

CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9708050269 DOC. DATE: 97/07/29 NOTARIZED: NO DOCKET #
 FACIL: 50-389 St. Lucie Plant, Unit 2, Florida Power & Light Co. 05000389
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 STALL, J.A. Florida Power & Light Co.
 RECIPIENT NAME RECIPIENT AFFILIATION

SUBJECT: LER 97-006-00: on 970630, discovered inadequate testing of engineered safety features subgroup relays. Caused by inadequacy in implementing TS requirements in surveillance procedures. Revised surveillance procedures. W/970729 ltr.

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Florida Power & Light Company, 6501 South Ocean Drive, Jensen Beach, FL 34957

July 29, 1997

L-97-190
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: 97-006
Date of Event: June 30, 1997
Operation Prohibited by Technical Specifications due to Inadequate
Surveillance Testing of Engineered Safety Features Subgroup Relays

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,

J. A. Stall
Vice President
St. Lucie Plant

JAS/EJB

Attachment

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

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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: 60.0 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-8 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3160-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TITLE (4)
Operation Prohibited by Technical Specifications due to Inadequate Surveillance Testing of Engineered Safety Features Subgroup Relays

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
06	30	97	97	-- 006	-- 00	07	29	97	N/A	
									N/A	

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)									
POWER LEVEL (10) 100	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(2)(v)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)						
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(x)						
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 73.71						
	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> OTHER						
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> Specify in Abstract below or in NRC Form 366A						
<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)								

LICENSEE CONTACT FOR THIS LER (12)

NAME Edwin J. Benken, Licensing Engineer	TELEPHONE NUMBER (include Area Code) (561) 467 - 7156
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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).	<input checked="" type="checkbox"/> NO				

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

On June 30, 1997, St. Lucie Unit 2 was operating in Mode 1 at 100 percent power. An engineering review identified a deficiency in the performance of Engineered Safety Features (ESF) logic testing associated with two subgroup relays for the containment isolation system. The subgroup relays were required to be tested at a semi-annual frequency, but had instead been tested once per 18 months. This represented a failure to perform a surveillance requirement within the allowed surveillance interval and therefore a condition prohibited by the plant Technical Specifications.

The subject relays function to secure the operation of the containment purge fans and to close the containment purge isolation valves during actuation of a containment isolation signal. Since these containment purge components are required to be maintained in their post-accident configuration during reactor operation, the missed testing was not safety significant. The subgroup relays were recently tested satisfactorily and are currently within the allowable surveillance interval.

The failure to test the ESFAS subgroup relays at the required surveillance interval was caused by an inadequacy in implementing the TS requirements in the plant surveillance procedures.

Corrective Actions include: 1) Plant surveillance procedures will be revised to include the appropriate requirements for surveillance testing of the subgroup relays. 2) Surveillance testing is to be performed in accordance with revised procedural instructions and within the allowable surveillance interval. 3) Logic circuit test procedures are continuing to be reviewed at St. Lucie Unit 1 for proper TS implementation.

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

DESCRIPTION OF THE EVENT

St. Lucie Unit 2 Technical Specifications (TS) for the Engineered Safety Features Actuation System (ESFAS) [EIS:JE] require that a subgroup relay test be performed semi-annually to verify operability of the automatic actuation logic for the containment isolation system (CIS). The Unit 2 Updated Final Safety Analysis Report (UFSAR), Table 7.3-9a, identifies specific subgroup relays which can not be tested with the reactor at power due to the potential impact to plant operation. For these relays, surveillance testing is performed when the unit is shutdown.

On June 30, 1997, a discrepancy was identified regarding the plant TS surveillance requirement (TS 4.3.2.1) for the ESFAS subgroup relays, the UFSAR table 7.3-9a, and current plant testing practices. A review of the plant testing procedures performed by FPL engineering personnel determined that two ESFAS subgroup relays (K512A and K612A) [EIS:JE:RLY] were not being appropriately tested within the semi-annual period as required by TS and that these relays were not exempt from testing at power as described in the UFSAR table. The relays were being functionally tested on an 18 month basis during performance of the Engineered Safety Features (ESF) periodic test and not on a 6 month frequency as required. Subgroup relays K512A and K612A function upon receipt of a Containment Isolation Actuation System (CIAS) signal to secure the containment purge fans, HVE-8A and HVE-8B [EIS:VA:FAN], and to close the containment purge isolation valves FCV-25-1 through FCV-25-6 [EIS:VA:ISV]. The purge fans and isolation valves are maintained in their post-accident configuration when the Unit is at power. St. Lucie Unit 2 was operating in Mode 1 at 100 percent power when the testing discrepancies were identified. Performance of the 18 month integrated ESF test, completed May 19, 1997, currently satisfies the six month surveillance requirement.

The identification of the ESFAS subgroup relay test discrepancy was made during the preparation of an engineering evaluation for a plant license amendment designed to clarify the plant TS with regard to subgroup relay testing. This was a follow up action being implemented subsequent to FPL's review of electrical logic circuit testing for St. Lucie Unit 2, which was performed in accordance with the recommendations of Generic Letter 96-01.

