

50-335

NRC DISTRIBUTION FOR PART 50 DOCKET MATERIAL

FILE NUMBER  
INCIDENT REPORT

TO: Norman G. Moseley

FROM: Florida Power & Light Co.  
Miami, Florida 33101  
A.D. Schmitt

DATE OF DOCUMENT

12-20-76

DATE RECEIVED

1-10-77

LETTER  
 ORIGINAL  
 COPY

NOTORIZED  
 UNCLASSIFIED

PROP

INPUT FORM

NUMBER OF COPIES RECEIVED  
40 copies

DESCRIPTION  
Ltr. Trans The Following:  
  
( 1 page )  
  
PLANT NAME: ST LUCIE UNIT # 1  
  
**ACKNOWLEDGED**  
  
**DO NOT REMOVE**

ENCLOSURE  
Update Licensee Event Report (RO-50-355/76-35 on 07-10-76 concerning power distribution core not as predicted for 80% power due to perforate burnable poison rods within fuel assemblies...  
  
( 40 encl rec'd )  
( 3 pages )  
  
NOTE: IF PERSONNEL EXPOSURE IS INVOLVED SEND DIRECTLY TO KREGER/J. COLLINS

FOR ACTION/INFORMATION JCM 1-11-77

<input checked="" type="checkbox"/> BRANCH CHIEF:	ZIEMANN
W/3 CYS FOR ACTION	
<input checked="" type="checkbox"/> LIC. ASST.:	DIGGS
W/1 CYS	
<input checked="" type="checkbox"/> ACRS 16 CYS HOLDING/SENT	Cat "B" on 1-11-77

INTERNAL DISTRIBUTION

<input checked="" type="checkbox"/> REG FILE	
<input checked="" type="checkbox"/> NRC PDR	
<input checked="" type="checkbox"/> I & E (2)	
<input checked="" type="checkbox"/> MIPC	
<input checked="" type="checkbox"/> SCHROEDER/IPPOLITO	
<input checked="" type="checkbox"/> HOUSTON	
<input checked="" type="checkbox"/> NOVAK/CHECK	
<input checked="" type="checkbox"/> GRIMES	
<input checked="" type="checkbox"/> CASE	
<input checked="" type="checkbox"/> BUTLER	
<input checked="" type="checkbox"/> HANAUER	
<input checked="" type="checkbox"/> TEDESCO/MACCARY	
<input checked="" type="checkbox"/> EISENHUT	
<input checked="" type="checkbox"/> BAER	
<input checked="" type="checkbox"/> SHAO	
<input checked="" type="checkbox"/> VOLLMER/BUNCH	
<input checked="" type="checkbox"/> KREGER/J. COLLINS	

EXTERNAL DISTRIBUTION

<input checked="" type="checkbox"/> LPDR: Ft pierce, Fla.	
<input checked="" type="checkbox"/> TIC:	
<input checked="" type="checkbox"/> NSIC:	

CONTROL NUMBER

278

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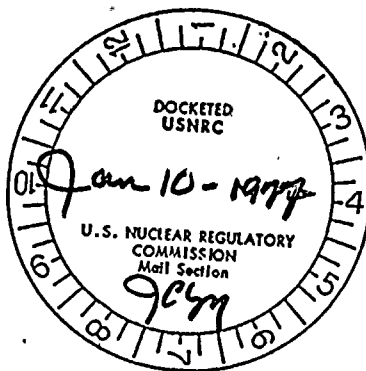
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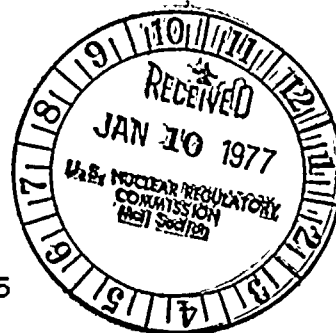


December 20, 1976

PRN-LI-76-303

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,

*J.R. Bauer*  
for 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)



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24 5

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.

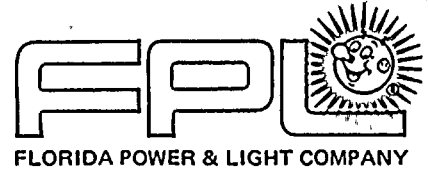
CAUSE DESCRIPTION (Continued)

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.





December 20, 1976

PRN-LI-76-303

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U. S. Nuclear Regulatory Commission  
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Director, Office of Inspection and Enforcement (40)  
Director, Office of Management Information and  
Program Control (3)

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U.S. A.E.C.  
REGULATORY OPERATIONS  
REGION II  
ATLANTA, GA.  
JAN 3 1 17 PM '77

LICENSEE EVENT REPORT

Initial Report  
July 23, 1976

CONTROL BLOCK: [ ] [ ] [ ] [ ] [ ] [ ]

UPDATE #1

(PLEASE PRINT ALL REQUIRED INFORMATION)

LICENSEE NAME 01   F   L   S   L   S   1						LICENSE NUMBER 0   0   -   0   0   0   0   0   -   0   0						LICENSE TYPE 4   1   1   1   1				EVENT TYPE 0   1	
CATEGORY 01   CONT		REPORT TYPE T	REPORT SOURCE L	DOCKET NUMBER 0   5   0   -   0   3   3   5				EVENT DATE 0   7   1   0   7   6				Supplementary REPORT DATE 1   2   2   0   7   6					

EVENT DESCRIPTION

02 | During power ascension testing it was determined that the power distribu-  
 03 | tion in the St. Lucie Unit 1 core was not as predicted for 80% power.  
 04 | Power was reduced to Hot Zero Power conditions and physics testing was  
 05 | performed to determine the cause. The plant was then shut down until  
 06 | evaluation of the test data could be completed. Further investigation as

SYSTEM CODE R   C	CAUSE CODE B	COMPONENT CODE F   U   E   L   X   X	PRIME COMPONENT SUPPLIER N	COMPONENT MANUFACTURER C   4   9   0	VIOLATION N
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CAUSE DESCRIPTION

08 | The cause of the power distribution anomalies has been determined to be  
 09 | perforated burnable poison rods within the fuel assemblies. Boron loss  
 10 | from, and redistribution within, the perforated poison rods were the

FACILITY STATUS B	% POWER 0   8   0	OTHER STATUS N/A	METHOD OF DISCOVERY C	DISCOVERY DESCRIPTION N/A
FORM OF ACTIVITY RELEASED Z	CONTENT OF RELEASE Z	AMOUNT OF ACTIVITY N/A	LOCATION OF RELEASE N/A	

PERSONNEL EXPOSURES

NUMBER 0   0   0	TYPE Z	DESCRIPTION N/A
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PERSONNEL INJURIES

NUMBER 0   0   0	DESCRIPTION N/A
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PROBABLE CONSEQUENCES

15 | N/A

LOSS OR DAMAGE TO FACILITY

TYPE L	DESCRIPTION Loss of generating capability since July, 1976.
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PUBLICITY

17 | Press releases made by both FP&L and NRC

ADDITIONAL FACTORS

18 | See Pages two and three for continuation of Event Description and  
 Cause Description.

19 |

NAME: M. A. Schoppman

PHONE: 305/552-3779

EVENT DESCRIPTION (Continued)

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

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