ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9203230269 DOC.DATE: 92/03/20 NOTARIZED: NO DOCKET #
FACIL:50-335 St. Lucie Plant, Unit 1, Florida Power & Light Co. 05000335
AUTH.NAME AUTHOR AFFILIATION
SIENKIEWICZ,S. Florida Power & Light Co.
SAGER,D.A. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 92-002-00:on 920219,unit in condition prohibited by TS 5.3.1 due to design error.Design process for fuel reloads will be revised to ensure that all sections of TSs are thoroughly reviewed.W/920320 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 5
TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD2-2 LA	1	1	PD2-2 PD	1	1
	NORRIS,J	1	1			
INTERNAL:	ACNW	2	2	ACRS	2	2
	AEOD/DOA	1	1	AEOD/DSP/TPAB	1	1
	AEOD/ROAB/DSP	2	2	NRR/DET/EMEB 7E	1	1
	NRR/DLPQ/LHFB10	1	1	NRR/DLPQ/LPEB10	1	1
	NRR/DOEA/OEAB	1	1	NRR/DREP/PRPB11	2	2
	NRR/DST/SELB 8D	1	1	NRR/DST/SICB8H3	1	1
	NRR/DST/SPLB8D1	1	1	NRR/DST/SRXB 8E	1	1
	REG FILE 02	1	1	RES/DSIR/EIB	1	1
	RGN2 FILE 01	1	1			
EXTERNAL:	EG&G BRYCE,J.H	3	3	L ST LOBBY WARD	1	1
	NRC PDR	1	1	NSIC MURPHY,G.A	1	1
	NSIC POORE,W.	1	1	NUDOCS FULL TXT	1	1

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK, ROOM P1-37 (EXT. 20079) TO ELIMINATE YOUR NAME FROM DISTRIBUTION LISTS FOR DOCUMENTS YOU DON'T NEED!

A04

FULL TEXT CONVERSION REQUIRED
TOTAL NUMBER OF COPIES REQUIRED: LTTR 32 ENCL 32

RIDS/ADDS

RIDS/ADDS

P.O. Box 128, Ft. Pierce, FL 34954-0128

FPL

March 20, 1992

L-92-71
10 CFR 50.73

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Gentlemen:

Re: St. Lucie Unit 1
Docket No. 50-335
Reportable Event: 92-02
Date of Event: February 19, 1992
Condition Prohibited by Technical Specification Design Features Description Section 5.0 Due to Design Error

The attached Licensee Event Report is being submitted pursuant to the requirements of 10 CFR 50.73 to provide notification of the subject event.

Very truly yours,

D.A. Sager

D. A. Sager
Vice President
St. Lucie Plant

DAS/JJB/kw

Attachment

cc: Stewart D. Ebneter, Regional Administrator, USNRC Region II
Senior Resident Inspector, USNRC, St. Lucie Plant

DAS/PSL #648-92

IE22
1/1

FPL Facsimile of NRC Form 366 (9-89)

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
St. Lucie Unit 1	0 5 0 0 0 3 3 5	1 OF 0 4

TITLE (4) Condition prohibited by Technical Specification design features description section 5.0 due to design error.

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
									N/A	0 5 0 0 0
0 2	1 9	9 2	9 2	-- 0 0 2	-- 0 0	0 3	2 0	9 2	N/A	0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR : (Check one or more of the following) (11)							
POWER LEVEL (10)	1 0 0		20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)
			20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)		73.71(c)
			20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)		OTHER (Specify in Abstract below and in Text NRC Form 366A)
			20.405(a)(1)(iii)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		
			20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)		
			20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Scott W. Sienkiewicz, Shift Technical Advisor	AREA CODE 4 0 7 4 6 5 - 3 5 5 0

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (Limit to 1400 spaces. i.e. approximately fifteen single-space typewritten lines) (16)

On February 19, 1992, at 1200 hours, FPL Nuclear Engineering verified that St. Lucie Unit 1 was in a condition prohibited by Technical Specification section 5.3.1 (Fuel Assemblies Design Features). Technical Specification section 5.3.1 specifies a maximium total weight of 2250 grams of uranium per fuel rod, when the actual nominal maximium weight per fuel rod was 2273 grams. However, the fuel load safety analyses considered the increased uranium mass in the fuel rods and were determined to be acceptable. The reason for this condition was that the design process failed to identify Technical Specification section 5.3.1 as needing a revision.

