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)
	)	
(Shoreham Nuclear Power Station, Unit 1)	)	
	)	

AFFIDAVIT OF WILLIAM J. MUSELER

William J. Museler, being duly sworn, deposes and states as follows:

(1) My name is William J. Museler and my business address is Long Island Lighting Company, Shoreham Nuclear Power Station, P. O. Box 618, Wading River, New York 11792. I am Director, Office of Nuclear, for LILCO, reporting directly to the Vice President, Nuclear. My duties and responsibilities as Director of the Office of Nuclear include the technical direction of the Shoreham diesel generator recovery effort, the coordination of the Company's licensing activities relating to Shoreham, and acting directly for the Vice President, Nuclear, as directed and in his absence.

(2) I have been employed by LILCO since 1973, holding the following positions:

1981-83	Manager of Construction and Engineering responsible for supervision of the UNICO Construction, Engineering and Licensing activities for Shoreham.
1980-81	Assistant Project Manager of Construction responsible for all Shoreham construction activities.
1977-80	Assistant Project Manager for Engineering, Licensing and Cost at Shoreham responsible for supervision of all LILCO and contractor activities in these areas and for establishing Company positions relating to NRC licensing review of the FSAR.
1975-77	Mechanical Construction Engineer at Shoreham responsible for monitoring onsite mechanical effort (e.g., piping, welding, mechanical equipment).
1973-75	Assistant Project Engineer on Shoreham and Jamesport responsible for reviewing base plant design, ensuring the procurement documents reflected appropriate design requirements, and preparing various licensing documents for the FSAR.

(3) Prior to joining LILCO, I served as Deputy Director of the Hydrogen Track Chamber (80") at the Brookhaven National Laboratory, and as an Associate Staff Engineer at Combustion Engineering with development and test reponsibilities associated with HWOCR and PWR systems. I have also worked for EBASCO Services as Project Engineer responsible for all engineering activities associated with the Allens Creek Nuclear Power Station (BWR). I have a Bachelor's Degree in Engineering Science, a Master of Science Degree in Mechanical Engineering, and I

have completed one year of post-graduate work in nuclear engineering at the University of Florida with additional courses in industrial management from the Polytechnic Institute of Brooklyn. I have held AEC Reactor Operator licenses on research reactors at the University of Florida and at Worcester Polytechnic Institute. I am a member of the American Nuclear Society and have served as Chairman of the Long Island Section of the Society.

(4) The purpose of this Affidavit is to set forth the commitments and procedures LILCO has made and will adhere to during specified portions of LILCO's low power testing program (Phases II-IV) in order to provide additional assurance that reliable AC power will always be available to Shoreham during these activities and that challenges to the reactor safety systems will be minimized. As Director, Office of Nuclear, I am authorized to speak on behalf of LILCO with respect to these commitments and procedures for the fuel load and low power testing phases.

(5) The major challenges to Shoreham's offsite power supply fall generally into two categories. The first relates to transients induced by the loss of major generating units on LILCO's system or by outside events transmitted to the LILCO

grid via its interconnections. With respect to these events, the FSAR demonstrates that the LILCO grid will remain stable assuming the loss of the largest LILCO generating unit. FSAR § 8.2.2.2. This analysis uses the Northport Station, which consists of four separate units (Units 1-4) at 340 MW each. It is extremely unlikely that all four units would be lost in a single event, as is assumed in the FSAR analysis. Therefore the severity of the analyzed transient is unlikely ever to be experienced. Moreover, procedural and physical modifications to LILCO's system have greatly reduced the already unlikely possibility of losing offsite power to Shoreham as a result of transients initiated through LILCO's interconnections. See Schiffmacher Affidavit generally and especially paragraph 10.

(6) The second general category of challenges to Shoreham's offsite power supply consists of weather and seismic related events. The frequency and severity of these events for the Shoreham area are discussed in FSAR §§ 2.3, 2.4 and 2.5. As stated in FSAR §2.3.1.3, the probability of a tornado striking the site is one in 23,200 years. FSAR §2.5.2.5.7 notes that the site is located in an area of low seismicity. In addition, as stated in the the FSAR, it is estimated that the maximum earthquake intensity experienced at the site has been IV-V (Modified Mercali scale). Id. An intensity V (MM)

earthquake can be correlated to a maximum horizontal ground acceleration of 0.03g which is significantly less than the design basis earthquake acceleration of 0.2g.

