

December 20, 1976

PRN-LI-76-303

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Mr. Norman C. Moseley, Director, Region II Office of Inspection and Enforcement U. S. Nuclear Regulatory Commission 230 Peachtree Street, N. W., Suite 818 Atlanta, Georgia 30303

Dear Mr. Moseley:

REPORTABLE OCCURRENCE 335-76-35 ST. LUCIE UNIT 1 DATE OF OCCURRENCE: JULY 10, 1976

POWER DISTRIBUTION ANOMALIES - UPDATE REPORT NO. 1

The attached Licensee Event Report is being submitted to update our initial report of July 23, 1976.

Very truly yours,

A. D. Schmidt
Vice President
Power Resources

MAS/cpc

Attachment

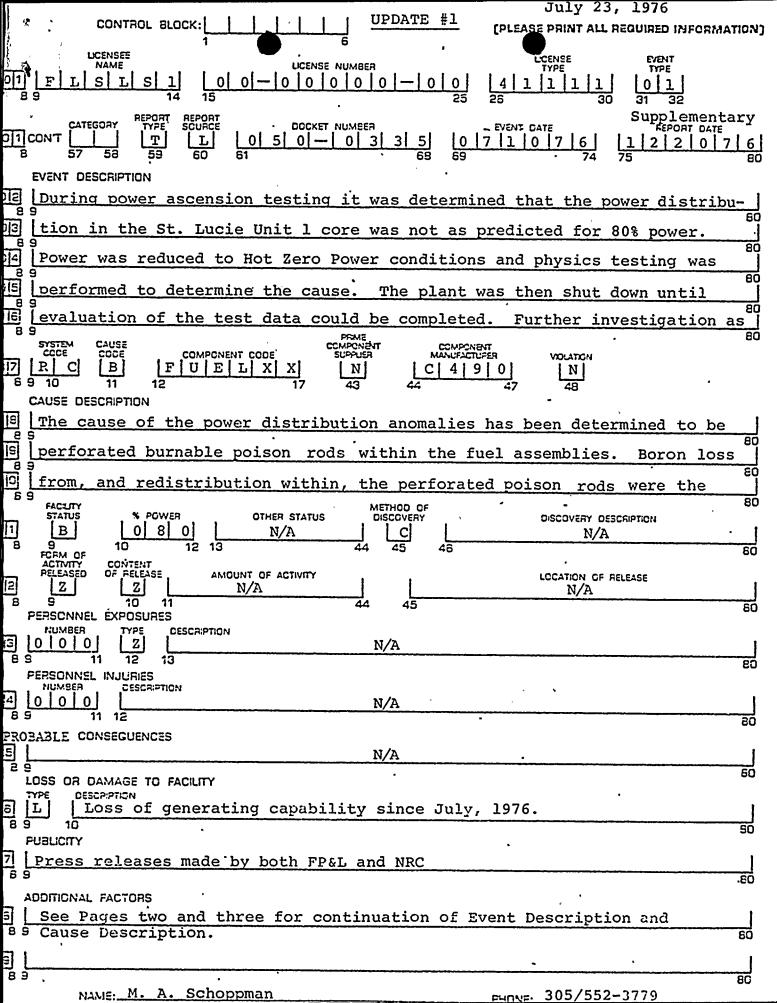
cc: Robert Lowenstein, Esquire

Director, Office of Inspection and Enforcement (40)

Director, Office of Management Information and

Program Control (3)

PEOPLE ... SERVING PEOPLE



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## EVENT DESCRIPTION (Continued)

described below in the Cause Description was later performed. (335-76-35)

## CAUSE DESCRIPTION (Continued)

sources of the observed anomalies and occurred throughout the core. This conclusion is based on poolside (spent fuel pool) inspections, hot cell observations, and laboratory testing, as well as the pre-shutdown core flux measurements. Briefly, the following was done:

- (1) A statistically significant number of fuel assemblies containing poison rods were visually inspected at poolside. From these observations it was evident that perforated poison rods were distributed throughout the core. It should be noted that no fuel rod anomalies were observed.
- (2) Poison rods were then removed from selected fuel assemblies for visual and eddy current testing in the spent fuel pool.
- (3) Based on (1) and (2) above, poison rods were sent to outside consultants for hot cell examination and reactivity measurements.

The results from (1), (2), and (3) confirmed the cause to be boron loss from, and redistribution within, the poison rods.

After review and approval in accordance with 10 CFR 50.59, the original poison rods were removed, and replaced by new poison rods. A retention assembly was added to provide supplementary rod retention capability at that portion of each flow plate which was removed to allow access to the poison rod locations. The replacement burnable poison rods are of essentially the same design as the rods described in the FSAR except for minor changes which minimize the probability for recurrence of the mechanism which caused the failures among the original rods, and minor changes to update the rods to the vendor's latest design. The boron content is equivalent to the as-built loading in the original rods.

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## CAUSE DESCRIPTION (Continued)

This reworking process results in fuel assemblies which are not significantly changed from the original design. A design review has demonstrated that the reworked fuel assemblies have no significant effect on the nuclear and thermal hydraulic aspects of core performance. All input parameters to the accident and transient analysis have been reviewed to determine the effect of the poison rod replacement. It has been determined that all key input parameters are bounded by the values used in the FSAR.

Based on the evaluations made, it is concluded that the reworked fuel assemblies can be operated at full power throughout the original design life. Changes to the FSAR and Technical Specifications are not required and operation does not result in an unreviewed safety question.

For further details see our "St. Lucie Unit #1 Repair Report" CEN-38 (F), Revision 1.