

LILCO, August 3, 1984

RELATED CORRESPONDENCE

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

DOCKETED
USNRC

In the Matter of)
)
LONG ISLAND LIGHTING COMPANY) Docket No. 50-322-OL-3
) (Emergency Planning Proceeding)
(Shoreham Nuclear Power Station,)
Unit 1))

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FILE OF RECORDS
PLANNING & SERVICE
BRANCH

AFFIDAVIT OF JOHN A. SCALICE

JOHN A. SCALICE, being duly sworn, deposes and says as follows:

1. My name is John A. Scalice. I am Operations Manager at the Long Island Lighting Company Shoreham Nuclear Power Station. My business address is North Country Road, Wading River, New York, 11792.

2. I make this affidavit in response to the July 24, 1984 "Memorandum and Order Determining that a Serious Safety Matter Exists" of the NRC Licensing Board in the Shoreham emergency planning hearings. This affidavit has two primary purposes. The first is to describe the actions that the Operations Division would typically take to bring the Shoreham plant to cold shutdown using normal station operating procedures, and the time required to complete those actions. The second is to discuss briefly the obligations of licensed reactor operators regarding operator relief and the turnover of reactor operations.

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3. The initiation of a controlled plant shutdown is controlled by procedures SP22.004.01, "Operation Between 20 Percent and 100 Percent Power," and SP22.005.01, "Shutdown From 20 Percent Power." (Attachments 1 and 2). These procedures detail the steps and supplementary activities needed to bring the plant from "Power Operation" through "Hot Shutdown" to a "Cold Shutdown" condition.

4. The Shoreham Technical Specifications (§ 1, Table 1.2: Definitions) define the pertinent operational conditions as follows:

Power Operation - Reactor Mode Switch in "Run" position with the average reactor coolant at any temperature.

Hot Shutdown - Reactor Mode Switch in "Shutdown" position with the average reactor coolant temperature greater than 200°F.

Cold Shutdown - Reactor Mode Switch in "Shutdown" position with the average reactor coolant temperature at less than or equal to 200°F.

Refueling - Reactor Mode Switch in "Shutdown" or "Refuel" position, fuel in reactor vessel with the reactor head closure bolts less than fully tensioned or with the head removed; average reactor coolant temperature less than or equal to 140°F.

5. Briefly, the operator actions required by procedures SP22.004.01 and SP22.005.01 to bring the plant to cold shutdown are as follows:

- a. Reactor power is reduced by lowering recirculation flow utilizing Reactor Recirculation pumps.
- b. The main steam is aligned to the Radwaste Steam Generator below 90% power.

- c. Power is further reduced using the Reactor Recirculation pumps until the flow-biased rod blocks are reached.
- d. Existing control rod movement sheets are then utilized to insert the control rods until both recirculations pumps can be removed from Master Manual Control.
- e. Power reduction continues by the insertion of control rods and by the reduction of recirculation flow until both recirculation pumps reach minimum flow.
- f. Plant auxiliaries are aligned in preparation for Turbine-Generator de-energization.
- g. At approximately 15% to 20% power, the neutron level instrumentation is activated, tested and then utilized to monitor reactor power.
- h. The control rods continue to be inserted and at approximately 5-10% power the reactor mode switch is placed in the next condition of operation: "Start/Hot Standby".
- i. Generator load is reduced and the Turbine-Generator is removed from service by opening the main generator output breakers.
- j. Control rod insertion continues until the reactor is subcritical and then an "all-rods-in" configuration is achieved.
- k. The Reactor Mode Switch is then placed in the "Shutdown" position.
- l. Reactor pressure is reduced by using the turbine bypass valves to maintain a cooldown rate below the allowable Technical Specification rate.
- m. Reactor water level is maintained using the low flow feedwater controller, and the auxiliary boiler is used to transfer auxiliary loads to auxiliary steam.
- n. When reactor pressure has moved below 109 psig, the Residual Heat Removal System is

aligned in the "Shutdown Cooling Mode" of operation and one recirculation pump is removed from service.

- o. This mode of cooling is continued until the reactor coolant temperature is below 200°F at which time the remaining recirculation pump is removed from service.

At this point, the reactor is in a "Cold Shutdown" condition.

6. The time needed to perform the entire sequence of activities described in Paragraph 5 is approximately 12 to 16 hours.

7. While not desirable, power reduction can be achieved more quickly by first reducing recirculation flow and then manually scramming the reactor. The scramming action inserts the control rods and takes the reactor to a subcritical condition in approximately 5 seconds. The time from full power to "all-rods-in" is therefore on the order of minutes. Subsequent pressure reduction and cooldown would follow the path described in items k to o of Paragraph 5. Using this method of power reduction, the total time to Cold Shutdown is approximately 8 hours, or one operations shift.

8. Based on the preceding discussions, if a postulated work stoppage provided twenty-four hours of advance notification, then ample time would exist for the planned operations complement to place the reactor in a Cold Shutdown condition.

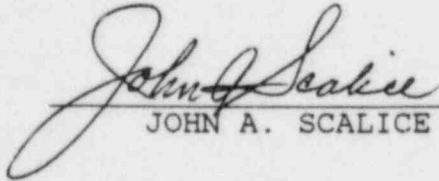
9. My observations of those Shoreham licensed operators who are union members uniformly confirm a mature and dedicated

attitude on the part of these operators toward the performance of their duties, obligations and requirements of their licenses. They are fully trained in the proper procedures for operator relief and turnover, and are aware of the provisions of 10 CFR Part 55 which govern their licenses and outline possible causes for revocation including "any conduct determined by the Commission to be a hazard to safe operation of the facility."

10. This responsible attitude was abundantly apparent at the onset of the current work stoppage. The operating crew on shift provided an excellent shift turnover, which included the placement of new chart paper in all recorders, the preparation of operator log sheets, and even the cleaning of the control room facilities. Even though I am confident of the participation of licensed union-member reactor operators in bringing the plant to cold shutdown, their participation is not necessary to effectuate shutdown, following the procedures outlined in Paragraphs 5 through 7 of this Affidavit, in the times stated. Management-level plant staff employees alone can also perform these operations without further assistance, if necessary.

11. Once the reactor has been brought to cold shutdown, it can be maintained in that condition indefinitely, by management-level plant staff employees alone if necessary.

12. To conduct fuel handling activities the reactor must be brought to an operational level below cold shutdown: "Refueling Mode." Management-level plant staff employees alone could also take the reactor to this mode of operation and maintain it in that state.


JOHN A. SCALICE

COUNTY OF SUFFOLK)
STATE OF NEW YORK)

Subscribed and sworn to before
me this 7 day of August, 1984.


NOTARY PUBLIC

My Commission Expires on March 30, 1985.

CONNIE-MARIA PARDO
NOTARY PUBLIC, State of New York
No. 52-46158-10
Qualified in Suffolk County
Commission Expires MARCH 30, 1985