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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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USNRC

BEFORE THE COMMISSION

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In the Matter of

LONG ISLAND LIGHTING COMPANY

(Shoreham Nuclear Power Station,  
Unit 1)

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)

Docket No. 50-322-OL-4  
(Low Power)

NRC STAFF COMMENTS IN RESPONSE TO  
COMMISSION ORDER OF NOVEMBER 19, 1984

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November 29, 1984

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I. INTRODUCTION

On October 29, 1984, the Shoreham Licensing Board considering LILCO's Supplemental Motion for Low-Power Operating License (dated March 20, 1984) and Application for Exemption (dated May 22, 1984) issued an Initial Decision granting the requested exemption from GDC-17 (and any related applicable regulatory requirements) and authorizing issuance of a low power operating license at power levels up to 5% of rated power. Under the terms of the Commission's Order of May 16, 1984 (CLI-84-8), the Board's authorization of an exemption can not become effective until the Commission has conducted an immediate effectiveness review of the authorization. Accordingly, the Licensing Board transmitted its Initial Decision directly to the Commission to enable the Commission to perform its effectiveness review.

On October 31, 1984, Interveners Suffolk County and New York State jointly requested an opportunity to submit briefs on various aspects of the Licensing Board's Initial Decision and two earlier decisions by the Board (its September 5, 1984 Order reconsidering and granting summary

disposition of Phases I and II of LILCO's low power motion, <sup>1/</sup> and its September 19, 1984, order dismissing proposed security contentions). On November 19, 1984, the Commission granted Intervenors' request in part and issued an Order permitting the parties to submit written comments concerning the correctness of the Licensing Board's application of the criteria set forth by the Commission in CLI-84-8 to Phases III and IV of low power operation. The Staff offers the following comments and, for the reasons presented below, submits that the Licensing Board was (with minor exceptions) correct in its application of the criteria set forth in CLI-84-8 to the facts of this case.

## II. DISCUSSION

In CLI-84-8, the Commission instructed that in order to qualify for an exemption, LILCO should address in its exemption application the following factors:

1. The "exigent circumstances" that favor the granting of an exemption under 10 C.F.R. 50.12(a) should it be able to demonstrate that, in spite of its noncompliance

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<sup>1/</sup> LILCO divided its supplemental low power motion into four phases: Phases I and II involve fuel loading and pre-critical and cold-critical testing, Phase III involves testing at up to 1% of rated power, and Phase IV involves testing at up to 5% of rated power. On November 21, 1984, the Commission issued an order (CLI-84-21) conditionally authorizing (dependent upon the determinations of another Licensing Board with respect to 3 issues remanded to that Board by the Appeal Board in ALAB-788) the issuance of a low power license for Phases I and II. This pleading addresses solely issues associated with Phases III and IV of LILCO's Supplemental Motion.

with GDC 17, the health and safety of the public would be protected.

[and]

2. Its basis for concluding that, at the power levels for which it seeks authorization to operate, operation would be as safe under the conditions proposed by it, as operation would have been with a fully qualified onsite A/C power source.

In reaching a determination as to whether "exigent circumstances" have been shown, the Commission instructed the Licensing Board to take into account "the equities of each situation." The Commission listed the following as the equities to be considered: "stage of the facility's life; any financial or economic hardships; any internal inconsistencies in the regulation; the applicant's good-faith effort to comply with the regulation from which an exemption is sought; the public interest in adherence to the Commission's regulation; and the safety significance of the issues involved."

The Licensing Board had little precedential guidance in applying either the "as safe as" or the "exigent circumstances" test. In addition to relying on papers filed by the parties, the Board held an oral argument on August 16, 1984 (Tr. 2969 et seq.) to give the parties an opportunity to fully air their views on how the tests should be applied. The Board utilized a common sense approach in its application of the standards set forth in CLI-84-8 to the facts developed at the evidentiary hearing; the Staff will evaluate that approach as it applied to each of the tests propounded by the Commission.

A. As Safe As

The parties below differed on their definition of the "as safe as" standard. As described by the Board in its Decision (at 22-23), LILCO took the position that low power operation at Shoreham as proposed by LILCO with the exemption would be as safe as low power operation with an emergency power system in full compliance with GDC 17 because in both events there would be no effect on the public health and safety. The County and State argued that operation under the exemption would reduce various margins of safety; Intervenors seemed to take the position that the alternate power sources proposed for use with the exemption must be equivalent in all respects to fully qualified power sources.

