nuclear Power Station,	)	
Unit 1)	)	

NRC STAFF BRIEF ON ISSUES  
UNDER COMMISSION REVIEW  
PURSUANT TO ORDER OF SEPTEMBER 19, 1986

Bordenick M. Bordenick  
Counsel for NRC Staff

October 9, 1986

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION. . . . .	1
II. BACKGROUND. . . . .	2
A. Plume Emergency Planning Zone Size. . . . .	2
B. Emergency Planning for Hospitals. . . . .	5
III. DISCUSSION	
A. Contention 22.B was Correctly Rejected by the Licensing Board as an Attempt to Challenge the Determination that the Ten Mile Zone Mandated in 10 C.F.R. § 50.47(c)(2) Provided a Sufficient Base for Emergency Actions Outside that Zone. . . . .	8
B. Contention 22.C was Correctly Rejected by the Licensing Board as an Attempt to Expand the EPZ Beyond the Area Mandated in 10 C.F.R. § 50.47(c)(2). . . . .	13
C. Where Sheltering of Hospital Patients is the Preferred Protective Action, a Defecency in the Plan for their Evacuation is not a Barrier to Licensing. . . . .	16
IV. CONCLUSION. . . . .	20



TABLE OF AUTHORITIES

<u>COURT CASES</u>	<u>Page</u>
<u>GUARD v. NRC</u> , 753 F.2d 1144 (D.C. Cir. 1985). . . . .	17
 <u>NRC CASES</u>	
<u>Long Island Lighting Company</u> (Shoreham Nuclear Power Station, Unit 1), LBP-85-12, 21 NRC 644 (1985). . . . .	passim
<u>Long Island Lighting Company</u> (Shoreham Nuclear Power Station, Unit 1), ALAB-832, 23 NRC 135 (1986). . . . .	passim
<u>Long Island Lighting Company</u> (Shoreham Nuclear Power Station, Unit 1), CLI-86-13, 24 NRC ___, <u>Slip.op.</u> , July 23, 1986 . . . . .	17
<u>Pacific Gas &amp; Electric Co.</u> (Diablo Canyon Nuclear Plant, Units 1 & 2), ALAB-781, 20 NRC 819 (1984) . . . . .	11, 14
<u>Philadelphia Electric Co.</u> (Limerick Generating Station, Units 1 and 2), ALAB-809, 21 NRC 1605, <u>vacated as moot</u> , CLI-86-16, 22 NRC 459 (1985) . . . . .	17
<u>Public Service Co. of New Hampshire</u> (Seabrook Station, Units 1 & 2), LBP-82-106, 16 NRC 1649 (1982) . . . . .	11
<u>Southern California Edison Company</u> (San Onofre Nuclear Generating Station, Units 2 and 3), LBP-82-39, 15 NRC 1163 (1982), <u>aff'd</u> , ALAB-717, 17 NRC 346 (1983). . . . .	11
 <u>REGULATIONS</u>	
10 C.F.R. 2.758 . . . . .	9, 11
10 C.F.R. 50.47(b). . . . .	17
10 C.F.R. 50.47(c)(1) . . . . .	passim
10 C.F.R. 50.47(c)(2) . . . . .	passim
10 C.F.R. Part 50, Appendix E . . . . .	15



UNPUBLISHED BOARD ORDERS

Page

Special Prehearing Conference Order, August 19, 1983. . .	3, 14
Order Ruling on Objections to Special Prehearing Conference Order, September 30, 1983. . . . .	3, 9, 14

MISCELLANEOUS

Policy Statement on "Planning Bases for Emergency Responses to Nuclear Power Reactor Accidents" 44 Fed. Reg. 61123 (October 23, 1979) . . . . .	10-11, 15
Statement of Consideration on Adoption of Emergency Planning Regulations 45 Fed. Reg. 55402 (August 19, 1980). . . . .	1, 10, 15
NUREG-0396, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants," December 1978 . . . . .	10
NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," January 1980. . . .	6, 7, 10, 19

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of	)	
	)	
LONG ISLAND LIGHTING COMPANY	)	Docket No. 50-322-OL-3
	)	(Emergency Planning)
(Shoreham Nuclear Power Station,	)	
Unit 1)	)	

NRC STAFF BRIEF ON ISSUES  
UNDER COMMISSION REVIEW  
PURSUANT TO ORDER OF SEPTEMBER 19, 1986

I. INTRODUCTION

By Order dated September 19, 1986 (September 19th Order), the Commission took review of three of the issues raised by cross petitions for review of ALAB-832, 23 NRC 135 (1986). <sup>1/</sup> These issues are whether

1. the admission of Contention 22.B. impermissibly challenges the generic rulemaking finding that a 10-mile EPZ will provide an adequate basis for satisfactory ad hoc emergency response beyond ten miles should this be required (see 45 Fed. Reg. 55,406, Col. 2 (August 19, 1980))
2. in the context of Contention 22.C.: a) there is a logical connection between plume EPZ size and the ability to resolve problems associated with possible spontaneous evacuation, and b) the regulations contemplate that the possibility of spontaneous evacua-

---

<sup>1/</sup> The cross petitions for review were filed by Applicant on April 10, 1986 ("LILCO's Petition for Review of ALAB-832") and by Intervenor State of New York, County of Suffolk and Town of Southampton on April 15, 1986 ("Suffolk County, State of New York, and Town of Southampton Petition for Review of ALAB-832").

tion is a "local condition" which should result in adjustments to an EPZ

3. the NRC's regulations in 10 C.F.R. § 50.47 (including 10 C.F.R. § 50.47(c)(1)) require evacuation plans for hospitals in the EPZ even though sheltering would be the preferred option in most circumstances.

September 19th Order, at 2

The Commission invited the parties to submit briefs on these issues. Id. For the reasons set forth below, the NRC Staff (Staff) believes that the Atomic Safety and Licensing Board correctly rejected Contentions 22.B and 22.C as improper attempts to expand the plume emergency planning zone [EPZ] of "about 10 miles" provided for in 10 C.F.R. § 50.47(c)(2), and the Licensing Board correctly determined that the failure to have a fully detailed evacuation plan for hospitals on the edge of the EPZ (where sheltering was the preferred option) was not a significant deficiency in the plans for the plant in question. See 10 C.F.R. § 50.47(c)(1). The Staff therefore answers the Commission's question in issue (1) affirmatively, and the questions in issues (2) and (3) in the negative.

