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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of	)	
	)	
LONG ISLAND LIGHTING COMPANY	)	Docket No. 50-322-OL-4
	)	(Low Power)
(Shoreham Nuclear Power Station, Unit 1)	)	

NRC STAFF RESPONSE TO COMMISSION ORDER OF JANUARY 7, 1985

Robert G. Perlis
Counsel for NRC Staff

January 14, 1985

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I. Introduction

On October 29, 1984, the Licensing Board presiding over the Shoreham low power exemption proceeding issued an initial decision authorizing the grant of the requested exemption and the issuance of a low power operating license (at up to 5% of rated power) for the Shoreham facility. By the terms of CLI-84-8 (19 NRC 1154 (1984)), the Board's initial decision was forwarded directly to the Commission for the conduct of an immediate effectiveness review.

In an Order dated November 19, 1984, the Commission invited the parties to submit comments (of fifteen pages or less) on whether the Board's decision was a correct application of the "as safe as" and "exigent circumstances" criteria set forth in CLI-84-8. The parties duly filed their comments on November 29th; Suffolk County and the State of New York subsequently filed additional pleadings. In an Order dated January 7, 1985, the Commission announced its decision to disregard the unauthorized pleadings filed after November 29th and invited the

parties to file responses to the November 29th filings of the other parties. The Commission specifically asked the Staff and LILCO to address the following arguments advanced by the State and County:

> (1) That the Board erred by excluding evidence purporting to show that grant of the exemption would be economically disadvantageous to ratepayers and was not needed for adequate power supply, while admitting evidence on the economic advantages of granting the exemption.
>
> (2) That the Board erred in excluding evidence, including PRA and functional systems comparisons, purporting to show that the alternate onsite A/C system was not as safe as a fully qualified system, while admitting evidence on the reliability of the alternate system.
>
> (3) That the Board misapplied the "as safe as" criterion listed in the May 16 order by using a "comparable protection" standard.

The Staff herein responds to the Commission's January 7th Order.

II. Discussion

In its comments filed on November 29, 1984, the Staff explained the basis for its belief that, with the minor exceptions noted, the Licensing Board in its decision of October 29th correctly applied the criteria established by the Commission in CLI-84-8. The Staff has reviewed the November 29th comments filed by the other parties and sees no need to comment on any issues other than those identified by the Commission in its January 7th Order. Accordingly, the Staff will limit its comments in this pleading to the three arguments of the State and County identified in the Commission's Order.

A. The Exclusion of Testimony on the Economic Disadvantages of Granting the Exemption

The first argument the Commission asked the Staff (and LILCO) to address is whether the Board erred in "excluding evidence purporting to show that grant of the exemption would be economically disadvantageous to ratepayers and was not needed for adequate power supply, while admitting evidence on the economic advantages of granting the exemption." In fact, the Board did not exclude all evidence purporting to show that grant of the exemption would work a financial hardship on Shoreham ratepayers. The Board admitted into evidence the first twenty-one pages of the testimony of County witnesses Madan and Dirmeier (see Tr. 2089) wherein the witnesses attempted to demonstrate that early operation (as opposed to later operation) of Shoreham would be financially detrimental to the Shoreham ratepayers. 1/ As is clear from the discussion in their November 29th comments (at pp. 12-14), the real argument of the State and County in this area is that the Board refused to admit evidence on the financial hardships that might result if low-power operation were permitted and authorization for full-power operation were subsequently denied.

To put this matter in context, LILCO's testimony on the financial benefits that might accrue from grant of the exemption rested on the assumption that full-power operation would take place sooner if the

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1/ Although admitted into evidence at Tr. 2089, it appears that the first twenty-one pages of the direct testimony of Messrs. Madan and Dirmeier were never bound into the transcript of the proceeding. The admitted testimony is nonetheless a part of the record of the proceeding.

exemption were granted than it would if the exemption were denied. The County's testimony challenging this testimony (the first 21 pages of the Madan/Dirmeier testimony) was allowed. The Board, however, did not allow testimony which focused on the results of issuance of a low-power license with a subsequent denial of a full-power license.

The Board's rejection of such testimony was consistent with previous Commission rulings on similar subjects. The Commission has twice ruled in the Shoreham full-power operating license proceeding that the issuance of a low-power license is not contingent on the likelihood of eventual issuance of a full-power license. See CLI-83-17, 17 NRC 1032 (1983) (if LILCO meets the regulations for low power, LILCO is entitled to a low-power license notwithstanding any uncertainties concerning whether the status of off-site emergency planning would prevent a full-power license from ever issuing); CLI-84-9, 19 NRC 1323 (1984) (speculation as to whether a full-power license will issue does not require a new NEPA evaluation for issuance of a low-power license). Suffolk County's argument is essentially a rehash of its twice-rejected argument that a low-power license should not issue until all full-power issues are resolved.

