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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

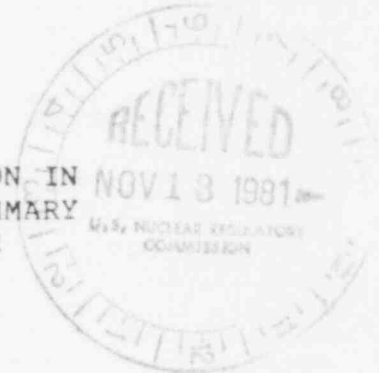
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BEFORE THE ATOMIC SAFETY AND LICENSING BOARD OFFICE OF SECRETARY  
DOCKETING & SERVICE  
BRANCH

In the Matter of )  
 )  
LONG ISLAND LIGHTING COMPANY )  
 )  
(Shoreham Nuclear Power Station, )  
Unit 1) )

Docket No. 50-322

RESPONSE OF SHOREHAM OPPONENT'S COALITION IN  
OPPOSITION TO APPLICANT'S MOTIONS FOR SUMMARY  
DISPOSITION OF SOC CONTENTIONS 1 AND 2



I. Introduction

Applicant's Motions for Summary Disposition of SOC Contentions 1 and 2 (hereinafter Applicant's Motions) are predicated on essentially a single argument: that by challenging the adequacy of the EPZ's as set forth in the Commission's final rule on emergency planning (45 Fed. Reg. 55402; 1980; SOC Contention 1) and by challenging the adequacy of the emergency planning requirements for the 50-mile (radius) ingestion pathway (45 Fed. Reg. 55402; 1980; SOC Contention 2), SOC has mounted an impermissible challenge to the Commission's regulations without meeting the requirements of 10 C.F.R. Section 2.758. Applicant's argument is buttressed by a number of "undisputed" material facts, all but one of which SOC contests below.

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Applicant has mischaracterized the nature of the Commission's emergency planning rule and consequently the nature of SOC's Contentions 1 and 2. Upon closer examination, it will be seen that Applicant has attempted to impose rigid standards on the standards and concepts of emergency planning which the Commission itself has scrupulously avoided. SOC has not mounted any assault on the Commission's regulations and no showing pursuant to 10 C.F.R. Section 2.758 is needed to support Contentions 1 and 2 for litigation in the Shoreham O.L. proceedings as suggested by Applicant.

SOC's Opposition to Applicant's Motions consists of a separate affidavit for each contention by one of SOC's technical consultants, Richard Hubbard of MHB Technical Associates; relevant interrogatories and responses by Staff and Applicant; and two letters from Staff Counsel Bordenick (dated September 4, and 9, 1981) which purport to respond to SOC inquiries on the subject matter of Contentions 1 and 2. SOC's reply to the legal issues and undisputed material facts asserted in Applicant's Motions is contained in this single document.

## II.

### SOC's Rebuttal of Undisputed Material Facts Asserted by Applicant In Connection with Applicant's Motions for Summary Disposition of SOC Contentions 1 and 2

At pages of 2 - 4 of Applicant's Motion for Summary Disposition or SOC Contention 1, 8 "Material Facts As To Which There Is No Genuine Issue To Be Heard" are presented. With the exception of fact #1 (paragraph 1), SOC believes a genuine issue of fact remains with regard to each other fact (references are to the numbered paragraphs at pages 2 - 4 of Applicant's Motion ... on SOC Contentions 1).

Paragraph 2. Applicant asserts that the Commission's emergency planning rule "relies specifically on the work of the Emergency Planning Task Force set out in ... NUREG 0396" (emphasis added). This characterization of the emergency planning rule is indicative of Applicant's efforts to lend precision or rigidity to a rule which the Commission has left flexible. EPZ's are certainly discussed in NUREG 0396, but it is far from clear that the rule itself "relies" on NUREG 0396 (see, e.g., 45 Fed. Reg. 55408, August 19, 1980, footnote 1). As Applicant is undoubtedly aware, the discussion of EPZ's in NUREG 0396 and the adoption of an emergency planning rule by the Commission spans almost two years, including the milestone accident at TMI-2 and its profound impact on nuclear regulation.

Paragraph 3. The excerpts from 10 CFR 50.47(c)(2) and NUREG 0396 display Applicant's penchant for creative editing--at the

expense of an accurate statement of the rule. The section of 50.47(c)(2) cited by Applicant continues as follows:

The exact size and configuration of the EPZ's 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. (emphasis supplied)

Two points are worth noting:

(1) Insofar as the rule proposes general guidelines for defining EPZ's, the rule specifically endorses site-specific calculations of size and configuration after consideration of a variety of local factors.