## II. BACKGROUND

### A. Plume Emergency Planning Zone Size

Intervenors submitted for litigation Contention 22 dealing with the size of the EPZ for Shoreham. <sup>2/</sup> Subpart 22.B sought to extend the EPZ beyond the 10 mile radius because of, inter alia, seasonal increases in population, inadequate roads, the insular nature of Long Island and

---

<sup>2/</sup> Revised Emergency Planning Contentions, July 26, 1983, at 38-47. We attach Contention 22 and its subparts as an Appendix to this brief for the convenience of the Commission.



Shelter Island, flooding and snowstorms. See Revised Emergency Planning Contentions, id. at 41-46; Special Prehearing Conference Order, August 19, 1983 (August 19 Order), at 8-9; see also ALAB-832, 23 NRC at 145-46. Contention 22.C maintained that the voluntary evacuation of persons outside the 10 mile zone would impede evacuation within the zone and thus necessitated a larger zone. Id. <sup>3/</sup> The Licensing Board rejected Contention 22.B and 22.C as attempts to challenge the Commission's determination in 10 C.F.R. § 50.47(c)(2) on the size of the plume exposure EPZ. See August 19th Order, at 9-12. In this regard the Board stated: "Our analysis of the regulation and the underlying documents which support it indicate that the regulation was adopted as a generic rule for planning purposes to preclude precisely this type of case-by-case attempt to litigate the extent of a plume EPZ." Id. at 11. The Licensing Board further explicated its reasons for rejecting these contentions in an "Order Ruling On Objections To Special Prehearing Conference Order," September 30, 1983 (September 30 Order), at 2-4. It stated that in regard to Contention 22.B: "To the extent that this contention asserts that ad hoc emergency response outside the 10-mile EPZ would be impossible, it must be rejected as a challenge to

---

<sup>3/</sup> Contention 22.A sought to increase the EPZ size to 20 miles on the grounds that a zone of that size was necessary to meet Federal Protective Action Guideline levels. The rejection of that contention by the Licensing Board was affirmed by the Appeal Board as an attempt to alter the plume exposure zone of "about 10 miles" set out in 10 C.F.R. § 50.47(c)(2). See ALAB-832, 23 NRC at 147. Contention 22.D which sought to expand the EPZ to conform to certain local jurisdictional lines was admitted for litigation, and the Licensing Board did make adjustments to the EPZ boundaries. See LBP-85-12, 21 NRC at 701-07.

§ 50.47(c)(2)." Id. at 3. It further found that many of the subparts of Contention 22.B such as those dealing with seasonal populations, the road network and voluntary shadow evacuation were to be litigated under other admitted contentions. Id. at 2-3.

The Atomic Safety and Licensing Appeal Board reversed the Licensing Board's rejection of Contentions 22.B and 22.C, stating:

We come to a different conclusion, however, with regard to Contentions 22.B and C. In sharp contrast to Contention 22.A, these contentions do not appear to seek anything more than that to which section 50.47(c)(2) entitles intervenors: a determination of the "exact size and configuration" of the EPZ based upon, inter alia, local conditions.<sup>36</sup> Thus, it cannot be said that the contentions amounted<sup>37</sup> to an impermissible attack upon a Commission regulation.

---

<sup>36</sup> With respect to Contention 22.C, the evacuation shadow phenomenon can be considered to be a local condition within the meaning of Section 50.47(c)(2) only insofar as the voluntary evacuation of individuals outside the plume EPZ from areas immediately adjacent to its outer boundary might affect the evacuation of persons from the EPZ.

<sup>37</sup> One local factor asserted by the intervenors is that the emergency response would be provided by the utility alone, rather than a government organization. Because a utility may have less extensive resources for response expansion than a government organization, we consider such a utility-alone response to be a local factor that may be litigated in accordance with section 50.47(c)(2). As with any local factor, the need for minor adjustments to the plume EPZ may be argued on the basis of a utility-alone response, but an attempt to press for significant expansion of that EPZ would require an exception to the regulation.

Id. at 148 <sup>4/</sup>

---

<sup>4/</sup> The Appeal Board also stated that these contentions dealing with the boundaries of the EPZ should not have been rejected merely because

The Appeal Board then directed the Licensing Board to admit Contentions 22.B and 22.C, stating:

Accordingly, we are directing the Licensing Board to admit Contentions 22.B and C and to provide the intervenors with the opportunity to supplement the existing evidence on local conditions with such further evidence (if any) as might be directly relevant to the question whether the boundaries<sup>41</sup> of the proposed plume EPZ should be further adjusted.

---

<sup>41</sup> The Licensing Board should determine whether any additional discovery is justified. We wish to reemphasize that section 50.47(c)(2) allows the consideration only of minor adjustments (such as a mile or two) in the plume EPZ radius. Thus, the Board should exclude any offered evidence that concerns conditions at some distance from the facility.

B. Emergency Planning for Hospitals

There are two hospitals located slightly within the EPZ, and one located slightly outside of the EPZ. LBP-85-12, 21 NRC at 829. The Shoreham Emergency Plan provides that sheltering is the primary protective action for hospital patients because of the distance of the hospitals to the plant, the sheltering benefits afforded by the substantial hospital buildings, and the health risks involved in moving hospital patients. Id. The Licensing Board concluded:

The Board concludes that LILCO has planned thoughtfully for the difficult problem of protective actions for hospitals. This is not an ad hoc plan since LILCO knows what it will do regarding hospitals in the case of a radiological emergency at Shoreham. It will

---

(FOOTNOTE CONTINUED FROM PREVIOUS PAGE)

facts which would support them might be introduced in support of other contentions which sought to establish that the emergency plan was inadequate. Id.



recommend sheltering. Further, it will discuss with hospital administrators whether any further action such as evacuation might be needed. LILCO's witnesses are familiar with the criteria and the factors that would have to be considered at the time that an evacuation decision was being made. They would be guided and influenced by the EPA protective action guides and they are well aware that protective action guides call for a mandatory evacuation when doses exceed 5 rems whole body or 25 rems to the thyroid. Even at those levels, however, LILCO does not make a firm commitment to recommend evacuation because there are matters of health and safety regarding hospital patients which must be weighted in the balance. The EPA PAGs themselves permit special factors and criteria to be considered for hospital patients. FEMA has found the Plan reasonable based on the fact that special considerations are permitted for hospitals and that the hospitals in this case are at the boundary of the EPZ where the hazard is expected to be low. LILCO's conclusion that sheltering as a predetermined protective action will be the one required in practically all cases, given the location of the hospitals in question and the shielding factors for large buildings, is consistent with the planning basis of NUREG-0654.

