

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 John A. Rigert

John A. Rigert, being duly sworn, deposes and says as follows:

1. My name is John A. Rigert. I am employed by Long Island Lighting Company (LILCO) as the Section Head of the System Engineering Section of the Nuclear Engineering Department. In this capacity, I supervise the development of Shoreham's in-service testing program for valves. I have testified before this Board on issues raised by SC Contention 16 -- ATWS and SC Contention 27/SOC Contention 3 -- Regulatory Guide 1.97. A statement of my professional qualifications has been submitted previously to the Board and is bound in the record following the Transcript at 8870.

2. The purpose of this affidavit is to provide the Board with certain of the information requested in its "Memorandum and Order Directing Clarification of Certain Matters Related to Contention SC 11" (May 26, 1983). Specifically, this affidavit addresses the

following three questions which are presented on page 4 of the Order: "(a) what categories of safety-related check valves, in addition to the service water system diesel generator cooling water check valves, are included in LILCO's inservice testing program; (b) whether LILCO plans to test all such valves or some sample thereof; and (c) whether such testing will follow the recommendations of Bulletin 83-03 (e.g., forward and back flow, disassembly) or will employ other identified means adequate to detect latent valve failures such as those described in IE Bulletin 83-03". In addition, this affidavit describes a program, which is in the planning stage, that will be used to incorporate industry experience into the IST and preventive maintenance programs. This program is relevant to the Board's inquiry regarding LILCO's efforts to identify causes of passive mechanical valve failures.

3. The Shoreham In-Service Testing (IST) program for valves complies with 10 CFR §50.55(a)(g) and Section XI of the ASME Boiler and Pressure Vessel Code. EG&G, consultants for the NRC Staff, reviewed LILCO's draft test program in November and December, 1982. Based upon that review, as well as a review by LILCO's consultant, NES, the draft program was substantially revised. The program that will be in effect at fuel load was recently submitted to the NRC in SNRC-857 (April 15, 1983).

4. There are 1268 safety-related valves in the Shoreham IST program, of which 579 are check valves: 168 are piping system check valves and 411 are check valves in the hydraulic control units. Every safety-related check valve (a check valve which must function in order to ensure the proper operation of a safety-related system) at Shoreham is included in the IST program. Accordingly, the IST program includes valves from the following systems: Main and Auxiliary Steam, Feedwater, Reactor Water Recirculation, Control Rod Drive, Standby Liquid Control, Residual Heat Removal, Core Spray, High Pressure Coolant Injection, Reactor Core Isolation Cooling, Radwaste, Reactor Water Clean-up, Fuel Pool Cooling and Clean-up, Reactor Building Standby Ventilation and Control Room Air Conditioning, Service Water (including diesel generator cooling water supply check valves), Reactor Building Closed Loop Cooling Water, Instrument and Service Air, Fuel Oil Transfer, Diesel Generator Air Start, and Primary Containment Atmospheric Control.

5. Each and every check valve in the IST program -- not just a sample -- is tested for operability in one of three ways: forward flow testing, reverse flow testing, or both forward and reverse flow testing. The selection of flow direction for testing is based upon the required valve response to system flow conditions during system operation. For example, if a valve must pass forward flow and prevent reverse flow for the system to operate properly, the valve is tested in both directions.

6. Forward and reverse flow testing (or an acceptable alternative such as disassembly) is a requirement for diesel generator cooling water supply system check valves. This requirement was recently imposed upon operating plants by IE Bulletin 83-03, "Check Valve Failures in Raw Water Cooling Systems of Diesel Generators" (March 10, 1983). Even prior to the issuance of IE Bulletin 83-03, Shoreham had specified that not only would the six valves in the diesel generator cooling water system be tested for both forward and reverse flow, but also that 44 other check valves would also be tested for both forward and reverse flow. These 50 check valves are in the following systems: Main Steam, Feedwater, Standby Liquid Control, Core Spray, High Pressure Coolant Injection, Reactor Core Isolation Cooling, Radwaste, Service Water (including the diesel generator cooling water supply) and Reactor Building Closed Loop Cooling Water. Thus, LILCO may already comply if the requirements of Bulletin 83-03 were to be imposed on similar check valves. In addition to the 50 check valves that are tested for both forward and reverse flow, there are 219 check valves in the IST program that are tested for forward flow only, and another 310 check valves that are tested for reverse flow only. Again, each and every safety-related check valve is included in the IST program and is tested. Unless a specific relief request has been filed pursuant to the ASME Code, the testing frequency for these valves is once every 3 months.

7. LILCO is investigating the use of a computerized program to ensure that testing and maintenance programs will be responsive to industry-wide, as well as to Shoreham-specific, experiences. This program would not only relate to valves but to several other components such as pumps, welds and snubbers. This computerized system would track test results and perform trending analyses that would assist in determining common causes of failures (including, of course, passive mechanical valve failures) and appropriate preventive actions. The data base for a single valve could consist of up to 100 pieces of information with additional inputs added each time the valve is tested, maintenance is performed, or relevant industry experience becomes available.

John A. Rigert
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STATE OF NEW YORK)
COUNTY OF NASSAU)

Subscribed and sworn to
before me this 9th day
of June, 1983.

Rosa Lee Oliveros
Notary Public

My Commission Expires on 3/30/84

ROSA LEE OLIVEROS
Notary Public, State of New York
No. 30-4700263
Qualified in Nassau County
Commission expires Mar. 30, 1984