(2) In ruling on SOC's proposed Contention 1, this Licensing Board adopted more restrictive language than that contained in the rule itself (see SOC/Staff Stipulation dated June 6, 1980; Applicant's Response dated June 17, 1980 at pp. 1-2; Board Order dated June 26, 1980). Virtually the same words ("such conditions as") struck from SOC's Contention 1 by the Board are contained in the final Commission rule, which appeared after the Board's decision. Thus, to the extent the Board's June 26, 1980 ruling could be read as being more restrictive than the rule itself, SOC asks the Board to confirm, in its ruling on Applicant's Motion on SOC Contention 1, that the broader language of the rule itself defines the scope of SOC's Contention 1.

With regard to the excerpt from NUREG 0396 (p. 16) offered by Applicant, a statement of the full quote presents a picture

far different than that suggested by Applicant (the portion of the quote omitted by Applicant is underlined):

[I]t was the consensus of the Task Force that emergency plans could be based upon a generic distance out to which predetermined actions would provide dose savings for any such accidents. Beyond this generic distance it was concluded that actions could be taken on an ad hoc basis using the same considerations that went into the initial action determinations. (NUREG 0396 at 16)

It should be noted that the "considerations" identified in NUREG 0396 included, "risk, probability, cost effectiveness and accident consequence spectrum".

The Board's attention is further directed to Table 1 on page 17 of NUREG 0396 ("Guidance on Size of the Emergency Planning Zone"; emphasis supplied) which cautions on the size of the 10-mile radius EPZ:

Judgment should be used in adopting this distance based upon considerations of local conditions such as demography, topography, land characteristics, access routes, and local jurisdictional boundaries. (Emphasis supplied)

It is clear that Applicant's effort to attribute inflexible precision to the "generic" 10- and 50-mile EPZ's is incorrect. Both the Commission's rule and the document (NUREG 0396) upon which Applicant claims the rule "relies" strongly endorse the flexible nature of the EPZ's and the fact that the suggested distances are guidance for the state and local planners who must develop and implement the actual emergency plans.

Paragraph 4. Here, too, Applicant omits critical language from the quoted portions of NUREG 0396. The discussion cited by

Applicant at III-7 concludes with the following:

A principal aim in establishing EPZ's is to foster a breadth, versatility and flexibility in response preparation and capabilities in a systematic manner. From the standpoint of general emergency planning guidance, emergency planning needs seem to be best served by adopting uniform Emergency Planning Zones for initial planning studies for all light water reactors. (NUREG 0396 at III-8; emphasis supplied.)

Paragraph 5. Again, Applicant attempts to argue away the distinct flexibility provided to local planners for their determination of the size and configuration of EPZ's by applying a creative interpretation of the rule. Applicant's phrase "minor perturbations" (line 4 of paragraph 5) appears nowhere in the rule, and where Applicant argues (paragraph 5, lines 8-9) that "no major case-by-case analyses were mandated," it is equally true to state that case-by-case analyses are not precluded by the rule. As set forth in SOC's arguments on paragraphs 2-4 above, it is clear that such site-specific analyses are required by the rule, certainly once local planners have advanced past the initial planning stage and the "guidance" provided by the regulations.

Paragraph 6. In asserting that Class 9 accidents were specifically considered by the Commission in setting EPZ's, Applicant ignores the large uncertainty surrounding that consideration. Applicant neglects to mention for example, the NRC's admission that the "error band for the probabilities of some of the event sequences could be as great as a factor of 100" (NUREG 0490 at pp. 7-10; see Affidavit of Richard Hubbard concerning SOC

Contention 1, paragraph 12). Similar uncertainty is admitted in NUREG 0396 specifically with regard to the expected doses to be received at the 10-mile EPZ boundary:

That is, the probability of exceeding PAG doses at 10 miles is  $1.5 \times 10^{-5}$  per reactor year\* (one change in 50,000 per reactor-year) from the Reactor Safety Study analysis.

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\*There is a large uncertainty in this number.  
(NUREG 0396; pp. I-37, 41)

The Board should note that this explanation in NUREG 0396 of the use of the RSS and its consideration of Class 9 accidents was provided to local planners to enlighten them on the range of consequences and the uncertainties in those consequences in their establishment of EPZ's:

Since emergency planners are encouraged to develop response plans which will be flexible enough to respond to most accident situations, some understanding of "Class 9" accidents and the relationships between them and emergency planning is needed. (NUREG 0396 at I-36)

As noted in the Hubbard Affidavit concerning SOC Contention 1, the State of California has established site-specific EPZ's based upon its consideration of consequence analyses and local conditions (see Hubbard Affidavit, paragraphs 20-24).

Paragraph 7. Applicant's excerpt from the Commission's rule (from the section "Emergency Planning Zone Concept") again recites only part of the picture. The section of the rule cited by Applicant concludes as follows:

The exact size and shape of each EPZ will be decided by emergency planning officials after they consider the specific conditions at each site. 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. 55406; August 19, 1980; emphasis supplied.)

