

# CATEGORY 1

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9608020135 DOC.DATE: 96/07/24 NOTARIZED: NO DOCKET #  
 FACIL:50-389 St. Lucie Plant, Unit 2, Florida Power & Light Co. 05000389  
 AUTH.NAME AUTHOR AFFILIATION  
 LAVELLE,S. Florida Power & Light Co.  
 STALL,J.A. Florida Power & Light Co.  
 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 96-003-00:on 960625,SITs discharge valves procedurally isolated in Mode 4 due to personnel error.Issued night order to licensed operators.W/960724 ltr.

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Florida Power & Light Company, P.O. Box 128, Fort Pierce, FL 34954-0128

July 24, 1996

L-96-183  
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: 96-003  
Date of Event: June 25, 1996  
Safety Injection Tanks Discharge Valves  
Procedurally Isolated in Mode 4 Due to Personnel 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,

A handwritten signature in cursive, appearing to read 'JAS'.

J. A. Stall  
Vice President  
St. Lucie Plant

JAS/SL

Attachment

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

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PDR ADOCK 05000389  
S PDR

7/24/96  
11

LICENSEE EVENT REPORT (LER)

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

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND 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.

FACILITY NAME (1)

ST LUCIE UNIT 2

DOCKET NUMBER (2)

05000389

PAGE (3)

1 OF 4

TITLE (4)

Safety Injection Tanks Discharge Valves Procedurally Isolated in Mode 4 Due to Personnel 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 NAME	DOCKET NUMBER
6	25	96	96	03	000	7	24	96	NA	NA
									NA	NA

OPERATING MODE (9)	6	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)								
POWER LEVEL (10)	000	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)(ix)		
		20.2203(a)(2)(i)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71		
		20.2203(a)(2)(iii)		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)
Sean Lavelle, Licensing	(561) 467-7160

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)

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

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

During an ongoing procedure upgrade program, it was found that the Unit 2 safety injection tanks (SITs) were being rendered inoperable in Mode 4 by closing and deenergizing the discharge valves in accordance with procedure. The SIT design bases in Mode 4 are for the SIT discharge isolation valves to reopen automatically should reactor coolant system (RCS) pressure increase. Plant operating procedures directed that the SITs be isolated and the discharge isolation valves be deenergized. Deenergizing the valves disabled the automatic reopen feature.

The cause of the discrepancy between the procedural direction and the Technical Specification for SIT operability in Mode 4 is personnel error. The initial writing of the procedure in May 1982 did not ensure compliance with the Technical Specification and subsequent reviews did not capture the error.

An evaluation was performed which verified that the inoperability of the SITs in Mode 4 would not lead to a safety concern since the flow of the required high pressure safety injection pump in service in Mode 4 would exceed the boil off from decay heat. Thus, the SITs would not be required to maintain the water level in the core.

Corrective Actions: 1) A night order was issued to the licensed operators to ensure they are informed of the need to maintain the SIT discharge isolation valves energized in Mode 4. 2) All applicable procedures have been revised to ensure the SITs remain operable until Mode 5. 3) The procedure development and validation process has been enhanced. 4) There is a review in progress identifying and correcting inconsistencies between the Final Safety Analysis Report, Technical Specifications, and plant procedures. 5) This Licensee Event Report will be incorporated in licensed operator requalification class.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

FACILITY NAME (1)  ST. LUCIE UNIT 2	DOCKET  05000389	LER NUMBER (6)			PAGE (3)  2 OF 4
		YEAR	SEQUENTIAL	REVISION	
		96	-- 003	-- 000	

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

**DESCRIPTION OF THE EVENT**

Technical Specification 3/4.5.1 addresses safety injection tank (SIT) (EISS:BQ) operability requirements for Mode 4 with reactor coolant system (RCS) (EISS:AB) pressure less than 276 psia. Unit 2, Normal Operating Procedures 2-0030127, Reactor Plant Cool-down-Hot Standby to Cold Shutdown and 2-0030121, Reactor Plant Heatup-Cold Shutdown to Hot Standby direct the discharge isolation valve of each required SIT to be closed and deenergized when in Mode 4 and RCS pressure is less than 276 psia. The pressure maintained in the SITs in Mode 4 with RCS pressure less than 276 psia is a minimum of 220 psia. The Technical Specification allows the SITs to be isolated but not rendered inoperable. It is desirable to isolate the SITs to ensure that the tanks would not discharge the nitrogen cover gas into the RCS. The design bases assume the SIT discharge isolation valves reopen in the unlikely event the RCS increases in pressure. Contrary to this, the valves were deenergized rendering the automatic open feature inoperable. This discrepancy is applicable to Unit 2 only.