The County would have the Board weigh the balance between the need to save dose on the one hand, and the need to protect the physical safety of incapacitated hospital patients on the other, more strongly in favor of a predetermined commitment to save dose. We cannot agree that this approach has more merit than LILCO's, given the low likelihood of excessive doses and the possibility of physical harm to hospital patients. We conclude that LILCO's Plan for protective actions for hospitals is a reasonable one. The planned actions are not in violation of NRC's regulations or guidance on emergency planning. Neither do they ignore the substantive need to carefully weigh the special health and safety requirements of hospital patients. We rule in LILCO's favor on this contention.

21 NRC at 843-44.

The Licensing Board also determined that if the need arose to evacuate patients near the EPZ boundary, arrangements for the transportation and relocation of these patients could be made while the emergency was in progress. See 21 NRC at 844-46. It concluded:

Weighing in LILCO's favor on this contention is the fact that the hospitals, like the Suffolk Infirmary, are indisputably near the 10-mile EPZ boundary. Hazard from radiation releases from Shoreham diminishes with distance from the plant. We therefore regard LILCO's conclusion that in the vast majority of cases sheltering would be the protective action of choice to be a realistic one which is consistent with NRC's design basis for the EPZ. NUREG-0654, at 12. FEMA agrees with LILCO that it is appropriate to designate sheltering as a primary protective action and ad hoc evacuation as a backup action.

The Board does not share the County's view that LILCO's Plan for ad hoc evacuation of hospitals constitutes a cavalier disregard for the welfare of hospital patients. LILCO's preference for sheltering of hospital patients is well-founded, both because of the likelihood that radiation levels near the 10-mile EPZ boundary will not be excessive in most accidents and because of the specially sensitive nature of hospital patients who require special care. Nevertheless, in the worst accident scenarios LILCO could not extend the same level of radiation protection to all hospital patients that would be afforded to the general public by an evacuation that takes place in about 5 hours. We find that for some hospital patients delay in evacuation could create an additional increment of risk from radiation dose that is somewhat greater than that of the general public. The Board concludes, however, that the unquantified incremental risk to health and safety of some hospital patients under the LILCO Plan is small. Considering the severity of the accident that would have to occur and the location of hospitals, we conclude that the additional increment of risk to hospital patients over that of the general public does not stand as a barrier to licensing. We conclude that LILCO has sustained its burden of proof on this contention.

21 NRC at 846.

The Appeal Board reversed, holding that the low probability of a need to evacuate hospital patients, even where sheltering was the primary protective action, did not affect the need to fully plan for their evacuation. 23 NRC at 154-57. It stated:

Specifically, in connection with its emergency plan, an operating license applicant must provide "an analysis of the time required to evacuate and for taking other protective actions for various sectors and distances



within the plume exposure pathway EPZ for transient and permanent populations." Such an analysis cannot be made for the hospitals without an awareness of the extent of the transportation that might be required to remove the patients from the EPZ, as well as an understanding of how and when the evacuation would be accomplished. Yet the proposal to deal with transportation requirements only after the need arises supplies no insight on either score.

\* \* \*

The ad hoc evacuation does not provide a foundation for ascertaining evacuation time estimates in conformity with these criteria.

In sum, the Licensing Board should have required the applicant to fulfill the same planning obligations with regard to possible hospital evacuation as the Board imposed in connection with the nursing/adult homes. We therefore remand and direct the Board to rectify this error.

23 NRC at 156-157 [Footnote omitted] <sup>5/</sup>

### III. DISCUSSION

- A. Contention 22.B Was Correctly Rejected by the Licensing Board as an Attempt to Challenge the Determination That the Ten Mile Zone Mandated in 10 C.F.R. § 50.47(c)(2) Provided A Sufficient Base for Emergency Actions Outside That Zone.

Contention 22.B particularly sought to litigate whether eight <sup>6/</sup> "site specific characteristics which exist for Shoreham demonstrate that local emergency response needs and capabilities require planning and preparedness beyond LILCO's proposed 10 mile EPZ." Revised Emergency Planning Contentions, July 26, 1993, at 43.

---

<sup>5/</sup> The Appeal Board particularly faulted the Licensing Board for requiring full preplanning for the evacuation of nursing/adult home residents, but not of hospital patients.

<sup>6/</sup> These factors included seasonal increases in population, the insular nature of Long Island and Shelter Island, the nature of local roads, and flooding and snow storms.



Section 50.47(c)(2) of the Commission's Regulations, 10 C.F.R. § 50.47(c)(2), provides in material part:

Generally, the plume exposure pathway EPZ for nuclear power plants shall consist of an area about 10 miles (16 km) in radius and the ingestion pathway EPZ shall consist of an area about 50 miles (80 km) in radius. The exact size and configuration of the EPZs surrounding a particular nuclear power reactor shall be determined in relation to local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries. . . .

The Licensing Board, in denying admission of those parts of Contention 22. under review here, reviewed the history of the 10 mile EPZ in 10 C.F.R. § 50.47(c)(2). It explained why the contention in question constituted an attack on the regulation establishing the 10 mile EPZ and was therefore contrary to the provisions of 10 C.F.R. § 2.758, which provides that NRC rules and regulations are not subject to challenge or attack in adjudicatory proceedings absent a specific Commission determination to allow questioning of the regulatory standards. August 19 Order at 9-12. On September 30, 1983, the Licensing Board provided further explanation for its rejection of of Contention 22.B. It stated that to the extent that the Contention sought to question whether an ad hoc emergency response was possible outside the 10 mile EPZ, the contention sought to challenge the determination in 10 C.F.R. § 50.47(c)(2) that a 10 mile EPZ was sufficient; and to the extent it sought to question specific matters in the plan, such as transient populations, inadequate roads, etc. those matters were already the subject of other contentions (i.e., Contention 22.D). September 30 Order at 3-4.