As noted in the Hubbard Affidavit concerning SOC Contention 1 (paragraph 8), the Shoreham-specific EPZ's have not yet been developed by the responsible local planning officials. Furthermore, as noted in paragraph 28 of that Hubbard Affidavit, an examination of Shoreham site-specific conditions will reveal that 10- and 50-mile EPZ's will not permit extended emergency planning outside those zones due to a number of unique features surrounding the Shoreham site. In particular, should evacuation measures beyond 10 miles be deemed necessary, that evacuation could only be accomplished by passing within or through a 10-mile radius of the plant.

Paragraph 8. As noted in SOC's comments on Applicant's undisputed material facts (paras. 3-4 above), the Commission policy on local determination of the size and shape of EPZ's encourages flexibility. In establishing site-specific EPZ's and emergency planning actions, local planning officials are to consider the same factors (risk, probability, cost effectiveness and accident consequence spectrum) that were considered in establishing the generic EPZ's. Applicant's assertion that generic EPZ's "accomplish that goal" (NUREG 0396 at 16), insofar as that suggests restrictions on the determination of site-specific EPZ's, is also contradicted by the "Guidance on Size of the Emergency Planning Zone" provided in Table 1 on p. 17 of NUREG 0396 (see also paragraph 5 above; paragraphs 11, 26 of Hubbard Affidavit concerning SOC Contention 1).



### III. ARGUMENT

The comments made above on each of Applicant's "undisputed" material facts reveals Applicant's selective editing of critical documents and its mischaracterization of the nature of the Commission's emergency planning rule. What Applicant calls a "challenge to the Commission's regulations" is in fact an entirely permissible assertion by SOC that the generic 10- and 50-mile EPZ's established by the Commission as guidelines for initial planning will be inadequate when the specifics of the Shoreham site are analyzed for emergency planning purposes. Applicant would have the Board curtail the very site-specific analysis which the rule requires and would deny local planners the flexibility to define EPZ's to meet local conditions.

The Hubbard Affidavit on SOC Contention 1 contains a number of material facts which, in SOC's view, are undisputed. Among the most pertinent is the fact that neither Applicant nor the responsible emergency planning officials (New York State and Suffolk County) have performed the Shoreham-specific analyses needed to define the Shoreham-specific distance criteria to be utilized in the State and local emergency plans (Hubbard Affidavit, paras. 5, 8). Thus it is SOC's view that Applicant's Motion to Dismiss SOC Contention 1 is entirely premature.

Although contrary to the emergency planning rule, Applicant, and we believe NRC Staff, are resisting a site-specific analysis for Shoreham which would provide the responsible emergency planning officials with the information necessary to develop the appropriate EPZ's for Shoreham. This resistance is unfortunate and unacceptable for two additional reasons:

(1) There are readily available computer models which can do the necessary analyses;

(2) The analyses have already been done, in whole or in part, but SOC is being denied access to them.

Paragraphs 14-19 of the Hubbard Affidavit on SOC Contention 1 sets forth in detail the nature and function of various models (CRAC; CRAC 2 and CRACIT) which can perform the kind of site-specific analysis for Shoreham required by the Commission's emergency planning rule. As noted at paragraph 17 of the Hubbard Affidavit, "The major difference between these models, apparently, is the relative sophistication of the treatment of the various model components." In their utilization of release magnitudes, population groupings, actual meteorological conditions, responses to radioactive releases, separate population/evacuation grids, etc., the elements of the various "CRAC" models conform very closely to the site-specific factors and other considerations to be considered by the responsible emergency planning officials in their determination of specific EPZ's (see SOC comments on Applicant's para. 3 at pp. 4-5 above).

NRC Staff has run the CRAC Code for Shoreham but has refused to make it available to SOC (see Hubbard Affidavit on SOC Contention 1; para. 19; letter from Bordenick to Latham dated September 9, 1981). Applicant, too, admits that it will conduct an accident consequence assessment "to confirm the effectiveness of emergency planning measures within the generic EPZ's..." (Applicant's Motion on SOC Contention 1, p. 5, footnote 2).

Staff's refusal to make its CRAC analysis for Shoreham available to SOC (and to all parties) has effectively precluded SOC from obtaining the information necessary to evaluate the adequacy of the ultimately determined Shoreham EPZ's and to support--or resolve--Contention 1. Whether or not Staff's CRAC analysis provides the appropriate level of sophistication to develop the appropriate EPZ's for Shoreham can only be determined after the model results have been reviewed by SOC and other parties.

As part of its ruling on Applicant's Motion, SOC asks the Board to order Staff to provide SOC with the CRAC study for Shoreham (together with any related studies or analyses) and to order LILCO to provide SOC with its accident consequence analysis so that SOC and other interested parties can begin their assessment of the adequacy of generic or other EPZ's for Shoreham.