In accordance with the procedures, the discharge valves of the SITs are closed by the operators as RCS pressure is being reduced during the shutdown evolution. In addition, the procedures directed opening the breakers for each of the valves thus rendering the SITs inoperable. There is an interlock which will not allow the SIT discharge valves to be closed above 276 psia and an interlock that automatically opens the SIT discharge valves when RCS pressure reaches 500 psia. The valves are designed to open when RCS pressure reaches 500 psia and/or a Safety Injection Actuation Signal (SIAS) (EISS:JE) is initiated.

It was found that the procedures have directed the isolation and removal of power to the SIT discharge valves since the issuance of the operating license for St. Lucie Unit 2. Due to this procedural error, the requirements for Mode 4 operability of the SITs have not been complied with on each cool-down and heat-up for refueling and maintenance activities since initial startup.

**CAUSE OF THE EVENT**

The cause of the event was personnel error resulting in a discrepancy between the identified plant procedures and the Technical Specification for SIT operability while in Mode 4. The applicable operating procedures have directed the isolation of the SITs and removal of power to the discharge isolation valves since Revision 0 (approved in May 1982). As such, the discrepancy is a result of cognitive error in the implementation of Technical Specification 3.5.1 and the footnote (asterisk) statement concerning Mode 4 operation, specifically, "In MODE 4 with pressurizer pressure less than 276 psia, the safety injection tanks may be isolated." The process for review of new procedures and subsequent periodic reviews in effect since the initial writing of the applicable procedures did not adequately capture the Technical Specification requirements for Mode 4 operation.

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

In the Mode 4 statement, the term "isolated" was interpreted as allowing the valves to be rendered inoperable. Previous operating experience on Unit 1, as permitted by Technical Specification, provided for removal of power to the SIT discharge isolation valves, when closed, to isolate the SITs, thus preventing the discharge of the nitrogen cover gas to the RCS. As such, when the plant is at a pressure less than 276 psia, the Unit 2 procedure to isolate the SITs included the removal of power to the valves and did not consider Mode 4 conditions for which an SIAS and/or a pressure interlock is designed to automatically open the SIT discharge isolation valves.

**ANALYSIS OF THE EVENT**

This event is reportable under 50.73(a)(2)(i)(B): Any operation or condition prohibited by the plant's Technical Specifications.

An evaluation was performed to assess the requirements for SITs during Mode 4 with RCS pressure below 276 psia. The SIT operability requirements are based on providing a sufficient volume of borated water injected into the core if RCS pressure falls below the pressure of the SITs in the unlikely event of a RCS pipe rupture. The SIT injection supplies sufficient volume and initial cooling to prevent unacceptable peak cladding temperatures. The evaluation considered the most conservative time to reach Mode 4 which resulted in worst case requirements for SITs. The evaluation determined the SIT requirements based on boil-off rate in the core. The boil-off rate was compared to the injection from one high pressure safety injection (HPSI) (EIS:BQ) pump since one is required to be operable in Mode 4 at all times. The evaluation concluded that, in Mode 4 with RCS pressure below 276 psia, the SITs were not required to keep the core covered in the unlikely event of a large RCS pipe rupture, since the HPSI pump capacity exceeded the boil-off rate. In addition, the SITs are not required to fulfill any other safety function in Mode 4.

This event is not applicable to Unit 1 since there is no operability requirement due to the different licensing bases and Technical Specifications requirements for SITs in Mode 4.

The unavailability of the Unit 2 SITs would not pose any safety concern in Mode 4 with RCS pressure below 276 psia. Therefore, the health and safety of the public were not affected.

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

**CORRECTIVE ACTIONS**

1. Operations issued a night order to the licensed utility operators informing them of this situation to ensure immediate compliance in the event the unit would be cooled down.
2. Procedure changes have been made to the applicable procedures to ensure the SITs remain operable until the unit is in Mode 5.
3. The process for new and upgraded procedure development and for periodic review of procedures has been changed to ensure the applicable sections of the Updated Final Safety Analysis Report and Technical Specifications are reviewed by the writer and listed for subsequent review.
4. There is a review in progress identifying and correcting inconsistencies between the Final Safety Analysis Report, Technical Specifications, and plant procedures.
5. This Licensee Event Report will be incorporated in licensed operator requalification training.

**ADDITIONAL INFORMATION**

Component Failure

none

Previous Similar Event

none