The selection of the 10 mile EPZ, codified in 10 C.F.R. § 50.47(c)(2), was the result of a joint NRC-EPA task force study entitled "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants." NUREG-0396, December 1978. This study looked at the radiological releases from a spectrum of accidents and recommended that an EPZ of about 10 miles be established for the plume exposure pathway because that area was sufficient for predetermined protective actions. Id. at 7-17. Subsequently, a joint FEMA-NRC Steering Committee adopted the recommendations contained in NUREG-0396 that the plume exposure pathway EPZ radius should be approximately 10 miles in NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants". NUREG-0654, January, 1980, at 10-12.

The Commission amended its emergency planning regulations in August, 1980, effective November 3, 1980, to provide for a plume exposure emergency planning zone of "about 10 miles." 10 C.F.R. § 50.47(c)(2). The Statement of Consideration accompanying the amendment provided that "the standards are a restatement of basic NRC and now NRC-FEMA guidance to licensees and to State and local governments. See NUREG-0654 . . . ." 45 Fed. Reg. 55402, 55403 (August 19, 1980). The Commission further explicitly stated that "These distances are considered large enough to provide a response base that would support activity outside the planning zone should this ever be needed." 45 Fed. Reg. at 55406; see also NRC Policy Statement on "Planning Basis for Emergency Responses to Nuclear Power Reactor Accidents", 44 Fed. Reg. 61123

(October 23, 1979). Thus, the need for "planning and preparedness beyond LILCO's proposed 10 mile EPZ" which Intervenor sought to raise, had been specifically rejected by the Commission as a generic matter in its adoption of the regulation providing for an EPZ of "about 10 miles."

Commission precedent indicates that a party who seeks to have a major change made in the 10 mile EPZ provided for in regulation may only do so by seeking an exception to 10 C.F.R. § 50.47(c)(2) under 10 C.F.R. § 2.758. In Pacific Gas and Electric Co. (Diablo Canyon Nuclear Plant, Units 1 & 2), ALAB-781, 20 NRC 819, 831-32 (1984), the Appeal Board stated:

Contrary to the argument of the joint intervenors and the Governor, the Licensing Board's focus on emergency planning within the EPZs set forth in 10 C.F.R. 50.47(c)(2) was correct. That regulation evidences the Commission's considered expert judgment as to the necessary size of the plume exposure pathway EPZ and the ingestion pathway EPZ for light water commercial nuclear power plants. Although the regulations provide that the exact size and configuration of a particular EPZ is to be determined with reference to site-specific factors, the wholesale enlargement of the Commission-prescribed EPZs by the State cannot preclude a licensing decision based upon the requirements of the NRC regulations. As the Licensing Board concluded in considering the same type of expanded state EPZs in Southern California Edison Co. (San Onofre Nuclear Generating Station, Units 2 and 3), LBP-82-39, 15 NRC 1163, 1181 (1982), aff'd, ALAB-717, 17 NRC 346 (1983), the Commission's regulations "clearly allow leeway for a mile or two in either direction, based on local factors. But it . . . clearly precludes a plume EPZ radius of, say 20 or more miles." The same Board then correctly determined that a party seeking to impose such a radical departure from the Commission's prescribed EPZs should seek an exception to the rule pursuant to 10 C.F.R. 2.758. (Footnotes omitted)

See also Southern California Edison Co. (San Onofre Nuclear Generating Station, Units 1 & 2), LBP-82-39, 15 NRC 1163, 1177-84 (1982) affirmed, ALAB-717, 17 NRC 346 (1983); Public Service Co. of New Hampshire (Seabrook Station, Units 1 & 2), LBP-82-106, 16 NRC 1649, 1661 (1982).



Although under 10 C.F.R. § 50.47(c)(2), local geographic conditions "such as demography, topography, land characteristics, access routes and jurisdictional boundaries" can affect "the exact size and configuration of the EPZ", Contention 22.P did not seek to raise issues concerning "the exact size and configuration of the EPZ" based on local conditions, as the Appeal Board stated. 23 NRC at 148. <sup>7/</sup> Rather, Contention 22.B as presented to the Licensing Board claimed that a 10 mile EPZ in the LILCO plan was not sufficient because it "does not provide a substantial base for the expansion of response efforts which is likely to prove necessary and such efforts could not be developed during the course of an accident based on LILCO's plan." Revised Emergency Planning Contentions, July 23, 1983, at 43-44; see also Suffolk County, etc., Petition For Review of ALAB-832, April 15, 1986, at 10.

The Licensing Board rightly rejected this contention as an attempt to litigate the need for preplanning for emergency conditions beyond the EPZ, and as an attempt to test whether planning for the EPZ would provide a response base for actions beyond the EPZ as the Commission had stated in adopting 10 C.F.R. § 50.47(c)(2). <sup>8/</sup>

---

<sup>7/</sup> The Licensing Board considered whether the EPZ boundaries should be adjusted to conform to the local conditions the Intervenors raised under Contention 22.D. See 21 NRC 701-07.

<sup>8/</sup> The Appeal Board in n.37 (23 NRC at 148), indicated the fact that emergency response here was provided by a utility alone, rather than by governmental organizations, could be a "local factor" leading to an expansion of the 10 mile EPZ. However, the Appeal Board also recognized that this could not lead to any "significant expansion" of the EPZ without Commission granted exception to the regulations. Moreover, the nature of the response organization is not in the nature of the geographic conditions set out in 10 C.F.R. § 50.47(c)(2) which could lead to an adjustment in the EPZ.

B. Contention 22.C Was Correctly Rejected By The Licensing Board As An Attempt To Expand The EPZ Beyond The Area Mandated In 10 C.F.R. § 50.47(c)(2).

Contention 22.C began by asserting that a larger EPZ for Shoreham was necessary because:

An EPZ larger than 10 miles is required for the additional reason that people from outside the 10-mile EPZ will attempt to evacuate, whether ordered to do so or not. . . . the voluntary evacuation will impede the evacuation of persons within the 10-mile EPZ. . . .

