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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
(Shoreham Nuclear Power Station,
Unit 1)

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

NPC STAFF RESPONSE TO THRESHOLD SAFEGUARDS QUESTIONS

On March 5, 1985, the Licensing Board published a number of threshold safeguards questions pertaining to the remanded low power security proceeding and directed the parties to submit briefs in response to the questions raised. In addition, the Board identified five hypothetical options among which LILCO could choose to proceed before the Board. The Staff submits the following in response to the questions and options identified by the Board.

I. The Five Options for Proceeding

The first option listed by the Board is for LILCO to demonstrate compliance with Part 73 as to the EMD's and gas turbine. Presumably, the Board is equating "compliance with Part 73" with "treating as vital" pursuant to § 73.2(i). The Staff believes this option is clearly viable as a matter of law; whether the gas turbine can be protected as vital equipment as a matter of fact is problematic. In any event, it seems clear at this point that LILCO has decided not to pursue this option.

The second option is to seek an exemption from Part 73 as to the gas turbine and/or the EMD's. Our detailed comments on this option are

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contained in our response to the specific questions below; clearly Section 73.5 makes this option legally permissible (if the standards for an exemption are met).

The third option is to rely on both the EMD's and gas turbine for Part 50 purposes, but rely on the EMD's alone for Part 73 compliance. The Board identified this option as the one supported by the Staff, but found it "illogical and inconsistent with the regulatory scheme" and asked the Staff to provide an articulated justification for this option if the Staff "wishes to have it considered further." Before discussing the viability of this option, the Staff wishes to emphasize one point: if the Board is correct that LILCO does not wish to pursue this option, the Staff sees no need for the Board to consider it further. This Board should be passing upon LILCO's proposed method of fulfilling Part 73 requirements (either through an exemption or through demonstrating compliance with Section 73.55); if LILCO in fact chooses not to pursue the Board's third option, the Board should focus on the option (or options) chosen by the applicant. Having said that, the Staff does not believe that the third option is either "illogical" or "inconsistent with the regulatory scheme;" we believe to the contrary that it is consistent with the goals of both Part 50 and Part 73.

Appendix A to Part 50 establishes general design criteria for nuclear plants. Of particular relevance to this proceeding is GDC-17, which establishes requirements for both offsite and onsite power systems. In the earlier portion of this proceeding, the Board granted LILCO an exemption from the onsite power system requirements of GDC-17. This exemption relied principally on the installation of the EMD's and

gas turbine. Both the EMD's and gas turbine were found to be reliable pieces of equipment (see LBP-84-45, 20 NRC 1343, 1371). Notwithstanding their reliability, neither the EMD's nor the gas turbine alone could satisfy GDC-17 because of GDC-17's further dictate that the onsite power system be capable of performing its function "assuming a single failure." Thus GDC-17 requires two independent and reliable sources of onsite power; for purposes of the Part 50 exemption, the EMD's were one source, the gas turbine was the other.

The goal of Part 73 is to provide "high assurance" that deliberate acts of sabotage will not directly or indirectly endanger the public health and safety by leading to releases of radiation in excess of the limits set forth in Part 100. Pacific Gas and Electric Company (Diablo Canyon Plant, Units 1 and 2), ALAB-653, 16 NRC 55, 58-59 (1981). Part 73 does not provide the same level of detailed specificity found in Part 50.

According to the Appeal Board in Diablo Canyon:

Rather than providing a blueprint for an entire security system, the Commission's regulations propound an overall general performance objective and a design basis threat which the physical protection system must be designed to meet. The regulations then address the component parts of a security system and prescribe more specific requirements for each system subpart. The flexibility of this regulatory scheme allows each applicant considerable latitude in designing a safeguards system to protect its nuclear power facility from radiological sabotage.

Id.

The regulatory scheme of Part 73 does not mandate that all equipment identified in Part 50 be protected as vital. Indeed, GDC-17 itself sets forth various prescriptions for the offsite power system; the Staff has never required safeguards protection for the offsite power

system. The provision of such protection would not only be extremely difficult (if not impossible), it is simply unnecessary in order to provide the requisite protection to the public from sabotage-related radiation releases. Because protection of the offsite system is unnecessary, the offsite power system has never been deemed vital equipment pursuant to Section 73.2(i).

