CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9903180328 DOC.DATE: 99/03/10 NOTARIZED: NO DOCKET #
FACIL:50-389 St. Lucie Plant, Unit 2, Florida Power & Light Co. 05000389
AUTH.NAME AUTHOR AFFILIATION
FREHAFER,K.W. Florida Power & Light Co.
STALL,J.A. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 99-001-00:on 990211,inadequate TS SRs for SIT & SDC isolation valves were noted.Caused by failure to correctly implement TS SRs.Submitted LAR to align required TS SR with design bases requirements being verified.With 990310 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 6
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
	PD2-3 PD	1	1	GLEAVES,W	1	1
INTERNAL:	ACRS	1	1	AEOD/SPD/RAB	2	2
	AEOD/SPD/RRAB	1	1	FILE CENTER	1	1
	NRR/DRCH/HOHB	1	1	NRR/DRCH/HQMB	1	1
	NRR/DRPM/PECB	1	1	NRR/DSSA/SPLB	1	1
	RES/DET/EIB	1	1	RGN2 FILE 01	1	1
EXTERNAL:	L ST LOBBY WARD	1	1	LMITCO MARSHALL	1	1
	NOAC POORE,W.	1	1	NOAC QUEENER,DS	1	1
	NRC PDR	1	1	NUDOCS FULL TXT	1	1

CATEGORY 1 DOCUMENT

NOTE TO ALL "RIDS" RECIPIENTS:
PLEASE HELP US TO REDUCE WASTE. TO HAVE YOUR NAME OR ORGANIZATION REMOVED FROM DISTRIBUTION LISTS OR REDUCE THE NUMBER OF COPIES RECEIVED BY YOU OR YOUR ORGANIZATION, CONTACT THE DOCUMENT CONTROL DESK (DCD) ON EXTENSION 415-2083

FULL TEXT CONVERSION REQUIRED
TOTAL NUMBER OF COPIES REQUIRED: LTTR 19 ENCL 19

Florida Power & Light Company, 6351 S. Ocean Drive, Jensen Beach, FL 34957

March 10, 1999

L-99-064
10 CFR § 50.73

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

Re: St. Lucie Unit 2
Docket No. 50-389
Reportable Event: 1999-001-00
Date of Event: February 11, 1999
Inadequate Technical Specification
Surveillance Requirements for SIT and SDC Isolation Valves

The attached Licensee Event Report 1999-001 is being submitted pursuant to the requirements of 10 CFR § 50.73 to provide notification of the subject event.

Very truly yours,

J. A. Stall
Vice President
St. Lucie Nuclear Plant

JAS/EJW/KWF
Attachment

cc: Regional Administrator, USNRC Region II
Senior Resident Inspector, USNRC, St. Lucie Nuclear Plant

NRC FORM 366 (6-1998) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 06/30/2001

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
St. Lucie Unit 2	05000389	Page 1 of 5

TITLE (4)

Inadequate Technical Specification Surveillance Requirements for SIT and SDC Isolation Valves

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 NAME	DOCKET NUMBER
02	11	1999	1999	- 001 -	00	03	10	1999	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	1
POWER LEVEL (10)	100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

	20.2201(b)		20.2203(a)(2)(v)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)
	20.2203(a)(1)		20.2203(a)(3)(i)		50.73(a)(2)(ii)		50.73(a)(2)(x)
	20.2203(a)(2)(i)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71
	20.2203(a)(2)(ii)		20.2203(a)(4)		50.73(a)(2)(iv)		OTHER
	20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A
	20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Kenneth W. Frehafer, Licensing Engineer	(561) 467 - 7748

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
A	BQ	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-

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 15 single-spaced typewritten lines)* (16)

On February 11, 1999, St. Lucie non-licensed personnel discovered discrepancies between the St. Lucie Unit 2 Technical Specification surveillance requirements for the safety injection tank isolation valve and the shutdown cooling system isolation valve interlocks and the plant procedures used to implement the surveillances.

Specifically, the interlocks were being tested conservatively with regards to Technical Specification requirements. Although past surveillances were not in verbatim compliance with the Technical Specification requirements, FPL determined that the intent of the surveillances were met. Additionally, current plant conditions do not require the automatic opening of the safety injection tank discharge isolation valves or closing of the shutdown cooling system isolation valves.

The cause of this event was the failure to correctly implement the potentially non-conservative Technical Specification surveillance requirements. However, a license amendment will be submitted to align the required Technical Specification surveillance requirements with the design bases requirements being verified.