Revised Emergency Planning Contentions, July 26, 1983, at 44

The Contention concluded:

Failure to develop at this time emergency planning measures for the area outside the 10 mile EPZ will result in uncontrolled, chaotic evacuation should a serious accident occur at Shoreham, thereby affecting LILCO's efforts to manage the evacuation of persons within its EPZ and causing fear, panic, accidents, looting, possible violence and other phenomena beyond the control of the officials in the area east of the EPZ. Thus, an EPZ of larger than 10 miles is necessary to achieve compliance with 10 C.F.R. Section 50.47(c)(1).

Id. at 46

The foregoing discussion regarding Contention 22.B is equally applicable to Contention 22.C. Contention 22.C, by its terms, was not an attempt to seek "a determination of the exact size and configuration of the EPZ based, inter alia, on local conditions", as the Appeal Board stated. 23 NRC at 148 [Footnote omitted]. Rather it was, by its very words, an attempt to grossly expand the EPZ to require preplanning for areas beyond those of "about 10 miles". Any party seeking "such a radical departure from the Commission's prescribed EPZ should seek an exception

to the rule pursuant to 10 C.F.R. § 2.758." Pacific Gas and Electric Co. (Diablo Canyon Nuclear Plant, Units 1 & 2), ALAB-781, 20 NRC at 882. The Intervenor did not do so, and the Licensing Board correctly looked at the contention as an attempt to materially expand the size of the EPZ, and, as such, a challenge to the Commission's regulations. See August 19 Order at 9-12; September 30 Order at 3-4. <sup>9/</sup>

The problems associated with a spontaneous or shadow evacuation of those outside the EPZ and the relation to the problems of those in the EPZ were extensively litigated in this proceeding. Under Contentions 23.A-C the Licensing Board considered whether a spontaneous evacuation of those outside the EPZ would prevent the evacuation of those inside the EPZ for whom the Commission said there was to be preplanning. See LBP-85-12, 21 NRC at 669-71. The Licensing Board further weighed, under Contentions 65, 23.D and 23.H, the extent to which spontaneous evacuation of those outside the plume EPZ could affect the time it took those within the EPZ to evacuate. See Id. at 801-09.

Although the Licensing Board considered the relationship between the actions of those outside the plume EPZ and the ability of those in the

---

<sup>9/</sup> The Appeal Board recognized that the Commission's regulations only permit "minor adjustments" to the plume EPZ. 23 NRC at 148-49 n.37 and n.41. There was no basis to construe these contentions as seeking "minor adjustments." The predicate to all of Contention 22 asked for an EPZ "perhaps as large as 20 miles." Revised Emergency Planning Contentions, July 26, 1983, at 38. Subparts B and C did not seek alterations to the "exact size and configuration of the EPZ's as permitted by section 50.47(c)(2), but sought preparedness plans for areas considerably beyond the 10 mile zone provided for in the regulation. As we have indicated Intervenor were able to litigate the need to adjust the EPZ boundary to conform to local jurisdictional lines. See 21 NRC at 701-07.



plume EPZ to act in an emergency, it properly refused to consider whether the plume EPZ should be expanded because those outside of the 10 mile zone might spontaneously evacuate. There is no logical connection between the plume EPZ size and the ability to resolve problems with possible spontaneous evacuations. The Commission in adopting the plume EPZ of about 10 miles, stated: "Predetermined protective actions are needed for the EPZs." 45 Fed. Reg. 55406 (August 19, 1980); see also NRC Policy Statement on "Planning Basis for Responses to Nuclear Power Reactor Accidents," 44 Fed. Reg. 61123 (October 23, 1979). It is those within this zone for whom predetermined protective actions are needed in order to prevent exposure to airborne radionuclides. Id. Such predetermined actions are not needed for those outside this zone. Id. Thus, the cure for any EPZ-related problem arising from events taking place outside the EPZ is not to expand the zone, but to factor those matters into the planning for the protective actions to be taken for those within the 10 mile zone. This is what the Licensing Board did. There is no logical basis to expand the EPZ within which preplanned actions must be taken to prevent exposure to airborne radionuclides, because those outside the zone of exposure might choose to evacuate in the case of a nuclear power reactor accident.

Further, there is no support for the proposition that the regulations contemplate the possibility of spontaneous evacuation as a "local condition" which could lead to an adjustment in the size of an EPZ. The "local conditions" which might call for adjustment of an EPZ boundary are characterized in the regulation to include such matters as "demography, topography, land characteristics, access routes, and jurisdictional

boundaries." These are all matters dealing with conditions which might exist around a nuclear power plant, not conditions that might arise at the time of an accident. Plainly "spontaneous evacuation," which could happen at any site, is not a site specific condition which could affect the size of an EPZ under 10 C.F.R. § 50.47(c)(2).

The Licensing Board correctly rejected consideration of Contention 22.C which sought to increase the size of the zone within which predetermined actions were to be taken against airborne releases, because there might be spontaneous evacuation of persons outside that zone. <sup>10/</sup>

C. Where the Sheltering of Hospital Patients Is the Preferred Protective Action, A Deficiency In the Plan For Their Evacuation Is Not A Barrier to Licensing.

Section 50.47(c)(1) of the Commission's Regulations, 10 C.F.R. § 50.47(c)(1), governing the acceptance of emergency response plans

---

<sup>10/</sup> In its decision directing the Licensing Board "to admit Contentions 22.B and C" (23 NRC at 149) the Appeal Board further observed in a footnote that "[w]e wish to reemphasize that section 50.47(c)(2) allows the consideration only of minor adjustments (such as a mile or two) in the plume EPZ radius. Thus, the Board should exclude any offered evidence that concerns conditions at some distance from the facility." Id. at n.41. In its petition seeking Commission review of this decision, the Intervenor's argue that the Appeal Board's ruling "prohibiting consideration of adjustments to an EPZ beyond the arbitrary limit of two miles violates the plain meaning of Section 50.47(c)(2)." (Petition at 10) They further state that the "regulation contains no such arbitrary limit, and the Appeal Board's interpretation of the regulation cannot be sustained." Id. For its part, LILCO asserts in its Petition seeking review that "the remand of the EPZ issue for consideration of 'minor adjustments' is simply unresponsive to the contentions, which have nothing to do with minor adjustments but rather advocate a wholesale revision of the EPZ" Petition at 7. While this dispute is not expressly addressed in the questions posed by the Commission, the Staff nonetheless believes that although the evidentiary limitation placed on the litigation of Contentions 22.B and C diminishes, the practical

provides, in part, that although a failure to meet the standards in that regulation might lead the Commission to decline to issue an operating license

the applicant will have the opportunity to demonstrate to the satisfaction of the Commission that deficiencies in the plans are not significant for the plant in question,

. . .

