UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Director, Office of Nuclear Reactor Regulation

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

Long Island Lighting Company's Request for a Limited-Scope Exemption from the Seismic Qualification Requirements of Criterion 2, Appendix A, 10 CFR 50

I. Introduction

Pursuant to 10 CFR 50.12, the Long Island Lighting Company (LILCO or the Company) hereby requests a limited-scope exemption from the seismic qualification requirements imposed by Criterion 2 of Appendix A to 10 CFR 50. Specifically, LILCO requests that the scope of the Shoreham Nuclear Power Station (SNPS or Shoreham) Seismic Qualification Program for 125V DC power system batteries 1R42*BA-A1 and 1R42*BA-C1, whose documented qualified seismic lives expire June 1991, and which otherwise fully comply with the Commission's regulations, be modified to permit their deletion subsequent to the expiration of their documented qualified seismic lives. LILCO also requests that the exemption be granted and remain in effect until such time as the Commission approves LILCO's request for a Possession Only license.

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II. The Exemption Is Authorized By Law, Will Not Present An Undue Risk To The Public Health And Safety And Is Consistent With The Common Defense and Security.

The legal standard for obtaining an exemption from the seismic qualification requirements of 10 CFR 50, Appendix A, Criterion 2 is provided by 10 CFR 50.12(a)(1) which provides that, upon application by an interested person, the Commission may

> grant exemptions from the requirements of the regulations of this part which are authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security.

Further, 10 CFR 50.12(a)(2) provides in part that the Commission

> will not consider granting an exemption unless special circumstances are present. Special circumstances are present whenever -
> (ii) Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule; or
> (vi) There is present any other material circumstance not considered when the regulation was adopted for which it would be in the public interest to grant an exemption.

LILCO's request satisfies the standards cited above.

First, the Commission is plainly authorized by law to grant LILCO an exemption concerning requirements for the seismic qualification of equipment. This application for exemption complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations.

Second, the exemption will not present an undue risk to the public health and safety for the following reasons:

1. Under the Settlement Agreement with the State of New York, LILCO is contractually prohibited from ever operating Shoreham.

2. Shoreham has been defueled and all fuel has been placed in the Spent Fuel Storage Pool.

3. In accordance with the Commission's Confirmatory Order Modifying License (NPF-82) issued March 29, 1990, LILCO is prohibited from placing any nuclear fuel into the Shoreham reactor vessel without prior approval from the NRC.

4. Design basis accidents for Shoreham in a defueled condition are described in Chapter 15 of the Defueled Safety Analysis Report (DSAR) submitted via SNRC-1664 (January 5, 1990). The DSAR, supported by LILCO's technical report, "Radiological Safety Analysis for Spent Fuel Storage and Handling," submitted to the NRC via SNRC-1651 (December 15, 1989), establishes that Shoreham's spent fuel is in a low burnup condition (equivalent to two full power days) and that the amount of decay heat being generated by the fuel in the Spent Fuel Storage Pool as of June 1989 is negligible -- approximately 550 watts. The decay heat currently being

generated is approximately 300 watts. With the fuel in such a low burnup condition, the safety analysis indicates that active systems for storage pool water makeup are not required and that passive cooling in the Spent Fuel Storage Pool is sufficient to maintain fuel cladding integrity.

Based on its safety analysis, LILCO has determined that the consequences of previously evaluated accidents are greatly decreased given Shoreham's non-operating, defueled status. The safety analysis reviewed the spectrum of accidents evaluated in the Shoreham Updated Safety Analysis Report (USAR) and identified those events that apply to the storage and handling of spent fuel. Two events have been found to be relevant: (1) Fuel-Handling Accident (USAR Section 15.1.36), and (2) Liquid Radwaste Tank Rupture (USAR Section 15.1.32). For the Fuel-Handling Accident, the safety analysis calculated that the integrated whole body dose (1.74E-06 rem) is well below the Environmental Protection Agency's Protective Action Guides (EPA PAGs) for protecting the public from exposure (1-5 rem whole body dose). For the Liquid Radwaste Tank Rupture Accident, the whole body dose (1.80E-08 rem) is also much less than the EPA PAG limits. The safety analysis also postulated a "worst case" radiological event in which the total gaseous inventory of the core is released. For this event the whole body dose (1.08E-03 rem) is still well below the EPA PAG limits.

Based on the analysis of possible events at Shoreham, LILCO concludes that there is no credible accident for Shoreham in the defueled condition which could result in the release of radioactive materials to the environment in quantities which would require protective actions for the public.

The NRC Staff has reviewed this analysis and concurs with the LILCO conclusion stated above (See Section 2.0 of the Safety Evaluation by the Office of Nuclear Reactor Regulation supporting Proposed Exemption and Amendment No. 6 to Facility Operating License NPF-82 dated July 31, 1990).

5. The exemption will not place Shoreham in a degraded plant condition. Shoreham is in a non-operating and defueled condition and the 125V DC batteries no longer serve a safety-related purpose.