The Staff advocated a functional approach to this question. The uncontroverted evidence showed that in the worst case accident scenario (a large-break loss of coolant accident accompanied by a loss of off-site power) LILCO would have at least 55 minutes before power would need to be restored to equipment necessary to protect against the consequences of the accident. According to the Staff's approach, if it could be shown that there exists adequate assurance that power could be restored in less than 55 minutes using LILCO's proposed alternate power sources, the alternate power system would provide a comparable level of safety as a system in full compliance with GDC 17 and thus would meet the "as safe as" standard. See also Oral Argument, Tr. 3026-3035; Staff Proposed Findings at 23 (¶ 47).

The Board adopted the Staff's approach to the "as safe as" standard (Decision at 23). An example cited by the Board in its Decision (at 23-25) demonstrates the rationality of this approach. The County argued that a fully qualified power system could supply power to safety loads in

10 to 15 seconds, while the alternate sources proposed by LILCO would take at least "several minutes" and possibly as long as 30 minutes. According to the County, this constitutes an unacceptable reduction in the margin of safety provided at Shoreham. See e.g., County Brief of August 31, 1984, at 8-9, 54-55.

The County's argument ignores the uncontroverted evidence that if power is restored within 55 minutes, there would be no adverse safety effects from the worst-case accident that could occur during low power operation (See Decision at 33-39). If power is restored within 55 minutes, the limits in 10 CFR § 50.46(b) <sup>2/</sup> would not be exceeded and certainly no fuel failures would occur. See Staff Findings at 9-12. The testimony showed, for example, that if power were restored within 15 seconds of a loss of coolant accident, core peak cladding temperature would reach 550° F. If power were not restored for 30 minutes, the peak cladding temperature would reach 1086° F. This compares with the limit in 10 CFR § 50.46(b) of 2200° F; unchallenged testimony indicated that fuel failures would not occur until temperatures well in excess of 2200° F are reached (Staff Findings at 10; Tr. 1786-88 (Hodges)). Under these circumstances, the Staff's witness Wayne Hodges described the difference in safety margins as equivalent to the difference between driving in the inside and outside lanes of a bridge (Tr. 1751). Clearly where the evidence showed that restoration of power within 55 minutes after the worst case

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<sup>2/</sup> 10 CFR § 50.46 sets out acceptance criteria for the emergency core cooling system (ECCS). According to Section 50.46(b), the ECCS should assure that various limits associated with core cooling not be exceeded following loss of coolant accidents.

accident would prevent any core damage or fuel failures, the Board was correct in finding that if LILCO's proposed system would restore power well within that time period it would provide a level of protection "as safe as" a system in compliance with GDC 17 that would restore power in an even shorter period of time.

The second portion of the Staff's analysis involves adequate assurance that power would in fact be restored within 55 minutes. Here again, the Staff did not assert (and the Board did not find) that there could be no differences between LILCO's proposed power system and a fully qualified system, but rather that any such differences must have a negligible effect upon safety. The Board dealt with the factual controversies touching upon whether power would be supplied in 55 minutes at pages 39-55 of its Decision; the Staff has set forth its views on the related facts litigated below at pages 12-23 of the Staff's Proposed Findings of Fact. The Staff believes the Board correctly assessed the evidence adduced at hearing in determining that there is reasonable assurance that LILCO's proposed alternate power source would restore power within 55 minutes in the event of a loss of coolant accident accompanied by a loss of off-site power. The Board properly concluded that LILCO's proposed power system has "the required redundancy, meets the single failure criterion and has sufficient capacity, capability and reliability to supply adequate emergency power for low power operation of the Shoreham unit" (Decision at 54) and that "there is adequate assurance that the enhanced system can supply sufficient power within 55 minutes in the event of a concurrent LOCA and loss of offsite power" (Decision at 55). The Staff submits that the evidence clearly supported such findings



and that these findings, coupled with the largely uncontroverted finding (see Decision at 38-39) that if power is restored within 55 minutes there will be no adverse impact upon the public health and safety, compel a conclusion that Shoreham operation at up to 5% power with LILCO's proposed power system would be "as safe as" 5% operation with a system in full compliance with GDC 17.

B. Exigent Circumstances

The Board dealt with the "exigent circumstances" standard at pages 56-70 of its Decision. As noted previously, the Commission in CLI-84-8 identified various equities that are to be balanced in assessing whether exigent circumstances exist. The Board analyzed each equity separately and determined that the requisite balancing favored grant of the exemption.

