P. O. BOX 013100, MIAMI, FL 33101

FLORIDA POWER & LIGHT COMPANY

February 18, 1977

PRN-LI-77-37

Mr. Norman C. Moseley, Director, Region II
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
230 Peachtree Street, N. W., Suite 1217
Atlanta, Georgia 30303

Dear Mr. Moseley:

REPORTABLE OCCURRENCE 335-77-4
ST. LUCIE UNIT 1
DATE OF OCCURRENCE: JANUARY 20, 1977

DDPS CALORIMETRIC

The attached Licensee Event Report is being submitted in accordance with Technical Specification 6.9 to provide 30-day notification of the subject occurrence.

Very truly yours,

A. D. Schmidt
Vice President
Power Resources

MAS/cpc

Attachment

cc: Robert Lowenstein, Esquire
Director, Office of Inspection and Enforcement (30)
Director, Office of Management Information and Program Control (3)

LICENSEE EVENT REPORT

CONTROL BLOCK: [ ] (1–6) [PLEASE PRINT ALL REQUIRED INFORMATION]

	LICENSEE NAME	LICENSE NUMBER	LICENSE TYPE	EVENT TYPE
01	FLSLS1 (7–8 9–14)	00–00000–00 (15–25)	4111 1 (26–30)	03 (31–32)

	CATEGORY	REPORT TYPE	REPORT SOURCE	DOCKET NUMBER	EVENT DATE	REPORT DATE
01 CON'T	(57–58)	L (59)	L (60)	050–0335 (61–68)	012077 (69–74)	021877 (75–80)

EVENT DESCRIPTION

02 While reviewing power ascension test data from before and after the
03 5-month fuel reconstitution shutdown (See LER 335-76-35 dated 7/23/76) a
04 possible error in indicated power from the Digital Data Processing System
05 (DDPS) calorimetric (primary heat balance) program was noted. An inten-
06 sive investigation confirmed that the calorimetric program was in error

	SYSTEM CODE	CAUSE CODE	COMPONENT CODE	PRIME COMPONENT SUPPLIER	COMPONENT MANUFACTURER	VIOLATION
07	IF (10)	B (11)	INSTRU (12–17)	N (43)	F120 (44–47)	N (48)

CAUSE DESCRIPTION

08 There are two methods in the calorimetric program for converting analog
09 feedwater flow signals to digital engineering units. One method involves
10 a direct 4 to 20 ma linearization while the other method allows for a

	FACILITY STATUS	% POWER	OTHER STATUS	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION
11	B (9)	080 (10–12)	NA (13–44)	C (45)	NA (46–80)

	FORM OF ACTIVITY RELEASED	CONTENT OF RELEASE	AMOUNT OF ACTIVITY	LOCATION OF RELEASE
12	Z (9)	Z (10)	NA (11–44)	NA (45–80)

PERSONNEL EXPOSURES

	NUMBER	TYPE	DESCRIPTION
13	000 (9–11)	Z (12)	NA (13–80)

PERSONNEL INJURIES

	NUMBER	DESCRIPTION
14	000 (9–11)	NA (12–80)

PROBABLE CONSEQUENCES

15 NA (9–80)

LOSS OR DAMAGE TO FACILITY

	TYPE	DESCRIPTION
16	Z (9)	NA (10–80)

PUBLICITY

17 NA (9–80)

ADDITIONAL FACTORS

18 See Page Two for continuation of Event Description and Cause Description.

19 [ ] (9–80)

NAME: M. A. Schoppman PHONE: 305/552-3779

GPO 881-667

EVENT DESCRIPTION (Continued)

and indicated 2.57% below actual power (at nominal 80%). The program was corrected and now functions properly. This is the first occurrence involving software problems with the DDPS. (335-77-4).

CAUSE DESCRIPTION (Continued)

special linearization curve for each flow transmitter. The second method will allow for non-linear behavior of different transmitters. During initial power ascension, the direct 4 to 20 ma linearization method was used.

Following fuel reconstitution, the program and data base were reloaded into the DDPS and the second method of converting analog signals to engineering units was used. However, the program contained an erroneous scaling factor for the range of the flow transmitted. This error caused the indicated feedwater flow and reactor power to be lower than actual. The program has been corrected and all calorimetric inputs reviewed to verify that no further errors are present in the special linearization method.