Description of Event

On February 11, 1999, St. Lucie non-licensed personnel discovered discrepancies between the St. Lucie Unit 2 Technical Specification surveillance requirements for the safety injection tank (SIT) isolation valve [EIIS:BQ:ACC:ISV] and the shutdown cooling (SDC) system isolation valve [EIIS:BQ:ISV] interlocks [EIIS:BQ:IEL] and the plant procedures used to implement the surveillances. Every 18 months, Technical Specification Surveillance 4.5.1.1.d.1 requires verification that each SIT isolation valve (V-3614, V-3624, V-3634, and V-3644) opens automatically when actual or simulated reactor coolant system (RCS) pressure exceeds 515 psia. Every 18 months, Technical Specification Surveillance 4.5.2.e.1 requires verification of the automatic isolation and interlock action of the SDC system (V-3480, V-3481, V-3651, and V-3652) from the RCS when RCS pressure (actual or simulated) is greater than or equal to 515 psia.

Plant procedures 2-1400064P, "Installed Plant Instrumentation Calibration (Pressure)," and 2-1200055, "Functional Calibration of the Automatic Isolation of the Shutdown Cooling System from the Reactor Coolant System," calibrates and tests the automatic opening of the SIT isolation valves and closing of the SDC system isolation valves at 500 psia. This LER addresses the concern between the Technical Specification requirement to test the SIT isolation valve opening and the SDC system isolation valve closing at 515 psia and the actual practice of testing at 500 psia.

Cause of the Event

The cause of this condition was the failure to correctly implement the potentially non-conservative Technical Specification surveillance requirements. Although it is clearly understood that the surveillance setpoint meets the UFSAR design basis function, the explicit wording of the technical specification surveillances do not coincide with the design basis functions since a value of greater than 515 psia would be acceptable. As such, the current Technical Specification surveillance requirements for the SIT and SDC isolation valves do not appear to be conservative with respect to the required safety function. Therefore, the surveillance wording should be changed to coincide with the design basis function.

The Technical Specifications and implementing surveillance procedures for St. Lucie Unit 1 were reviewed and this condition does not apply.

Analysis of Event

The SIT outlet valve Technical Specification Surveillance, 4.5.1.1.d.1 requires verification that these valves open automatically when an actual or simulated RCS pressure signal exceeds 515 psia. The surveillance was conducted at 500 psia. The emergency core cooling system Technical Specification surveillance 4.5.2.e.1 requires verification that the SDC loop isolation valves (V-3480, V-3481, V-3651, and V-3652) isolate when RCS pressure (actual or simulated) is greater than or equal to 515 psia. The surveillance tested this feature at 500 psia.

Although as discussed below, these surveillances met the intent of the Technical Specification requirements, verbatim compliance with the Technical Specification surveillances was not met. Therefore, the surveillance testing, and subsequent mode changes, represented a condition prohibited by the plant's Technical Specifications and is reportable under 10 CFR 50.73(a)(2)(i)(B).

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
St. Lucie Unit 2	05000389	1999	- 001	- 00	Page 3 of 5

TEXT *(If more space is required, use additional copies of NRC Form 366A)* (17)

Assessment of Safety Significance

The function of the SITs are to supply borated water to the reactor vessel during the blowdown phase of a loss of coolant accident (LOCA), to provide inventory to help accomplish the refill phase that follows thereafter, and to provide RCS makeup for a small break LOCA. The SITs are pressure vessels partially filled with borated water and pressurized to between 500 and 650 psig with nitrogen gas. During Mode 3 and 4 operation with pressurizer pressure less than 1750 psia, allowable SIT pressure is 235 to 650 psig. For plant operation in Mode 3 and 4 heatup and cooldown evolutions, with the SIT discharge isolation valves open, the control room operators adjust SIT pressures to remain below RCS pressure to prevent inadvertent SIT discharge. The SITs are passive components since no operator or control action is required for them to perform their function. Internal tank pressure is sufficient to discharge the contents to the RCS, if RCS pressure decreases below the SIT pressure.

The SIT isolation valves are interlocked with pressurizer pressure instrumentation channels to ensure that the valves will automatically open as RCS pressure increases above a predetermined setpoint, and to prevent inadvertent closure prior to or during an accident. The Technical Specification basis for the SIT discharge isolation valve automatic open setpoint is based on the minimum assumed nitrogen SIT overpressure for the St. Lucie Unit 2 accident analysis of 500 psig, or 515 psia. The valves also receive a safety injection actuation signal (SIAS) to open. These features ensure that the valves meet the intent of Institute of Electrical and Electronic Engineers (IEEE) Standard 279-1971 for "operating bypasses" and the SITs will be available for injection without reliance on operator action. However, to satisfy single failure considerations power to the SIT discharge isolation valves is removed once the valves are open. Periodic Technical Specification surveillances verify that power to the SIT discharge isolation valves is removed and that the valves are open.