IV. ADDITIONAL ARGUMENT  
REGARDING APPLICANT'S MOTION FOR  
SUMMARY DISPOSITION OF SOC CONTENTION 2

Whereas SOC Contention 1 addressed the inadequacy of the generic 10- and 50-mile EPZ's for the Shoreham site, SOC Contention 2 claims that the emergency planning requirements within the ingestion EPZ itself are inadequate in that they "do not adequately address the effects of releases through the liquid pathway." SOC's concern is hardly surprising since the effects of releases to the liquid pathway were not even specifically discussed in NUREG 0396 (see Hubbard Affidavit Concerning SOC Contention 2; paras. 5, 9).

In support of its Motion...on SOC Contention 2, Applicant offers five material facts as to which there is no genuine issue. SOC agrees with fact 1; facts 2 and 3 (p. 2 of Applicant's Motion) repeat the assertions contained in paragraphs 2 and 3 of Applicant's Motion...on SOC Contention 1. The rebuttals to these facts previously offered by SOC (see pp. 3-5 above) apply equally well here.

With regard to fact 4 (p. 2 of Applicant's Motion...on SOC Contention 2), Applicant's assertion that there is no requirement to analyze releases through the liquid pathway is contradicted by the statement in the rule that:

The plans for the ingestion pathway shall focus on such actions as are appropriate to protect the food ingestion pathway. [10 CFR Section 50.47(c)(2)]

Thus, the need to analyze the effects of releases to the liquid pathway and to develop emergency planning measures to protect the food ingestion pathway are clearly contemplated, if not specifically required, by the rule.

Applicant's assertion in paragraph 5 (p. 3) is rebutted by paragraphs 5 and 9 of the Hubbard Affidavit Concerning SOC Contention 2. Moreover, Attachment A to that Affidavit identifies a recent NRC publication entitled, "The Consequences From Liquid Pathways After A Reactor Meltdown Accident" (NUREG/CR-1596; June 1981). No assessment of this nature was contained in NUREG 0396 or the Commission's emergency planning rule. Thus it is incorrect for the Applicant to suggest that "[t]he Commission concluded that the fifty mile ingestion pathway adequately ensured the health and safety of the public."

As previously noted, the Shoreham-specific EPZ's together with the emergency planning measures to be implemented by the responsible planning entities have not yet been developed for Shoreham. Accordingly, SOC believes a Motion for Summary Disposition of SOC Contention 2 is premature.

Finally, Applicant offers an Affidavit by Brian A. McCaffrey in support of its Motion...on SOC Contention 2. That Affidavit is not particularly helpful to Applicant's case for a number of reasons:

1. It simply avoids the problem by concluding that

Shoreham's structural design features "virtually preclude a core-melt through";

2. Mr. McCaffrey's implied conclusion that liquid pathway effects were adequately considered in WASH-1400 is refuted by para. 9 of the Hubbard Affidavit Concerning SOC Contention 2;

3. The miscellaneous references to NUREG 0440 ("Liquid Pathway Releases"; 1978) would appear to be superceded by the recent NRC publication identified in Attachment A to the Hubbard Affidavit Concerning SOC Contention 2;

4. Mr. McCaffrey boldly concludes, "If problems were to develop, precautions would be taken based on the nature of the threat" (pp. 2-3). That bland assurance obviously contains no probitive value, even if Mr. McCaffrey could demonstrate that he was qualified to make that conclusion, which he chose not to do.

For the foregoing reasons, Applicant's Motion for Summary Disposition of SOC Contention should be denied by the Board.

## V. CONCLUSION

As set forth above, Applicant's Motions For Summary Disposition of SOC Contentions 1 and 2 are without merit and should be denied by the Board. Among the most pertinent considerations for the Board to review are the following:

1. With the exception of fact number 1, each of the "undisputed" material facts offered by Applicant has been refuted by SOC;

2. In view of the fact that the Shoreham-specific EPZ's have not yet been developed by the responsible state and local planning agencies, summary disposition of SOC Contention 1 is, in any case, premature;

3. The NRC admits the inadequacy of its treatment of the effect of releases to the liquid pathway. That deficiency appears to have been remedied through the recent publication of NUREG/CR-1596. Assessment of the emergency planning needs of releases to the liquid pathway is clearly within the scope of the rule;

4. The "generic" 10- and 50-mile EPZ's are not inflexible. The rule and the underlying studies clearly provide that the size and shape of the EPZ's shall be established by the responsible local planners after evaluation of a variety of site-specific factors as well as the concerns that were assessed in determining

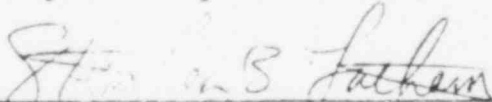
the 10- and 50-mile EPZ's;

5. The flexibility inherent in the Commission's emergency planning rule is particularly appropriate for Shoreham. In view of a number of unique features of the site and its surroundings, SOC believes that after evaluation of site-specific and other factors, it will be determined that the 10- and 50-mile EPZ's are inadequate for Shoreham.

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In its ruling on Applicant's Motions, SOC further requests that the Board order Staff to provide SOC with its CRAC analysis for Shoreham (together with any underlying reports or studies) and that it order Applicant to provide SOC with Applicant's accident consequence assessment.