The Staff submits that similar logic should be applied to the alternate power system proposed for use during low power by LILCO. For a sabotage event (or any other event) to threaten the public health and safety during low power operation, four unrelated events must occur: a LOCA must occur within the reactor pressure boundary, both feeds of offsite power must be lost, the gas turbine must fail to supply power, and the EMD's must fail as well. See Initial Decision of October 29, 1984 at 33-38. If any one of these four events does not occur, the public health and safety will not be adversely affected. A strict literal interpretation of Section 73.2(i) could result in the requirement that security protection be provided for all four events. LILCO and the Board originally determined that protection of the reactor pressure boundary itself would be sufficient. The Staff believed (and continues to believe) that an additional measure of conservatism was warranted; the Staff therefore requested that protection be provided for the EMD's as well. The Staff simply does not believe that protection against a third listed event (sabotage of the gas turbine) is needed to provide the requisite high assurance that a safeguards attack during low power operation would not lead to offsite releases in excess of those listed in Part 100.

Option 4 involves relying solely upon the EMD's for purposes of both Part 50 and Part 73. The Staff sees no problem with this approach as a matter of law. As a matter of fact, however, the Staff believes it highly unlikely that the EMD's could be found to satisfy Part 50, GDC-17. This is so not because the EMD's are unreliable as machines, but rather because the EMD's are vulnerable to certain single failures.

Option 5 involves treating the EMD's as vital and providing some level of additional protection (short of vitalization) for the gas turbine. The Staff addresses this option in its response to Question 1 below.

II. The Board's Questions

1. The Board's first set of questions addresses the viability of Option 5. Without seeing a formal justification of this option from LILCO, the Staff at this point is somewhat skeptical of this option. If the gas turbine is in fact found to be vital equipment (a point the Staff disputes), it must be protected under either Section 73.55(b)-(h) or Section 73.55(a). It is the Staff's understanding that LILCO would not seek to demonstrate compliance for the gas turbine with Subsections b-h. Section 73.55(a) allows applicants to provide protective measures other than those set out in (b)-(h) if those measures "have the same high assurance objective as specified in this paragraph and that the overall level of system performance provides protection against radiological sabotage equivalent to that which would be provided by paragraphs (b) through (h) of this section and meets the

general performance requirements of this section." The Staff has interpreted this section as allowing applicants to provide protective measures different than those called for in (b)-(h) if the alternative measures provide an equivalent level of protection from sabotage. It is the Staff's current understanding that LILCO would be proposing alternative protective measures for the gas turbine that would not be designed to provide a level of protection equivalent to that provided by compliance with Subsections (b)-(h). If this is the case, the Staff believes Option 5 is an option that does not fit into the regulatory scheme of Part 73. See response to Question 4, infra. If the gas turbine is found to be vital equipment, LILCO must resort to Option 1 or 2. If, on the other hand, the gas turbine is found not to be vital, the Staff believes Option 3 is viable. In either event, the Staff does not believe Part 73 (other than through an exemption) can be satisfied by protecting vital equipment at a level less than called for in § 73.55(b)-(h) (and thus less than the "equivalence" called for in § 73.55(a)).

The Staff does not believe Section 73.55(a) provides the same function as Section 50.47(c)(1). The latter section provides a built-in exemption from the emergency planning requirements of Section 50.47(b). Under 50.47(c)(1), noncompliance with 50.47(b) can be acceptable if an applicant can demonstrate that the noncompliance is "not significant," if adequate compensatory measures have been taken, or if other compelling reasons exist. Section 73.55(a) is more limited; it allows noncompliance with 73.55(b)-(h) if equivalent protection (by some other means) is provided. In the Staff's view, Option 5 is an attempt to show that a failure to meet Section 73.55(b)-(h) is insignificant from a

safety standpoint. That is a matter that falls under Section 73.5, not Section 73.55(a).

The Staff has examined the carry-over sentence on pages 19-20 of ALAB-800, but can not determine whether the Appeal Board is putting forward that alternative in the context of an exemption or not. Given this ambiguity, the Staff continues to believe that Option 5 is not a viable option under the Commission's regulations.