The SDC system is designed to achieve and maintain a cold shutdown condition by removing residual energy from the RCS and decay heat from the reactor core. While the RCS has a design pressure of 2500 psia, the majority of the SDC system components have a design pressure of 500 psig (with selected portions of the suction piping designed for 350 psig). Since two piping systems of different design pressures are connected, suitable isolation capability must be provided when the RCS is being operated at higher pressures. As described within UFSAR Section 5.4.7.2.3, protection against overpressure in the SDC system is provided by relief valves and interlocks. The low temperature overpressure protection (LTOP) analysis and setpoints are not affected by this issue.

When the SDC system is in use, the system becomes an extension of the reactor coolant pressure boundary. Since a number of pressurization sources exist within or are connected to the high pressure RCS, the low pressure SDC system must be protected against postulated pressurization transients when the systems are connected. To accomplish this, multiple relief valves are provided on each SDC system suction line to protect against overpressurization.

The overpressure protection of the SDC system, provided by SDC system relief valves, is based on those transients postulated to occur during normal SDC system operation (i.e., the inadvertent starting of two high pressure safety injection (HPSI) pumps, three charging pumps, isolation of letdown, and all pressurizer back-up heaters

Assessment of Safety Significance (cont'd)

energized). These relief valves are not intended to protect the SDC system against overpressurization as a result of being inadvertently exposed to full RCS pressure during power operation; the SDC system isolation valves and interlocks provide this function.

The SDC system isolation valves are interlocked with the pressurizer pressure instrumentation channels to prevent their opening with RCS pressure above 276 psia and ensure that the valves will automatically close as RCS pressure increases above 500 psia. The SDC system isolation valve automatic closing interlock (ACI) provides a close signal to the isolation valves when RCS pressure exceeds 500 psia. Therefore, should these valves be inadvertently left open during RCS heatup and pressurization, the SDC system isolation valves would automatically close upon reaching this predetermined pressure setpoint. Likewise, while in a SDC alignment, should an RCS pressure transient occur resulting in pressurizer pressure above 500 psia, the SDC isolation valves would isolate and prevent potential loss of RCS inventory via the SDC system (multiple relief valves).

The explicit wording (text) of the applicable Technical Specification surveillances is to ensure that the SIT and SDC isolation valves are repositioned at or above 515 psia. In actuality, 515 psia represents the maximum value at which time the automatic function should occur. Although the current plant procedures calibrate and test the setpoints at 500 psia, these settings are conservative with regards to the design bases functions being verified by surveillance. The required positions of the SIT and SDC isolation valves at 515 psia are not invalidated just because the valves actuate conservatively at 500 psia. Therefore, the issue is that the explicit requirements of the Technical Specification surveillances do not coincide with the intent and design basis function.

There was no safety consequence of these surveillance inadequacies because the incipient action of the original setpoint is applied in the conservative direction (i.e. all these valves will automatically switch positions to their required safety position a little earlier). Additionally, the operating conditions are still within the SDC/SIT system requirements. The St. Lucie SITs have operability requirements for Mode 4 operations, and the current actual 500 psia setpoint is within the allowed SIT pressure band for Mode 4 plant start-up evolutions. Low mode overpressure protection for the SDC system during plant start-up evolutions is provided by the SDC system relief valves, and the SDC system ACI feature is provided for protection against RCS pressure transients and operator error during a start up.

Based on the above, the intent of the surveillances was met. Additionally, St. Lucie Unit 2 is currently in Mode 1, with the SIT discharge isolation valves open and deenergized. Operation of the SIT discharge automatic open function is not required. Furthermore, the SDC system isolation valves are locked closed, and the ACI function is not required. The surveillance requirements only provide protection during a plant start up from cold shutdown conditions (e.g., when transitioning from Mode 5 to Mode 4 operations). Therefore, there is no current operability concern with the non-compliance of the explicit terms of the Technical Specification surveillance requirements, and there was no adverse effect on the health and safety of the public.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
St. Lucie Unit 2	05000389	1999	- 001	- 00	Page 5 of 5

TEXT *(If more space is required, use additional copies of NRC Form 366A)* (17)

Corrective Actions:

1. FPL will submit a change to the Technical Specifications such that the literal wording meets the intent of the surveillances.
2. FPL will review and correct identified UFSAR discrepancies related to the SIT and SDC interlocks.
3. In order to align the Technical Specification surveillance requirements with the design bases functions being verified, FPL is developing a proposed license amendment to ensure verification of the automatic operation of the SIT and SDC isolation valves occurs at or below 515 psia. In the interim, should a plant shutdown and cooldown to Mode 5 occur and subsequent plant startup be required, a Notice of Enforcement Discretion (NOED) or expedited NRC approval of the proposed license amendment to change the surveillance wording will need to be obtained prior to startup.

Additional Information:

Failed Components Identified:

None

Past Similar Occurrences:

None