The root cause of this event was design error, in that the engineering review for the cycle #11 fuel reload process did not include a comprehensive review of sections 5 and 6 of the Plant Technical Specifications. A contributing factor to this event was that these sections were considered descriptive and typically not subject to change.

Corrective actions for this event: 1) Nuclear Engineering will revise the design process to ensure that all sections of the Technical Specifications are thoroughly reviewed. 2) A Technical Specification change package has been submitted to the NRC. 3)Training will be administered to Nuclear Engineering Fuel personnel on the review of engineering packages for fuel reload.

DESCRIPTION OF THE EVENT

On February 18, 1992, St. Lucie Unit 1 was in fuel cycle #11 and in mode 1 at 100% power. On this date, an FPL Nuclear Fuel Engineer performing a review of the St. Lucie Unit 1 Technical Specifications determined that the design features section limited the weight of uranium in the fuel rods to a value below that loaded in cycle #11. At 1200 hours on February 19, 1992, FPL verified that Unit 1 was in a condition prohibited by Technical Specification section 5.3.1 (Fuel Assemblies Design Features). Technical Specification section 5.3.1 specifies a maximium total weight of 2250 grams of uranium per fuel rod, when the actual nominal maximium weight per fuel rod was 2273 grams. However, the fuel rods loaded in cycle #11 (approximately 1/3 of the core) were designed and manufactured to contain a slightly larger mass of uranium to increase fuel efficiency. All fuel reload safety analyses were performed considering the increased uranium mass in the fuel rod and were determined to meet all design and safety criteria for cycle #11. Cycle #11 began on December 20, 1991. Additional review of this event identified that batch A fuel from Cycle # 1 (approximately 1/3 of the initial core) also had a fuel rod uranium weight in excess of 2250 grams (2265 grams).

CAUSE OF EVENT

The root cause of this event was design error due to an inadequate Technical Specification review conducted by Nuclear Engineering, which focused on Technical Specification sections 2 through 4. Minimium margins to the specified acceptable fuel design limits are defined in these sections which support Chapters 4 and 15 of the safety analysis report. However, no actual in-depth review of Technical Specification sections 5 and 6 was performed.

A contributing factor to this event was that Technical Specification section 5.0 was considered descriptive and typically not subject to change.

ANALYSIS OF EVENT

This event is reportable under 10 CFR 50.73.a.2.i. as "any operation or condition prohibited by the Plant Technical Specifications". Although the design of the cycle #11 reload was similiar in physical characteristics to that of the fuel previously loaded into the reactor, the changes resulted in an increased fuel uranium weight (a 1% increase in the fuel rod weight for approximately 1/3 of the core). All fuel reload safety analyses were performed considering the increased uranium mass in the fuel rod and were determined to be acceptable for cycle #11. The following is a general listing of those key design considerations which were reviewed and found acceptable: 1) The increase in the heated length of the fuel rod and its impact on the Minimium Departure from Nucleate Boiling Ratio. 2) The impact of the reduction in gap width on the hot rod gap conductance and on LOCA. 3) The Integrity of the new fuel rod design during normal operation and Anticipated Operational Occurrences (AOO) which was confirmed by a detailed mechanical performance analysis. 4) The radiological consequences for each limiting event which were evaluated against 10CFR100 criteria and found to be bounded by the results of previous analysis. Therefore, the health and safety of the public was not affected by this event.

CORRECTIVE ACTIONS

1) An Engineering Justification for Continued Operation analysis was performed by FPL Nuclear Engineering, which concluded that there were no adverse operational or safety implications with the higher weight of the fuel rods.

2) Nuclear Engineering will revise the FPL design process for fuel reloads, to ensure that all sections of the Technical Specifications are throughly reviewed during the fuel reload initialization process and verified throughout the reload process.

3) A Technical Specification change package and associated 10CFR50.92 (No Significant Hazards Determination) has been developed and submitted to the NRC to revise the requirement regarding fuel rod uranium weight in section 5.3.1 of the St. Lucie Unit 1 Technical Specifications.

4) All previous Cycle # 11 documentation (Plant Change / Modification Package)will be revised to reflect the need for a Technical Specification change package and a revision to the FSAR associated with the fuel rod uranium weight.

5) Training will be administered to Nuclear Engineering Fuels personnel on the review of engineering packages for fuel reload.

ADDITIONAL INFORMATION

1. COMPONENT FAILURES
   NONE

2. PREVIOUS SIMILAR EVENTS

   No other LERs pertaining to fuel problems were identified.