Respectfully submitted,

  
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Dated: November 2, 1981



LILCO

SOC CONTENTION 1

1. Is it the Applicant's position that the combined off-site emergency plans of the Applicant, local, and state officials are required to be in full compliance with the emergency planning measures set forth in 10 CFR 50, Appendix E and 10 CFR 50.47 which became effective on November 3, 1980, including each of the criteria set forth in NUREG-0654, Rev. 1, dated November, 1980?
2. If the answer to 1 is anything other than a simple affirmative, list each requirement of the regulations which is not applicable and, for each, provide each study, observation or documents which LILCO relies on to support its conclusion.
3. Does the Applicant contend that the combined off-site emergency plans of the Applicant, local, and state officials are now in full compliance with the emergency planning measures set forth in 10 CFR 50, Appendix E, and 10 CFR 50.47 which became effective on November 3, 1980, including each of the criteria set forth in NUREG-0654, Rev. 1, dated November, 1980?
4. If the answer to 3 is a simple affirmative, provide each study, observation, or document which LILCO relies on to support this conclusion including copies of the relevant Applicant, local, and state emergency plans.
5. If the answer to 3 is anything other than a simple affirmative, list each requirement of the regulations which is not currently complied with, and for each, provide each study, observation, or documents which LILCO relies on to support this conclusion.
6. For each of the requirements listed in 5, provide a schedule which sets forth the date when the Applicant believes the non-compliance will be corrected.
7. Is it the Applicant's position that the ten-mile (radius) EPZ for the plume exposure pathway is appropriate for Shoreham?
8. If the answer to 7 is a simple affirmative, provide each site-specific and generic site study, observation, or document on which LILCO relies to support this conclusion, with regard to the following considerations:

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- a. Demography
  - b. Meteorology
  - c. Topography
  - d. Land use characteristics
  - e. Access routes
  - f. Local jurisdictional boundaries
  - g. Release time characteristics
9. If the answer to 7 is anything other than a simple affirmative, provide the dimensions and a detailed diagram and description of the plume exposure pathway EPZ that the Applicant believes is appropriate for Shoreham.
10. For the plume exposure EPZ set forth in 9, provide each site-specific and generic site study, observation, or document which LILCO relies on to support this conclusion, with regard to the following considerations:
- a. Demography
  - b. Meteorology
  - c. Topography
  - d. Land use characteristics
  - e. Access routes
  - f. Local jurisdictional boundaries
  - g. Release time characteristics
11. Does the Applicant contend that a 50-mile (radius) ingestion pathway EPZ is appropriate for Shoreham?
12. If the answer to 11 is a simple affirmative, provide each site-specific and generic site study, observation, or document which LILCO relies on to support this conclusion, including all of the preceding which address the following:
- a. Demography
  - b. Meteorology
  - c. Topography
  - d. Land use characteristics
  - e. Time of year of release
13. If the answer to 11 is anything other than a simple affirmative, provide the dimensions and a detailed diagram and description of the ingestion pathway EPZ that the Applicant believes is appropriate for Shoreham.

14. For the ingestion pathway EPZ set forth in 13, provide each site-specific or generic site study, observation, or document which LILCO relies on to support this conclusion, including all of the preceding which address the following:
  - a. Demography
  - b. Meteorology
  - c. Topography
  - d. Land characteristics
  - e. Time of year of release
  
15. With regard to the responses provided by LILCO to the above interrogatories on SOC Contention 1, who are the persons, if any, on whose opinions and/or knowledge of facts LILCO:
  - a. now relies; and
  - b. expects to rely during the Shoreham operating license hearings?
  
16. Regarding each person identified in the answer to question #15:
  - a. What is the persons's full name?
  - b. What is the persons's address?
  - c. What is the person's present or last known position and business affiliation?
  - d. What is the persons's field of expertise?
  - e. On what date did LILCO first contact or consult the person?
  - f. What are the dates of all subsequent contacts or consultations with the person?
  - g. Were any reports made to LILCO by the person?
  - h. If the answer to question 16g is anything other than a simple negative, indicate for each such report:
    - (1) the date of the report;
    - (2) whether the report was written or oral; and

(3) whether the report was submitted by the person while acting in an advisory capacity, as a prospective witness, or both.

17. For each witness LILCO intends to call during the Shoreham operating license hearings, please answer question 16 and indicate:

- a. What is the subject matter of the witness' testimony?
- b. What are the facts and/or opinions to which the witness will testify and the grounds for each fact or opinion?