(7) In order to provide added assurance of safety during the initial criticality and low power testing Phases II, III and IV, LILCO has committed to initiate procedures immediately to place the reactor in a cold shutdown condition in the event of any of the following:

(a) a "hurricane warning" for the Shoreham area issued by the National Weather Service;

(b) a "tornado warning" for the Shoreham area issued by the National Weather Service;

(c) a "severe storm warning" for the Shoreham area issued by the National Weather Service;

(d) a prediction for the Shoreham area by the National Weather Service of abnormally high tides greater than 5 feet above mean high water within 24 hours;

(e) an indication of seismic activity of .01g on the Shoreham seismic monitors;1/

(f) the outage of two of the four LILCO interconnections to Consolidated

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1/ The Shoreham seismic monitor alarms at this level (.01g), which is only 10% of the level currently requiring the initiation of shutdown procedures. This level of seismic activity is also only 5% of the SSE seismic activity.

Edison and the New England Power Grid; and

(g) a low electrical frequency condition which causes an alarm on the LILCO transmission system.

These commitments provide added assurance that cold criticality and low power testing up to and including 5% (Phases II, III and IV) will be accomplished under conditions optimum for ensuring the highest reliability of the AC power supply to Shoreham and the minimum risk of having a loss of AC power while the reactor is critical.

(8) In addition, with regard to alternative sources of AC power for Shoreham, LILCO has committed to, and will ensure that, the following operational steps are taken to provide yet additional assurance of AC power reliability for Shoreham during Phases III and IV of low power testing. LILCO will:

(a) demonstrate on a biweekly basis through an actual test that the Holtsville blackstart gas turbines can supply power to Shoreham in less than 15 minutes;

(b) demonstrate on a biweekly basis through an actual test that the 20 MW gas turbine at Shoreham can be manually started, synchronized and loaded to at least 13 MW on the grid;

(c) demonstrate on a monthly basis that the 20 MW gas turbine at Shoreham will start automatically on a loss of grid voltage signal;

(d) demonstrate on a biweekly basis that the East Hampton and Southhold gas turbines can be manually started, synchronized and loaded to at least 50% capacity on the grid; and

(e) demonstrate on a biweekly basis that at least 3 of the 4 mobile diesel generators on site can be manually started and operated at rated speed.

(9) If any one of the surveillance tests described in paragraph 8 are unsuccessful, corrective action will be taken within 72 hours or the plant will immediately initiate procedures to place the reactor in a cold shutdown condition.

(10) As described in Mr. Schiffmacher's affidavit, LILCO has provided more than the number of offsite power sources required by regulation. Importantly, some of the supplemental offsite power sources provided by LILCO are, in fact, located onsite at Shoreham.

(11) During Phases III and IV, of the low power testing, LILCO further commits that Shoreham plant will not be operated until the three TDI diesel generators at Shoreham have completed their preoperational test program as well as subsequent inspection and refurbishment in accordance with LILCO's enhanced maintenance program. During these phases, LILCO will comply with all applicable onsite power technical specifications. The

technical specifications contain requirements for demonstrating operability of the AC power sources (including the TDI diesels) or shutting down the plant when portions of the offsite power supply or the diesels are inoperable. For example, if one diesel or one offsite power circuit is unavailable, LILCO must demonstrate that one diesel is operable by starting it within one hour and then once every 8 hours thereafter. If the inoperable diesel or offsite circuit is not restored within 72 hours, the plant must be in hot shutdown within the next 12 hours and in cold shutdown within the following 24 hours. Other requirements exist for the unavailability of various combinations of power sources. The technical specifications also contain surveillance testing requirements for the diesels, the frequency of which is related to the performance of the diesels in previous tests. Thus, compliance with technical specifications will ensure that the TDI diesels are tested on a schedule consistent with their demonstrated in-service reliability.

(12) In summary, during appropriate phases of the low power test program, LILCO will establish additional administrative procedures relative to reactor shutdown in the event of a potential challenge to the offsite power system; will establish, through periodic testing, that the supplemental offsite power supplies to Shoreham are reliable during this low power

testing period; and will adhere to the appropriate technical specifications for the TDI diesels as indicated above. These additional measures will further ensure that the operation of the Shoreham Nuclear Power Station for fuel loading and operation up to 5% thermal power (Phases II-IV) will pose a negligible risk to the health and safety of the public.

W. J. Museler

William J. Museler

STATE OF NEW YORK)
) To-wit:
COUNTY OF SUFFOLK)

Subscribed and sworn to before me this 23rd day of March, 1984.

Notary Public

My commission expires: 3/30/84.

NANCY J. SCHMITT
NOTARY PUBLIC, State of New York
No. 52-8826330, Suffolk County
Term Expires March 30, 1984