The relevant issue insofar as exigent circumstances is concerned was not whether a low-power license should issue, but rather when such a license might issue. It is clear from the Commission's rulings that LILCO will be entitled to a low-power license whenever the utility can demonstrate compliance with GDC-17. It is equally clear that LILCO is actively taking steps to achieve compliance with GDC-17 (though the ongoing Shoreham TDI litigation and the installation of Colt diesel

engines at the site) and that (absent another exemption which has not been sought) such compliance must be demonstrated before Shoreham operation above 5% power can be approved. Under the circumstances, the Board was correct in limiting the testimony on economic benefits and hardships to the question of whether earlier (as opposed to later) grant of a low-power license would yield benefits or hardships and refusing to admit testimony that could only become relevant if the Board were to consider the subject (twice rejected by the Commission) of whether a low-power license should issue absent any guarantee that a full-power license might issue.

b. The Board Did Not Err In Excluding Suffolk County's PRA Testimony

Suffolk County attempted to sponsor testimony from Robert Weatherwax and Gregory Minor purporting to show that, based on a probabilistic risk assessment these gentlemen did not prepare, the core vulnerability from loss of off-site power events using LILCO's emergency power configuration proposed for use with the exemption (3.3×10^{-6}/year) would be approximately seven times greater then if the site utilized the TDI diesel generators as originally called for in the Shoreham FSAR ($.44 \times 10^{-6}$/year). After hearing arguments from the parties (Tr. 2844 et seq.), the Board granted a motion to strike the testimony in question (Tr. 2857-58). In their comments of November 29th (at pp. 17-19) the State and County complain that in so ruling, the Board denied those parties a right to a fair hearing. The State and County further contend that the Board failed to allow those parties the chance to demonstrate the "vulnerabilites and inferiorities" of LILCO's proposed alternate emergency power configuration (Comments at 19).

This argument is both misleading and incorrect. First, the State and County were given (and took) the opportunity to present evidence on the adequacy of LILCO's proposed alternate configuration. Testimony on the capabilities and overall adequacy of LILCO's proposed configuration was offered (and admitted by the Board) from the County's panel of Eley, Smith, Minor and Bridenbaugh (Tr. 2572-2620); the County also proffered testimony on the configuration's seismic capabilities (Meyer, Roesset and Minor (Tr.2762-2819)). 2/ The State's and County's complaint that the Miller Board found irrelevant evidence concerning the vulnerability of the alternate configuration to single failures (Comments at 19) is simply misleading; what the Board found irrelevant was County testimony that one component of the configuration (the EMD diesels) was vulnerable to single failures. 3/ See Initial Decision at 50-51. The State and County seem to argue that they were prevented from filing any testimony on the "as safe as" finding; in fact, the only testimony struck on this issue was the County's PRA testimony.

The Board struck the PRA testimony because it found that the parties had supplied sufficient deterministic evidence to allow the Board to make

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2/ The Licensing Board properly found that, under low power conditions, the emergency power sources did not need to be seismically qualified. See Initial Decision at 51-55. While the County may not agree with this ruling, it can hardly contend that the Board denied the County the opportunity to develop a case on the seismic capability of the equipment.

3/ LILCO's alternate configuration consisted of a 20 MW gas turbine as well as 4 EMD diesel engines.

its safety determination and further that the PRA testimony was not relevant to the issues raised in the proceeding. Tr. 2858. The Board's ruling was legally correct; in offering the testimony, the County misapprehended both the Commission's policy on probabilistic risk assessment and the standard by which LILCO's exemption was to be judged.

First, although the Commission has found that PRA's can be useful tools in assessing the cost-effectiveness of risk-reduction measures (see, e.g., Proposed Commission Policy Statement on Severe Accidents, 48 Fed. Reg. 16013 (April 13, 1983)), the Commission has stressed that caution should be used in applying PRA's to licensing decisions because of the "large uncertainties inherent in the existing probabilistic risk assessments and that "existing requirements contained in current regulations are adequate to protect the public health and safety" (Policy Statement on Safety Goals for the Operation of Nuclear Power Plants, 48 Fed. Reg. 10,772 (March 14, 1983)). Given the uncertainties associated with PRA, the Licensing Board was properly wary of a strictly numerical comparison with little accompanying explanation.