The Staff believes that the Board erred in part in analyzing the equities of this case, but agrees with the Board that on balance the equities favor grant of the exemption (see Staff Proposed Findings at 24-32). We offer brief comment on each equity below.

1. Stage of Facility's Life

The testimony clearly showed that the facility is essentially complete and thus favors the grant of an exemption. Decision at 59-60; Staff Findings at 24.

## 2. Financial or Economic Hardship

The Board found that earlier operation of Shoreham would be beneficial to LILCO and its rate payers, would reduce the nation's dependence on foreign oil, and that the costs of this proceeding should be taken into account in evaluating financial hardship. Decision at 60-63. The Staff does not quarrel with the Board's finding that LILCO would suffer a financial hardship if operation of the plant were to be delayed. Similarly, the Staff agrees that earlier operation of Shoreham by three months would displace some amount of foreign oil (but only for a similar three month period). The Staff believes, however, that the evidence as to whether rate payers would profit by earlier operation was inconclusive (essentially this issue comes down to speculation as to whether rate payers are better off paying less money for the plant at an earlier date or more money at a later date). Finally, although the Staff agrees that the Shoreham licensing process has been a long, bitter, and expensive one for LILCO, the Staff does not believe the previous length and expense of the process should be taken into account in determining whether to grant an exemption from a safety regulation. The Staff submits that the exemption request should be judged on its own merits, and not on whether the requesting applicant has been involved in expensive litigation before the NRC on somewhat related grounds.

## 3. Internal Inconsistencies in the Regulations

The Board found that the Commission's regulations had been inconsistently applied to Shoreham as compared to other plants, particularly as they apply to the granting of exemptions. Decision at 63-66. While the Staff agrees that the exemption standard for this

proceeding is now somewhat unique (see July 27, 1984 Memo from Chilk to Dircks and Plaine re SECY-84-290/290A), the Staff believes that the appropriate focus of this equity must be upon whether there are inconsistencies in the regulations related to the specific exemption request itself (in this case, whether the regulations concerning electric power sources, primarily GDC 17, contain any internal inconsistencies as they relate to low power operation). Although the Staff earlier took the position that there were certain inconsistencies surrounding the relationship between GDC 17 and the provisions governing low power operation (10 CFR §§ 50.57(a) and (c)), those inconsistencies were resolved by the Commission in CLI-84-8 and the Staff no longer believes that there are any internal inconsistencies in the regulations that are related to this exemption request.

#### 4. Good-Faith Effort to Comply With Regulations

The Board found (Decision at 67) that LILCO had always intended to comply with GDC-17, that extensive efforts were made to assure compliance, that such efforts are continuing, and that LILCO intends to comply with GDC-17 for full power operation. These findings are all fully supported by the evidence. See Staff Findings at 29-30.

#### 5. Public Interest in Adherence to Regulations

In light of the Board's finding that LILCO had made a good-faith effort to comply with GDC-17 and is requesting only a temporary exemption, the Board properly found (Decision at 68) that granting the requested exemption would not lessen the public interest in adherence to the Commission's regulations.

6. Safety Significance of Issues Involved

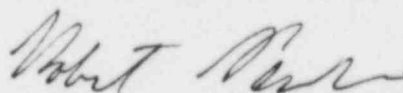
Inasmuch as the Board found that granting the exemption would result in operation "as safe as" operation without the exemption, the Board was clearly correct in finding (Decision at 69) that the issues involved in the exemption request are of no safety significance.

The Board balanced the equities discussed above and found they favored grant of the exemption. Although the Staff disagrees in part with the Board's findings on certain of the equities, the Staff fully agrees that a balancing of the equities favors the issuance of an exemption.

III. CONCLUSION

For the reasons presented above, the Staff submits that the Licensing Board correctly applied the standard established in CLI-84-8 to the facts of record in this case.

Respectfully submitted,



Robert G. Perlis  
Counsel for NRC Staff

Dated at Bethesda, Maryland  
this 29th day of November, 1984

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CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF COMMENTS IN RESPONSE TO COMMISSION'S ORDER OF NOVEMBER 19, 1984" 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, by deposit in the Nuclear Regulatory Commission's internal mail system this 29th day of November, 1984:

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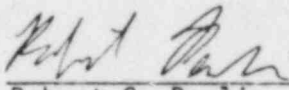
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