SOC CONTENTION 2

1. a. Have any NRC regulations for emergency planning now superceded those previously set forth in the NRC Policy Statement of October 23, 1979, for Shoreham.  
b. If the answer to "a" is affirmative, list all such regulations.
2. It is the Applicant's position that the regulations cited in response to 1 require that emergency planning measures must be designed to mitigate the consequences of hypothetical releases to the liquid pathway as a result of core melt accidents?
3. If the answer to 2 is a simple affirmative, list each of the regulatory criteria which is applicable for the 50-mile (radius) ingestion pathway EPZ relative to liquid pathway releases, and for each, provide each study, observation, or document which LILCO relies on to support this conclusion.
4. If the answer to 2 is anything other than a simple affirmative, list each study, observation, or document which LILCO relies on to support the conclusion that emergency planning to mitigate the consequences of releases from core-melt accidents through the liquid pathway are not encompassed or required by the current NRC regulations.
5. Is it the Applicants' position that the combined off-site emergency plans of the Applicant, local and state authorities now address the effects of releases to the liquid pathway resulting from core-melt accidents?
6. If the answer to 5 is a simple affirmative, provide each study, observation, or document which LILCO relies on to support this conclusion, including copies of the relevant sections of the Applicant, local, and state emergency plans.
7. If the answer to 5 is anything other than a simple affirmative, list each requirement of the regulations which is not currently complied with, and for each, provide each study, observation, or document which LILCO relies on to support this conclusion.
8. For each of the areas of non-compliance listed in 7, provide a schedule which sets forth the date when the Applicant believes the non-compliance will be corrected.

9. Provide a copy of each study, observation, or document which LILCO relies on to assess qualitatively or quantitatively the potential consequences which might occur due to hypothetical releases through the liquid pathway resulting from a core-melt accident at Shoreham. Please include all references to time implicitly or explicitly considered in preparing this response.
10. Provide a list and description of each Shoreham design feature, including interdiction barriers, which the Applicant relies on to conclude that the potential consequences of hypothetical releases through the liquid pathway as a result of core-melt accidents can be mitigated at Shoreham.
11. With regard to the responses provided by LILCO to the above interrogatories on SOC Contention 2, who are the persons, if any, on whose opinions and/or knowledge of facts LILCO:
  - a. now relies; and
  - b. expects to rely during the Shoreham operating license hearings?
12. Regarding each person identified in the answer to question #11:
  - a. What is the persons's full name?
  - b. What is the persons's address?
  - c. What is the person's present or last known position and business affiliation?
  - d. What is the persons's field of expertise?
  - e. On what date did LILCO first contact or consult the person?
  - f. What are the dates of all subsequent contacts or consultations with the person?
  - g. Were any reports made to LILCO by the person?
  - h. If the answer to question 12g is anything other than a simple negative, indicate for each such report:
    - (1) the date of the report;

2) whether the report was written or oral;  
and

(3) whether the report was submitted by the person  
while acting in an advisory capacity, as a  
prospective witness, or both.

13. For each witness LILCO intends to call during the Shoreham  
operating license hearings, please answer question 12 and  
indicate:

- a. What is the subject matter of the witness'  
testimony?
- b. What are the facts and/or opinions to which  
the witness will testify and the grounds for  
each fact or opinion?

July 13, 1981

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  
(Shoreham Nuclear Power Station, )  
Unit 1) )

RESPONSE OF LONG ISLAND LIGHTING COMPANY TO SOC'S JUNE 24  
INTERROGATORIES AND REQUESTS FOR PRODUCTION OF DOCUMENTS

LILCO responds to those Shoreham Opponents Coalition Interrogatories and Requests, dated June 24, 1981, that comply with pertinent rules of practice. Objections are noted to the rest. The case law and regulations supporting the objections have already been set out in LILCO's June 29, 1981 response to earlier SOC interrogatories. They are not repeated here.

As indicated below, some of the Company's replies appear in the accompanying summary disposition papers.

SOC Contention 1

1. As explained in LILCO's attached Motion for Summary Disposition of SOC Contention 1, this contention involves the narrow issues of the adequacy of the generic ten and fifty mile emergency planning zones for Shoreham. Thus, this question is beyond the scope of the contention.

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2. See 1.
3. See 1.
4. See 1.
5. See 1.
6. See 1.
7. Yes.

8. As explained in LILCO's attached summary disposition papers on SOC Contention 1, the ten and fifty mile EPZ's were set generically by the NRC in its emergency planning rulemaking. After considering all relevant factors, the Commission determined that the EPZ's were consistent with its "decision to have a conservative emergency planning policy." See 45 Fed. Reg. 55406 (1980). The emergency planning regulations do not require, and LILCO has not performed, any generic or site-specific studies to confirm the conclusions reached in the rulemaking. LILCO has, however, considered local conditions such as demography, topography, land characteristics, access routes, and jurisdictional boundaries in setting the exact boundaries of the EPZ's. The results of that consideration are set out in section 3 and section 6 of the Shoreham Emergency Plan. SOC was provided with a copy of this document on June 17, 1981. See letter of Charles A. Daverio to Stephen C. Latham, dated June 17, 1981.