In this very case the Commission emphasized that the emergency planning rules are flexible and that an emergency plan might "pass muster under 10 C.F.R. § 50.47(c)" although not meeting all the requirements in 10 C.F.R. § 50.47(b) and Part 50, Appendix E, "if the defects are 'not significant'". CLI-86-13, 24 NRC \_\_\_\_, (slip op. at 10) (July 23, 1986). <sup>11/</sup>

The plan for the protection of hospital patients in the Shoreham EPZ provides for sheltering as the principal protective action. 21 NRC at 841, 843. The hospitals in the Shoreham EPZ are located more than 9 miles from the plant. 21 NRC at 829; 23 NRC at 154. The hospital buildings provide a shielding factor of 0.2 (i.e., 80 percent of the whole body dose compared to the dose one would receive out-of-doors). Id., 21 NRC 773. There are substantial health risks to moving hospital patients in an

---

(FOOTNOTE CONTINUED FROM PREVIOUS PAGE)

significance of the Appeal Board's ruling, the admission of the contentions was nonetheless improper for the reason discussed above.

<sup>11/</sup> See also Commission Policy Statement in response to remand in GUARD v. NRC, 753 F.2d 1144 (D.C. Cir. 1985) relying on 10 C.F.R. § 50.47(c)(1) in granting relief from requirements of 10 C.F.R. § 50.47(b); cf. Philadelphia Electric Co. (Limerick Generating Station, Units 1 and 2), ALAB-809, 21 NRC 1605, 1909-11, vacated as moot, CLI-86-16, 22 NRC 459 (1985).



evacuation. Id. On this basis, although not specifically citing 10 C.F.R. § 50.47(c)(1), the Licensing Board ruled that LILCO's plan for sheltering hospital patients, was reasonable (21 NRC at 844), and that the failure to have a full detailed evacuation plan for patients was not significant enough "to stand as a barrier to licensing". 21 NRC 846, see also 843-46.

The Appeal Board gave no consideration under 10 C.F.R. § 50.47(c)(1) to whether the failure to have a fully detailed evacuation plan for hospital patients and complete evacuation time estimates for those patients was "significant for the plant in question". See 23 NRC at 155-57. It merely concluded that in all cases, whether significant or not, a full evacuation plan and evacuation time estimates must exist for hospital patients. <sup>12/</sup> The Licensing Board, however, had weighed the evidence and concluded:

Because of special needs of hospitals LILCO has made a calculated choice not to specify a priori precisely what conditions will precipitate an evacuation of hospitals in a radiological emergency. This is what the County calls ad hoc planning. . . .

The Board concludes that LILCO has planned thoughtfully for the difficult problem of protective actions for hospitals. This is not an ad hoc plan since LILCO knows what it will do regarding hospitals in the case of a radiological emergency at Shoreham. It will

---

<sup>12/</sup> The Appeal Board seems to base much of its reasoning on the apparent fact that more detailed evacuation planning was performed for nursing/adult home residents. The required amount of planning for those residents is not at issue in this appeal. Further, there is no showing that these residents were also located at the boundary of the EPZ, that they were housed in substantial structures, or that there was the same danger in moving them as in moving hospital patients. Thus, the extent of planning for the evacuation of nursing/adult home residents does not appear to be germane to the issue of the extent of planning needed for the possible evacuation of hospital patients.

recommend sheltering. Further, it will discuss with hospital administrators whether any further action such as evacuation might be needed. . . . [LILCO] would be guided and influenced by the EPA protective action guides and they are well aware that protective action guides call for a mandatory evacuation when doses exceed 5 rems whole body or 25 rems to the thyroid. Even at those levels, however, LILCO does not make a firm commitment to recommend evacuation because there are matters of health and safety regarding hospital patients which must be weighed in the balance. The EPA PAGs themselves permit special factors and criteria to be considered for hospital patients. FEMA has found the Plan reasonable based on the fact that special considerations are permitted for hospitals and that the hospitals in this case are at the boundary of the EPZ where the hazard is expected to be low. LILCO's conclusion that sheltering as a predetermined protective action will be the one required in practically all cases, given the location of the hospitals in question and the shielding factors for large buildings, is consistent with the planning basis of NUREG-0654.

. . . We conclude that LILCO's Plan for protective actions for hospitals is a reasonable one. The planned actions are not in violation of NRC's regulations or guidance on emergency planning. Neither do they ignore the substantive need to carefully weigh the special health and safety requirements of hospital patients.

21 NRC 843-44.

The Board further went on to detail the planning LILCO had performed in regard to evacuation of hospital patients. 21 NRC 844-46. It then concluded:

We find that for some hospital patients delay in evacuation could create an additional increment of risk from radiation dose that is somewhat greater than that of the general public. The Board concludes, however, that the unquantified incremental risk to health and safety of some hospital patients under the LILCO Plan is small. Considering the severity of the accident that would have to occur and the location of hospitals, we conclude that the additional increment of risk to hospital patients over that of the general public does not stand as a barrier to licensing. We conclude that LILCO has sustained its burden of proof on this contention.

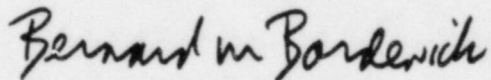
23 NRC at 846.

As the Licensing Board correctly concluded any deficiency in the plans for the evacuation of hospitals at the edge of the EPZ was not so significant for this plant as to stand as a barrier to licensing. See 10 C.F.R. § 50.47(c)(1).

#### IV. CONCLUSION

For the reasons set out above, the Commission should determine that the Licensing Board correctly excluded Contentions 22.B and 22.C from litigation and correctly determined that full detailed evacuation planning for hospital patients was not significant in this case where sheltering is to be the primary protective action.