2. Question 2 focuses on the exemption provisions of Section 73.5. The Staff has to some extent addressed this issue in its response to Question 1. In sum, Section 73.55(a) requires equivalent protection to that provided in 73.55(b)-(h) if a determination is made that certain equipment be protected to the standard set forth therein. Section 73.5 allows an applicant to demonstrate that a lesser level of protection should be allowed in the individual case. The critical issue here involves the interplay between the definition of vital equipment and the exemption process. The Staff believes the views of the parties are as follows:

According to the State and County, the gas turbine and FMD's both meet the definition of vital equipment. They therefore both must be fully protected pursuant to Section 73.55, or an exemption must be sought. According to LILCO, they both may be vital equipment, but the "high assurance" standard of Section 73.55(a) for protecting the public can be met if the turbine is protected at a standard below that called for in Section 73.55(b)-(h) or its equivalence. In the Staff's view, if protection of the gas turbine is unnecessary to meet the "high assurance" standard, the turbine is not vital equipment and the matter

ends. If such protection is necessary (i.e., if the turbine is found to be vital), then the full requirements of Section 73.55 apply (and an exemption would probably be needed in this case).

3. In terms of the factual issues before the Board, it probably would make little difference whether the proposal is addressed under Section 73.5 or Section 73.55(a). The factual issues will revolve around whether the EMD's are protected adequately as vital equipment, and whether the failure to fully protect the gas turbine could adversely affect the public health and safety. If CLI-84-8 controls, it is clear that the "as safe as" determination is not concerned with trivial differences in safety. The Staff further believes the Board's prior ruling on exigent circumstances would apply here; although the Staff does not see any new "public interest" considerations, the State and County would have an opportunity in an exemption proceeding to attempt to raise any new considerations they deem relevant to physical security issues.

4. The safeguards risks are lower at low-power operation, but largely for the same reason that safety risks are lower. The sabotage threat does not change; the risks associated with that threat are lower because of the safety facts associated with low power operation. The regulations in Part 73 were not designed with low power operation in mind; the Staff does not know how to reflect these lesser risks in diminished safeguards standards. Accordingly, the Staff does not believe the lower risks should be equated with lower safeguards standards in terms of how pieces of vital equipment should be protected. The Staff does believe the nature of low power operation should be reflected in the determination of whether the gas turbines and

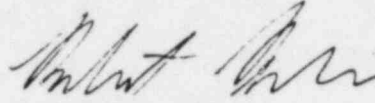
EMD's (which are relied upon only for low power operation) need to be considered vital equipment. In an exemption proceeding, the nature of low power operation might well be reflected in the level of protection necessary to protect the public. Inasmuch as the lower risks at low power flow from the nature of low power operation (and the safety of low power operation was fully explored earlier in this proceeding), no new record would need to be developed on the (non security-related) lesser risks of low power operation.

5. The Staff submits that all the information necessary to develop contentions is in the parties' hands. This information consists largely of the Shoreham security plan and the factual details of the alternate power configuration. Catawba teaches that contentions should be submitted as early as possible. Thus there is no need to postpone the filing of contentions. Additional information may be developed later (specifically, possible protective measures for the gas turbine and a Staff SER); contentions may be amended (or new ones submitted) to reflect that additional information. The proponent of any such later-filed contentions must demonstrate that the test in Catawba (CLI-83-19, 17 NRC 1041) for filing untimely contentions is met.

As to the Board's second question on contentions, the Commission in this proceeding has already determined that security contentions must arise from changes in the emergency power configuration and can be litigated only to the extent they are applicable to low power operation. Unpublished Commission Order of July 18, 1984. If challenged, the

proponent of a contention has the burden of showing that the contention meets the standard set out by the Commission on July 18th.

Respectfully submitted,



Robert G. Perlis
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Dated at Bethesda, Maryland
this 12th day of March, 1985

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NUCLEAR REGULATORY COMMISSION

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CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF RESPONSE TO THRESHOLD SAFEGUARDS QUESTIONS" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class or, as indicated by an asterisk, through deposit in the Nuclear Regulatory Commission's internal mail system, or as indicated by a double asterisk, by hand delivery or telecopy, this 12th day of March, 1985.

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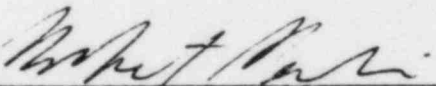
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