9. The precise boundaries of the EPZ's for Shoreham are set out in the Shoreham Emergency Plan.
10. See 8.
11. Yes.
12. See 8.
13. See 9.
14. See 8.
- 15a. The information has been assembled under the supervision and direction of Charles A. Daverio.
- 15b. No decision will be made until it becomes clear what part of SOC Contention 1, if any, will be the subject of hearings.
- 16a-f. See the Daverio credentials included with the attached Daverio Affidavit.
- 16g-h. Mr. Daverio works for LILCO and has had this information assembled to deal with SOC Contention 1. It has not otherwise appeared in "report" form.
- 17a-b. See 15b.

SOC Contention 2

- 1a. Yes.
- 1b. See summary disposition papers on SOC Contention 2.
2. As explained in LILCO's summary disposition papers regarding SOC Contention 2, the NRC considered a core "melt-through" accident in the emergency planning rulemaking.

The NRC concluded that the final rule was adequate to protect the health and safety of the public if such an accident occurred. The Applicant believes that if the emergency requirements set out in the rule are met, the public will be protected in the extremely unlikely event of core melt-through and subsequent release to a "liquid pathway."

3. LILCO is uncertain as to which regulatory criteria SOC is referring.

4. See 2.

5. LILCO's attached Motion for Summary Disposition of SOC Contention 2 discusses in detail the scope of this contention. As admitted by the Board, the contention involves only the adequacy of emergency planning requirements for the fifty mile EPZ. It does not address the specifics of the emergency plans adopted by the Applicant or by state and local authorities. Thus, this question goes beyond the scope of the contention. In any event, the Applicant has explained why releases to the liquid pathway are adequately addressed in existing emergency planning requirements. See the attached Affidavit of Brian R. McCaffrey.

6. See 5.

7. See 5.

8. See 5.

9. LILCO has not completed any qualitative or quantitative assessments of the potential consequences of releases through the liquid pathway due to a core melt at Shoreham. As explained in LILCO's Motion for Summary Disposition of SOC Contention 1, the Company has engaged a consultant to perform an accident consequence analysis. Also, as noted in response to question 2, the NRC has already considered the potential impacts of core melt accidents in setting the emergency planning requirements. LILCO believes that the existing emergency planning requirements adequately protect the public health and safety in the extremely unlikely event of a core melt accident. See attached Affidavit of Brian R. McCaffrey.

10. See 5.

11a. The information has been assembled under the supervision and direction of Charles A Daverio.

11b. No decision will be made until it becomes clear what part of SOC Contention 2, if any, will be the subject of hearings.

12a-f. See the Daverio credentials included with the attached Daverio Affidavit.

12g-h. Mr. Daverio works for LILCO and has had this information assembled to deal with SOC Contention 2. It has not otherwise appeared in "report" form.

13a-b. See 11 b.

SOC CONTENTION 1

NRC

1. Has the NRC determined that the combined off-site emergency plans of the Applicant, local, and state officials are required to be in full compliance with the emergency planning measures set forth in 10 CFR 50, Appendix E and 10 CFR 50.47 which became effective on November 3, 1980, including each of the criteria set forth in NUREG-0654, Rev. 1, dated November, 1980?
- \*\* 2. If the answer to 1 is anything other than a simple affirmative, list each requirement of the regulations which is not applicable and, for each, provide each study, observation, or documents which the NRC relies on to support its conclusion.
3. Does the NRC contend that the combined off-site emergency plans of the Applicant, local, and state officials are now in full compliance with the emergency planning measures set forth in 10 CFR 50, Appendix E, and 10 CFR 50.47 which became effective on November 3, 1980, including each of the criteria set forth in NUREG-0654, Rev. 1, dated November, 1980?
- \*\* 4. If the answer to 3 is a simple affirmative, provide each study, observation, or document which the NRC relies on to support this conclusion including a list of the relevant applicant, local, and state emergency plans.
- \*\* 5. If the answer to 3 is anything other than a simple affirmative, list each requirement of the regulations which is not currently complied with, and for each, provide each study, observation, or documents which the NRC relies on to support this conclusion.
6. For each of the requirements listed in 5, provide a schedule which sets forth the date when the NRC believes the non-compliance will be corrected.
7. Has the NRC determined that the ten-mile (radius) EPZ for the plume exposure pathway is appropriate for Shoreham?
- \* 8. If the answer to 7 is a simple affirmative, provide each site-specific and generic site study, observation, or document on which the NRC relies to support this conclusion, with regard to the following considerations:

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- a. Demography
- b. Meteorology
- c. Topography
- d. Land use characteristics
- e. Local jurisdictional boundaries
- f. Local jurisdictional boundaries
- g. Release time characteristics