Respectfully submitted,

  
Bernard M. Bordenick  
Counsel for NRC Staff

Dated at Bethesda, Maryland  
this 9th day of October, 1986



## APPENDIX

### Contention 22.

LILCO proposes a plume exposure pathway EPZ of approximately 10 miles in radius. (See Plan Figure 3.5.1 and Appendix A, Figure 3.) Intervenor contend that LILCO's proposed 10-mile EPZ is inadequate in size. Under the site specific circumstances existing on Long Island, an EPZ larger than 10 miles and perhaps as large as 20 miles is necessary. The bases for Intervenor's contention that a plume exposure pathway EPZ greater than 10 miles is required are: the site specific consequences which would be experienced in a severe Shoreham accident; special topographic, geographic, governmental and social conditions existing on Long Island; the fact that LILCO's 10 mile EPZ does not provide a sufficient base for expanding emergency response to larger areas should the need arise; the evacuation shadow phenomenon; and the need to avoid having the EPZ divide population zones and governmental entities. These bases are described in greater detail in paragraphs A-D below.

### Contention 22.A.

The radiological consequences of a severe accident at Shoreham are likely to be experienced at serious levels at distances greater than 10 miles from the plant. A Shoreham-specific consequence analysis (F.C. Finlayson and Edward P. Radford, "Basis for Selection of Emergency Planning Zones for the Shoreham Nuclear Power Plant, Suffolk County, New York," (Draft), October, 1982) has been conducted which takes into account, among other things, the meteorological and topographic characteristics of the areas surrounding the Shoreham Plant. This analysis based on local conditions demonstrates that in the event of a

core-melt accident at Shoreham, there could be doses far in excess of PAG levels at the edge of the 10-mile EPZ proposed by LILCO.

In the event of an especially severe Shoreham accident, persons in areas beyond the LILCO 10-mile EPZ would have a 35 percent chance of receiving 200 rems and a 60 percent chance of receiving 30 rems. (200 rems represents the threshold level for early deaths; 30 rems is the level at which detectable damage to the body occurs). Even in the event of a less severe accident, persons in areas beyond the LILCO 10-mile EPZ would have a 50 percent chance of receiving 10 rems, and a 20 percent chance of receiving 30 rems. These projected doses are well above PAG levels. At 20 miles from the plant, there is less than a one percent chance of receiving a 30 rem dose (detectable physical damage can result from such a dose) for the spectrum of representative core melt accidents. For more severe core melt accidents, at 20 miles there is less than a one percent chance of receiving 200 rems.

An EPZ larger than 10 miles is necessary in order to provide planning and preparedness for protective actions necessary to mitigate doses that could produce early injuries or death, and to ensure that persons will be prepared to take protective actions in those areas most likely to experience radiation doses above the PAG levels. NUREG 0654, Section I.D.2., recognizes the need to be prepared to take protective actions at distances beyond 10 miles from the plant but appears to assume that for most situations a base planning area of 10 miles readily permits expansion of planning to the area beyond 10 miles. This is untrue on Long Island for the reasons described in parts B and C below and for the additional reason that emergency response is to be undertaken by LERO,

a LILCO creation which lacks capability in an emergency to augment its response needed for the 10 mile area. Hence, detailed advance planning for a larger area is required. The Intervenor believe that given the site specific consequences of a severe accident at Shoreham, an EPZ of approximately 20 miles is justified. In any event, in light of such consequences, the 10-mile EPZ proposed by LILCO is inadequate and should be enlarged.

Preparedness beyond the 10-mile EPZ proposed by LILCO is further required by 10 CFR Section 50.47(b)(10), since "[g]uidelines for the choice of protective actions during an emergency, consistent with Federal guidance, [must be] developed and in place." The Shoreham-specific consequence analysis demonstrates that under certain accident scenarios, exposures of five rems or more are likely out to 20 miles from the plant. The Federal PAGs require the commencement of protective actions at a potential exposure of one to five rems. In failing to provide for the commencement of protective actions anywhere beyond a 10 mile EPZ, the LILCO Plan is thus inconsistent with Federal PAGs and in violation of 10 CFR Section 50.47(b)(10).

Contention 22.B.

The NRC has recognized that in the event of certain serious accidents, protective actions would need to be taken beyond a 10-mile EPZ. See NUREG 0654, Section I.D.2 at 11 and 12. The site specific characteristics and consequences of a severe accident at Shoreham would make such protective actions essential to comply with the Federal PAG guidance and 10 CFR Section 50.47(b)(10).



The area of Long Island which surrounds Shoreham, particularly the area which lies east of the Shoreham nuclear Plant and east of LILCO's proposed EPZ (including the towns of East Hampton, Southold, Shelter Island, most of Riverhead and virtually all of Southampton), possesses a number of distinguishing characteristics, which taken together, contribute to the need to plan beyond the 10-mile EPZ proposed by LILCO. Among these distinguishing characteristics are the following:

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

2. A highly transient, dispersed seasonal population, much of which depends upon limited public transportation;

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

4. Due to Long Island's configuration, the inadequate road network on the north and south forks connects to two principal east-west arteries, the Long Island Expressway and Sunrise Highway, both of which pass through or very close to LILCO's proposed EPZ;

5. The area east of the EPZ provides no means of exodus to the east, meaning that persons deciding to evacuate must travel toward and through LILCO's EPZ. Studies show that large numbers of people in this area will spontaneously evacuate toward the EPZ;

6. The governmental resources available to control, communicate with, direct, shelter, provide security and otherwise accommodate this seasonal population are inadequate. Further, as noted in part A, no governmental resources will be available and thus all response is a LILCO

responsibility. LILCO's LERO lacks capability to expand response to an emergency from the 10 mile EPZ to a larger area unless detailed advance planning is in place. (This might be different if governmental entities have greater resources and experience than LILCO were participating in the response);

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

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

Intervenors contend that these site specific characteristics which exist for Shoreham demonstrate that local emergency response needs and capabilities require planning and preparedness beyond LILCO's proposed 10 mile EPZ. Such planning and preparedness are necessary to assure the existence of an adequate response base to support expanded response efforts which may be required in the event of a serious accident. LILCO has failed to provide planning or preparedness for any area beyond 10 miles from the plant, despite the site specific consequences which could result from a severe accident at Shoreham. Thus, the LILCO Plan does not provide a substantial base for the expansion of response efforts which is likely to prove necessary and such efforts could not be developed during the course of an accident based on LILCO's Plan. This is contrary to the guidance of NUREG 0654, Section II.D.2 and 10 CFR Section 50.47(b)(10).

