LILCO, May 22, 1984

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-OL-4
	)	(Low Power)
(Shoreham Nuclear Power Station, Unit 1)	)	

MOTION FOR SUMMARY
DISPOSITION ON PHASE II LOW POWER TESTING

On March 20, 1984, LILCO filed its Supplemental Motion for Low Power Operating License which requested the approval of a license to conduct four phases of low power testing. LILCO renewed its March 20 motion and, pursuant to 10 CFR § 2.749, sought summary disposition with respect to Phase II of the low power testing program in a motion filed with the Commission on May 4, 1984. Subsequently, the Commission's May 16 Order vacated the Licensing Board's April 6 Memorandum and Order to the extent it was inconsistent with the Commission's view that 10 CFR § 50.57(c) did not make GDC 17 inapplicable to low power operation. The Commission did not rule on LILCO's summary disposition motions. LILCO, in a continuing effort to have the merits of its case engaged, renews its motion for summary disposition on Phase II.

I. Basis for Summary Disposition

Phase II of low power testing includes cold criticality testing of the plant at essentially ambient temperature and atmospheric pressure. See attached Statement of Material Facts, Material Fact 1. The testing involves a specified control rod withdrawal sequence that results in achieving reactor criticality at extremely low power levels, in the range of 0.0001% to 0.001% of rated thermal power. Material Fact 2. The primary purpose of Phase II testing is to verify the shutdown margin calculations. Material Fact 4. In order to accomplish this, plant personnel must first install vessel internals and initiate all refuel floor constraints. Expansion and vibration instrumentation is installed and cold baseline data are obtained for later comparison to data obtained during heatup. Material Fact 3.

To obtain the shutdown margin test data, control rods are withdrawn in the proper sequence until criticality is achieved. The necessary test data can be taken within 5 minutes of reaching criticality. The control rods are then reinserted and the reactor is shut down. Material Fact 4.

The extremely low risk of conducting Phase II activities, even without onsite AC power sources available, is demonstrated by a review of the accident and transient events contained in Chapter 15 of the Shoreham FSAR. Under plant conditions during Phase II, 23 of the 38 Chapter 15 events are possible. Material Fact 5-6.

Of the 23 possible events, the standard safety analysis does not require the assumption of loss or unavailability of offsite AC power for 20 of them. Therefore, the consequences of these events are unaffected by the unavailability of the TDI diesels. Material Fact 6.

For the three events that do assume loss or unavailability of offsite power (pipe breaks inside containment (loss of coolant accident or LOCA), feedwater system piping break and the loss of AC power event), there are no consequences even assuming no onsite AC power source. Material Facts 7-10, 12.

As in Phase I, the lack of any accident consequences is attributable to the level of fission products in the core. The extremely low power levels achieved during Phase II, and the extremely short amount of time at those power levels result in essentially no fission products in the core and very little decay heat. Material Facts 4, 8-9. Accordingly, in the event a LOCA occurs,1/ only a small amount of decay heat is present to heat up the core. Essentially unlimited time is available before core cooling would have to be restored. Thus, there is no need for any AC power, including the TDI diesels. Material Fact 9.

1/ Pipe breaks of the sort postulated in the LOCA or feedwater system break events are highly unlikely under Phase II conditions. Material Fact 11.

With respect to the feedwater system break event and the loss of offsite power event, the reactor coolant inventory is not lost. This provides additional cooling capability and further ensures that no AC power is needed for core cooling. Material Fact 10.

As in Phase I, reliable diesel generators are not necessary to satisfy the Commission's regulations. The legal requirement for diesel generators derives from GDC 17, which states in pertinent part:

> An onsite electric power system and an offsite electric power system shall be provided to permit functioning of structures, systems, and components important to safety. The safety function for each system (assuming the other system is not functioning) shall be to provide sufficient capacity and capability to 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.

10 C.F.R. Part 50, Appendix A, Criterion 17 (emphasis added). In other words, the onsite AC power source must be of sufficient capacity and capability to assure the performance of specified safety functions.

As demonstrated above, the Chapter 15 accident and transient events do not have any consequences, even assuming the unavailability of the TDI diesels. In fact, no AC power is required to protect the core. Material Fact 13.

Thus, the Commission's analysis with respect to fuel load and precriticality testing for the Diablo Canyon plant is useful here. As the Commission noted in that decision:

> The risk to public health and safety from fuel loading and pre-criticality testing is extremely low since no self-sustaining nuclear chain reaction will take place under the terms of the license and therefore no radioactive fission products will be produced.

Pacific Gas and Electric Co. (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-83-27, 18 NRC 1146, 1149 (1983). As already noted, self-sustaining nuclear reaction will be conducted at extremely low power levels and for very short periods of time. The radioactive fission products produced under these circumstances are negligible. Thus, operation of the plant during Phase II presents no significant safety issue. See id.

The rationale for the Commission's grant of a license to Diablo Canyon also applies with respect to Phase II activities at Shoreham. At the time the Commission granted Diablo Canyon a low power testing license, quality assurance litigation concerning Diablo Canyon was still ongoing. In contrast, Shoreham has already been the subject of a lengthy, favorable Partial Initial Decision on all safety issues except those concerning those its existing diesel generators. See Long Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1), LBP-83-57, 18 NRC 445 (1983) (Opinion), and unpublished Board Findings of Fact and Appendices.

Since there is no need for reliable diesel generators during Phase II, the assurance of no risks to public health and safety from Phase II activities is even greater at Shoreham than at Diablo Canyon because all quality assurance issues at Shoreham have been favorably resolved.

II. Conclusion

Consistent with the Commission's May 16 Order, GDC 17 requires an onsite power source during low power testing with sufficient capacity and capability to perform certain safety functions specified in the GDC. During cold criticality testing conducted during Phase II, no AC power is required to perform these safety functions. Thus, even assuming that LILCO's onsite diesel generators do not operate, the requirements of GDC 17 are met. For the above stated reasons, LILCO's Motion for Summary Disposition on Phase II Low Power Testing should be granted.2/

Respectfully submitted,

LONG ISLAND LIGHTING COMPANY

Anthony F. Earley Jr.

Robert M. Rolfe
Anthony F. Earley, Jr.
Jessine A. Monaghan

2/ If the Licensing Board believes the Commission's May 16 order requires an exemption from the regulations for all four phases of low power testing, then the Board should treat this motion as a motion for summary disposition of all health and safety issues with respect to Phase II.

Hunton & Williams
Post Office Box 1535
Richmond, Virginia 23212

DATED: May 22, 1984