Third, granting the exemption would have no impact on the "common defense and security" of the United States. See Florida Power and Light Co. (Turkey Point Nuclear Generating Station, Units 3 and 4), 4 AEC 9, 12 (1967).

III Special Circumstances Are Present

Regarding the existence of special circumstances which justify the exemption, 10 CFR 50.12(a)(2)(ii) applies to Shoreham's situation:

Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule.

For operating nuclear plants, seismic qualification of equipment is essential to safety and regulations exist so that safety-related electric equipment, which is relied upon to remain functional during and following design basis events, ensures (1) the integrity of the reactor coolant pressure boundary, (2) the capability to shut down the reactor and maintain it in a safe shutdown condition, and (3) the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposures comparable to the 10 CFR 100 guidelines. LILCO's safety analysis (see item 4 above) determined that no credible accident can occur at Shoreham in its defueled configuration that would adversely affect the public health and safety in terms of offsite radiological consequences. Considering the defueled condition and low-burnup fuel at Shoreham, requiring LILCO to continue to meet the full seismic qualification requirements of Criterion 2 in this instance is not necessary in order to achieve the underlying purpose of the Criterion. LILCO will be fully capable of responding adequately to the spectrum of credible accidents that could occur at Shoreham in its defueled condition even in the unlikely situation of the unavailability of all 125V DC batteries.

10 CFR 50.12(a)(2)(vi) also applies to Shoreham's situation:

> There is present any other material circumstance not considered when the regulation was adopted for which it would be in the public interest to grant an exemption.

The material circumstance present today which was not considered when the regulation was adopted is the Settlement Agreement in effect between LILCO and New York State. In accordance with this Settlement Agreement, LILCO will not operate Shoreham, is cooperating with officials of New York State to transfer Shoreham to the Long Island Power Authority (LIPA), and is maintaining Shoreham on a safe cost-effective basis.

Shoreham's 125V DC batteries had an originally documented qualified seismic life of ten years. The B1 battery was replaced in 1988 providing a seismic qualified life to the year 2003. The seismic life for the A1 and C1 batteries was extended to fifteen years-nine months based on the testing performed at the time for GNB Incorporated (GNB). Based on the currently updated documentation, which extended the battery life, the A1 and C1 battery seismic life will expire in June 1991. To generate seismic qualification of a 19+-year old battery which was used previously in the qualification of Shoreham batteries, GNB has informed LILCO that the seismic test would cost approximately $40,000 to $50,000. If successful, this test would only extend the seismic life of the Shoreham A1 and C1 batteries from 15.75 to 19 years (new qualified seismic life expiration of September

1994). At present, LILCO cannot predict the success or failure of the GNB seismic tests. If the battery test is not successful, then new batteries would have to be purchased. Battery replacement is estimated to cost approximately $120,000 to $150,000 per battery and would routinely require approximately 34 weeks. If new batteries were required onsite and operational by the end of June 1991, LILCO estimates that appropriate actions under an expedited schedule would have to be initiated no later than January 1, 1991. Since battery purchase and installation is a long lead item, this would become a critical path task if fuel has to be moved in accordance with the existing SNPS technical specifications. Based on Shoreham's non-operating and defueled, low-burnup condition, this expenditure is unnecessary and presents an undue hardship on LILCO.

IV Shoreham Is As Safe With The Limited-Scope Exemption As It Is Without It.

USAR Table 8.3.2-1 lists the safety-related loads on the three safety-related 125V DC batteries. The safety-related equipment constituting loads on each battery was designed to perform one or more of the following safety-related functions:

(1) Assure the integrity of the reactor coolant pressure boundary,

(2) Assure the capability to shutdown the reactor and maintain it in a safe shutdown condition, or

(3) Assure the capability to prevent or mitigate the consequences of accidents which could result in

potential offsite exposures comparable to the 10 CFR 100 limits.

Given Shoreham's non-operational, defueled mode and the March 29, 1990 Confirmatory Order modifying the Shoreham operating license to ensure that the Shoreham reactor remains defueled, these battery loads no longer perform any of the safety-related functions indicated above. Additionally, 13 of 27 loads no longer exist as the equipment is in a deenergized preserved state in accordance with the Shoreham System Layup Implementation Program. Most of the loads which are still connected are associated with emergency diesel generator operation.

LILCO's analyses have also concluded that the emergency diesel generators do not perform safety-related functions in the defueled condition (see Sections 3 and 8 of Attachment 3 to SNRC-1664 dated January 5, 1990). Therefore, in the defueled condition, Shoreham is as safe with the limited scope exemption as it is without it.

III. Conclusion

For the reasons given above, LILCO respectfully requests a limited-scope exemption from the requirements of 10 CFR 50, Appendix A, Criterion 2 as its relates to the seismic qualification of station batteries 1R42*BA-A1 and 1R42*BA-C1 until such time as the NRC approves LILCO's request for a Possession Only license.

Respectfully submitted,

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MAP/ap

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