Contention 22.C

An EPZ larger than 10 miles is required for the additional reason that people from outside the 10 mile EPZ will attempt to evacuate, whether ordered to do so or not. Without planning and preparedness for an area beyond 10 miles, which takes local conditions (see C above) and voluntary evacuation into account, the voluntary evacuation will impede the evacuation of persons within the 10 mile EPZ and will result in inadequate protection for persons both inside and outside the 10 mile EPZ. Thus, in light of local conditions and the voluntary evacuation which will exacerbate the effects of such local conditions, an EPZ that is larger than 10 miles is required. LILCO's plan essentially ignores any planning for voluntary evacuees and thus is inadequate. (For a detailed discussion of voluntary evacuation (the "evacuation shadow" phenomenon), see Contention 23).

An EPZ larger than 10 miles is further necessary to provide planning and preparedness for the education, notification and safe movement and relocation of the large number of people likely to be on the roads in the event of a Shoreham emergency. A high proportion of the voluntary evacuees will be from the eastern end of Long Island. Due to their perception that they would be trapped if the wind blew to the east, many East End residents will choose to evacuate in the event of an emergency at Shoreham. In voluntarily evacuating, they will move to the west, in some cases entering the 10-mile EPZ. In order to protect these people, and to ensure that their voluntary evacuation does not adversely affect people within 10 miles of the plant, the EPZ must be extended so that detailed planning encompasses the people to the east of the plant.



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

LILCO has not adequately provided for communications, security, blockades, relocation centers, medical facilities or any other protective actions for the area outside the proposed 10 mile EPZ in order to mitigate the impact of spontaneous evacuation on the adequacy or implementability of protective actions in LILCO's proposed 10 mile EPZ, or to prevent any such impact altogether. Failure to develop at this time emergency planning measures for the area outside the 10 mile EPZ will result in uncontrolled, chaotic evacuation should a serious accident occur at Shoreham, thereby affecting LILCO's efforts to manage the evacuation of persons within its EPZ and causing fear, panic, accidents, looting, possible violence and other phenomena beyond the control of the officials in the area east of the EPZ. Thus, an EPZ of larger than 10 miles is necessary to achieve compliance with 10 CFR Section 50.47(a)(1).

#### Contention 22.D

10 CFR Section 50.47(c)(2) provides that two elements essential to defining the configuration of an EPZ are the location of local jurisdictional boundaries and demographic conditions. Thus, it is good emergency planning practice to include, if possible, the entire area of a

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

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

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

DOCKETED  
USNRC

'86 OCT -9 P2:38

OFFICE OF SECRETARY  
DOCKETING & SERVICE  
BRANCH

In the Matter of	)	
	)	
LONG ISLAND LIGHTING COMPANY	)	Docket No. 50-322-OL-3
	)	(Emergency Planning)
(Shoreham Nuclear Power Station,	)	
Unit 1)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of the "NRC STAFF BRIEF ON ISSUES UNDER COMMISSION REVIEW PURSUANT TO ORDER OF SEPTEMBER 19, 1986" filed in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class or, as indicated by an asterisk, through deposit in the Nuclear Regulatory Commission's internal mail system or, as indicated by double asterisks, hand delivered or, as indicated by triple asterisks, by federal express or express mail, this 9th day of October, 1986.

Samuel J. Chilk\*  
Secretary of the Commission  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Joel Blau, Esq.  
Director, Utility Intervention  
NYS Consumer Protection Board  
Suite 1020  
99 Washington Avenue  
Albany, New York 12210

Morton B. Margulies, Chairman\*  
Administrative Judge  
Atomic Safety and Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Fabian G. Palomino, Esq.  
Special Counsel to the Governor  
Executive Chamber  
State Capitol  
Albany, NY 12224

Dr. Jerry R. Kline\*  
Administrative Judge  
Atomic Safety and Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Jonathan D. Feinberg, Esq.  
New York State Department of  
Public Service  
Three Empire State Plaza  
Albany, NY 12223

Mr. Frederick J. Shon\*  
Administrative Judge  
Atomic Safety and Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, D. C. 20555

W. Taylor Reveley III, Esq.\*\*\*  
Donald P. Irwin, Esq.  
Hunton & Williams  
707 East Main Street  
P.O. Box 1535  
Richmond, VA 23212



Stephen B. Latham, Esq.\*\*\*  
Twomey, Latham & Shea  
Attorneys at Law  
33 West Second Street  
Riverhead, NY 11901

Atomic Safety and Licensing  
Board Panel\*  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Atomic Safety and Licensing  
Appeal Board Panel\*  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Spence W. Perry, Esq.  
Associate General Counsel  
Federal Emergency Management  
Agency  
500 C Street, SW, Room 840  
Washington, DC 20472

Anthony F. Earley, Jr., Esq.  
General Counsel  
Long Island Lighting Company  
175 East Old Country Road  
Hicksville, NY 11801

Ms. Nora Bredes  
Shoreham Opponents Coalition  
195 East Main Street  
Smithtown, NY 11787

Martin Bradley Ashare, Esq.  
Suffolk County Attorney  
H. Lee Dennison Building  
Veteran's Memorial Highway  
Hauppauge, NY 11788

Dr. Robert Hoffman  
Long Island Coalition for Safe  
Living  
P.O. Box 1355  
Massapequa, NY 11758

Herbert H. Brown, Esq.\*\*  
Lawrence Coe Lanpher, Esq.  
Karla J. Letsche, Esq.  
Kirkpatrick & Lockhart  
1900 M Street, N.W.  
8th Floor

Dr. Monroe Schneider  
North Shore Committee  
P.O. Box 231  
Wading River, NY 11792

Mr. Jay Dunkleberger  
New York State Energy Office  
Agency Building 2  
Empire State Plaza  
Albany, New York 12223

Docketing and Service Section\*\*  
Office of the Secretary  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Robert Abrams, Esq.  
Attorney General of the State  
of New York  
Attn: Peter Bienstock, Esq.  
Department of Law  
State of New York  
Two World Trade Center  
Room 46-14  
New York, NY 10047

William Cumming, Esq.  
Office of General Counsel  
Federal Emergency Management  
Agency  
500 C Street, SW  
Washington, DC 20472

Mr. Philip McIntire  
Federal Emergency Management  
Agency  
26 Federal Plaza  
Room 1349  
New York, NY 10278

*Bernard M. Bordenick*  
Bernard M. Bordenick  
Counsel for NRC Staff