More important, the County's attempted introduction of the PRA testimony reveals a misunderstanding of the "as safe as" criterion adopted by the Commission in CLI-84-8. As is discussed more fully below, the Commission instructed the Board to determine whether operation using LILCO's alternate configuration would be as safe as operation would have been with "a fully qualified onsite A/C power source." 19 NRC at 1156. The Commission's standard seeks to ensure that the safety (core cooling) requirements of GDC-17 will be met using LILCO's alternate configuration. The proper method of determining whether the alternate configuration

satisfies the core cooling requirements of GDC-17 is to apply the traditional Staff review methodology (set forth in Chapter 15 of the Standard Review Plan) to the alternate configuration. As noted, the Commission has cautioned against relying on PRA's to determine if regulatory standards are met. Here, the County's PRA testimony does not even attempt to address the issue of whether LILCO's alternate configuration satisfies the core cooling requirements of GDC-17. There was no effort to show whehter, or to what extent, the various sequences attached to the County's PRA testimony related to any of the design basis events evaluated in Chapter 15. Rather, the County's PRA testimony simply goes to a numerical comparison (for certain referenced sequences) of the alternate configuration and LILCO's original proposed system. Inasmuch as it was not addressed to the safety issue before the Licensing Board, the County's strictly numerical PRA testimony was properly excluded.

C. The Board Correctly Interpreted the "As Safe As" Criterion

The Commission in CLI-84-8 required that LILCO demonstrate in its exemption request:

> 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.

19 NRC at 1156. The State and County consistently have urged that this standard calls for a direct point by point comparison between the alternate configuration and the Shoreham TDI's: "operation with the alternate configuration must be as safe as operation would have been with fully qualified TDI diesels." Comments at 28 (emphasis in original). This standard would almost by definition call for the rejection of the

exemption request: if the alternate configuration is exactly equivalent to the original configuration, the requirements of GDC-17 would be met and no exemption would be needed; if an exact equivalence is not demonstrated, the "as safe as" test could not be met and the exemption must be denied.

The Staff and LILCO called for a more "common sense" application of the Commission's standard. GDC-17 requires that electric power systems assure that:

> (1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.

GDC-17 further requires that:

> The onsite electric power supplies, including the batteries, and the onsite electric distribution system, shall have sufficient independence, redundancy, and testability to perform their safety functions assuming a single failure.

In determining whether power systems satisfy the core cooling requirements of GDC-17, the Staff normally analyzes the system's ability to perform its function in the event of various anticipated occurrences and postulated accidents (as called for in GDC-17 itself) which form the design basis for the facility. That review was performed for the configuration proposed by LILCO for the exemption. The Staff in its review found that "the alternate A/C power sources have the required redundancy, meet the single failure criterion, and have the capacity, capability, and reliability to supply power to all required safety loads for low-power operation." Staff L.P. Ex. 2, Shoreham SSER 6, at 8-9.

The Staff further found reasonable assurance that, for all the potential events discussed in Chapter 15 of the FSAR, core cooling using LILCO's alternate configuration would be provided prior to release of any radioactive fission products from the fuel. Since no fission product release could be reasonably postulated with either LILCO's alternate or original configuration, the Staff found the exemption request satisfied the "as safe as" criterion. SSER 6 at 23-1.

Under those circumstances, the Staff urged the Board to examine "as safe as" in a functional sense. If LILCO's alternate power configuration could be found to provide reasonable assurance of maintaining the core cooling functions set out in GDC-17, then any differences between the alternate configuration and LILCO's proposed TDI configuration would be of no safety importance. Given that LILCO's alternate power configuration was found to fulfill the core cooling requ.rements of GDC-17, the Licensing Board properly found that LILCO had demonstrated that its alternate power configuration is "as safe as" a fully qualified onsite power system.

As described on pages 22-28 of its Initial Decision, the Board adopted the functional approach and ascertained that the proposed alternate configuration provided adequate assurance that core cooling would be restored within the available time and therefore provided a level of protection comparable to that provided by a system in full compliance with GDC-17. The evidence clearly supported the Board's factual conclusion. The Staff submits that the Board's interpretation of "as safe as" was compelled by common sense logic and was fully consistent with the language utilized by the Commission in CLI-84-8.

III. Conclusion

For the reasons provided herein, the Staff submits that the Licensing Board did not err in excluding testimony based on speculation that an operating license would ultimately be denied, did not err in excluding irrelevant PRA testimony that did not address the safety issue before the Board, and correctly interpreted the "as safe as" criterion adopted by the Commission in CLI-84-8.

Respectfully submitted,

Robert G. Perlis
Counsel for NRC Staff

Dated at Bethesda, Maryland
this 14th day of January, 1985

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CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF RESPONSE TO COMMISSION ORDER OF JANUARY 7, 1985" 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 14th day of January, 1985:

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