9. If the answer to 7 is anything other than a simple affirmative, provide the dimensions and a detailed description of the plume exposure pathway EPZ that the NRC believes is appropriate for Shoreham.
- \* 10. For the plume exposure EPZ set forth in 9, provide each site-specific and generic site study, observation, or document which the NRC relies on to support this conclusion with regard to the following considerations:
- a. Demography
  - b. Meteorology
  - c. Topography
  - d. Land use characteristics
  - e. Access routes
  - f. Local jurisdictional boundaries
  - g. Release time characteristics
11. Does the NRC contend that the 50-mile (radius) ingestion pathway EPZ is appropriate for Shoreham?
- \* 12. If the answer to 11 is a simple affirmative, provide each site-specific and generic site study, observation, or document which the NRC relies on to support this conclusion, including all of the preceding which address the following:
- a. Demography
  - b. Meteorology
  - c. Topography
  - d. Land use characteristics
  - e. Time of year of release
13. If the answer to 11 is anything other than a simple affirmative, provide the dimensions of the ingestion pathway EPZ that the NRC believes is appropriate.
- \* 14. For the ingestion pathway EPZ set forth in 13, provide each site-specific or generic site study, observation, or document which the NRC relies on to support this conclusion, including all of the preceding which address the following:

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- a. Demography
- b. Meteorology
- c. Topography
- d. Land characteristics
- e. Time of year of release

15. Provide each study, observation, or document which the NRC Staff relied on to establish the generic 10 and 50-mile (radius) EPZ requirements in the current NRC regulations as set forth in Interrogatories 1 and 3 above.

SOC CONTENTION 2

1. a. Has the NRC issued regulations for emergency planning which have now superceded those previously set forth in the NRC Policy Statement of October 23, 1979, for Shoreham?
  - b. If the answer is affirmative, list all such regulations.
2. Does the NRC contend that the regulations cited in response to 1 require that emergency planning measures must be designed to mitigate the consequences of hypothetical releases to the liquid pathway as a result of core melt accidents?
- \*\* 3. If the answer to 2 is a simple affirmative, list each of the regulatory criteria which is applicable for the 50-mile (radius) ingestion pathway EPZ relative to liquid pathway releases, and for each, provide each study, observation, or documents which the NRC relies on to support this conclusion.
- \* 4. If the answer to 2 is anything other than a simple affirmative, list each study, observation, or document which the NRC relies on to support the conclusion that emergency planning to mitigate the consequences of releases from core-melt accidents through the liquid pathway are not encompassed or required by the current NRC regulations.
5. Has the NRC determined that the combined off-site emergency plans of the Applicant, local and state authorities now address the effects of releases to the liquid pathway resulting from core-melt accidents?
- \* 6. If the answer to 5 is a simple affirmative, provide each study, observation, or document which the NRC relies on to support this conclusion, including copies of the relevant sections of the Applicant, local, and state emergency plans.
- \*\* 7. If the answer to 5 is anything other than a simple affirmative, list each requirement of the regulations which is not currently complied with, and for each, provide each study, observation, or document which the NRC relies on to support this conclusion.
8. For each of the areas of non-compliance listed in 7, provide a schedule which sets forth the date when the NRC believes the non-compliance will be corrected.
- \* 9. Provide a copy of each study, observation, or document which the NRC relies on to quantify, qualitatively or



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quantitatively, the potential consequences which might occur due to hypothetical releases through the liquid pathway resulting from a core-melt accident at Shoreham. Please include all references to time implicitly or explicitly considered in preparing this response.

10. Provide a description of each Shoreham design feature, including interdiction barriers, which the NRC relies on to determine that the potential consequences of hypothetical releases through the liquid pathway as a result of core-melt accidents can be mitigated at Shoreham.

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

NRC STAFF'S ANSWERS TO "SOC'S FIRST SET OF  
INTERROGATORIES AND REQUESTS FOR PRODUCTION OF DOCUMENTS \* \* \* \*"

Pursuant to the "Stipulation Relating to NRC Staff \* \* \*" dated July 20, 1981, and the "\* \* \* Stipulation Regarding SOC's Pending Discovery Requests \* \* \*" dated August 6, 1981, the NRC Staff herewith responds to the following indicated portions of "SOC's First Set of Interrogatories and Requests for Production of Documents to the Nuclear Regulatory Commission Staff" dated July 2, 1981.

SOC Contention 1

1. No.
2. Of the regulations identified in interrogatory 1, only those that pertain to operating license applications are applicable.
3. No.
4. Not applicable.
5. Since the emergency plans are still under review, a response to this interrogatory cannot be made at the present time.
6. Not applicable.

7. Yes.
8. 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.
9. Not applicable.
10. Not applicable.
11. Yes.
12. See answer to 8 above.
13. Not applicable.
14. Not applicable.
15. See answer to 8 above.

SOC Contention 2

1. a. No.  
b. Not applicable.
2. Not applicable.
3. Not applicable.
4. The NRC does not support the conclusion stated in Interrogatory 4. Therefore, we cannot provide the requested items.
5. No.
6. Not applicable.
7. See response to Interrogatory 5 relating to SOC Contention 1 above.
8. Not applicable.
9. There are none.
10. There are none.