CAUSE OF THE EVENT

The failure to test ESFAS subgroup relays K512A and K612A was caused by an inadequate surveillance test procedure. Surveillance Operating Procedure 2-0400053, "Engineered Safeguards Relay Test," contains the instructions required for verifying the proper functioning of ESF relays as required by the plant Technical Specifications. The surveillance procedure as written did not provide a conclusive test of operability for subgroup relays K512A and K612A by verifying component actuation or the operation of output contacts from the relays.

Justification for not including test instructions for the subgroup relays in the procedure was insufficient, in that it was based upon the requirement that the containment purge isolation valves must remain in their closed (safe) position during power operation. Since the valves could not be opened in Modes 1 through 4, and the purge fans were required to be maintained deenergized, it was incorrectly assumed that testing for the containment isolation function was not required in these Modes.

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ANALYSIS OF THE EVENT

ESFAS testing is conducted periodically during normal plant operation in accordance with the St. Lucie Unit 2 Technical Specifications to verify operability. TS surveillance requirement 4.3.2.1, requires that each ESFAS instrument channel be demonstrated operable by the performance of the Channel Check, Channel Calibration and Channel Functional test operations for the Modes and at the frequencies described in TS Table 4.3-2. Note 2 of this table specifies that for the automatic actuation logic associated with CIAS, a subgroup relay test shall be performed to include the energization or deenergization of each subgroup relay and verification of the operability for each relay. The frequency specified by the TS for performance of this surveillance is semi-annual (SA). This condition does not apply to St. Lucie Unit 1, as the ESFAS instrumentation Technical Specifications at Unit 1 do not contain the same requirement for semi-annual testing of the CIAS subgroup relays.

The ESFAS actuation devices which are not tested during reactor operation, due to their impact to the plant, are tested during scheduled reactor shutdowns to assure that they are capable of performing their intended function. This is described in the St. Lucie Unit 2 UFSAR, Table 7.3-9a, which lists the ESFAS actuation relay devices not tested during normal operating conditions. Subgroup relays K512A and K612A are not included in the table and are capable of being tested during power operation by verification of output contact status using a digital volt meter (DVM). These relays are therefore required to be tested on a semi-annual basis.

Subgroup relays K512A and K612A actuate components of the containment purge system upon receipt of a CIAS signal. Specifically, the relays function to close the containment purge isolation valves FCV-25-1, 2, 3, 4, 5 and 6, and to stop containment purge fans HVE 8A and 8B. The relays are cycled during the semi-annual surveillance test, however verification of component actuation or output contact status is not performed. Although a complete verification of operability for these relays was not performed on a semi-annual basis, the relays were functionally tested every 18 months during the performance of the integrated Engineered Safety Features Periodic Test and had been satisfactorily tested during the last performance of this test, completed May 19, 1997. As a result of the previous surveillance, current system operation is within the allowable six month surveillance interval and therefore, no operability concern exists. The failure to previously test ESFAS subgroup relays K512A and K612A on a semi-annual basis, as required by TS 4.3.2.1, represents a condition prohibited by the plant Technical Specifications and is therefore reportable under 50.73 (a) (2) (i) (B).

Analysis of Safety Significance

ESFAS subgroup relays K512A and K612A affect only the containment purge components previously described. With the exception of the containment isolation function, the containment purge system is a non-safety related and non-seismic system used to provide ventilation of the containment building for personnel access during shutdown and refueling. The system is not used at power and is therefore not required to operate following a design basis accident.

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ANALYSIS OF THE EVENT (Continued)

The containment purge exhaust fans, HVE-8A and HVE-8B are maintained deenergized during plant operation. Additionally, TS 3.6.1.7 requires that each containment purge isolation valve be sealed closed when operating in Modes 1,2, 3 or 4. As a result of the above measures, the containment purge system is maintained in its post-accident configuration during power operation (Modes 1 through 4) and is not required to reposition in the event of an ESFAS actuation during these Modes.

The actuation of CIS components by subgroup relays K512A and K612A was satisfactorily tested during an integrated ESF periodic surveillance completed on May 19, 1997. The failure to test the ESFAS subgroup relays, K512A and K612A, at a semi-annual frequency is not safety significant since the components affected by these relays are required to be maintained in their post-accident configuration during Modes 1 through 4.

CORRECTIVE ACTIONS

1. Plant operating procedure 2-0400053, "Engineered Safeguards Relay Test" will be revised to include surveillance testing for the output contact status of subgroup relays K512A and K612A which affect the containment purge components.
2. ESFAS surveillance testing for the Unit 2 containment purge isolation valves and fans will be conducted in accordance with the revised procedure and within the allowable surveillance interval based on the last surveillance test completed for these components.
3. FPL is continuing to perform a review of the St. Lucie Unit 1 ESFAS surveillance test procedures and logic circuit testing in accordance with the recommendations of Generic Letter (GL) 96-01 to ensure that TS requirements are being adequately implemented.
4. In order to reemphasize the expectation that plant surveillances and procedures fully implement the Technical Specification requirements in a verbatim manner, training briefs are being issued to key maintenance and site engineering personnel. In addition, this event will be included into the continuing training program for licensed operators as a review of lessons learned.

ADDITIONAL INFORMATION

Component Failures - None

Previous Similar Events - LERs 389/96-005 and 389/96-006 describe surveillance inadequacies previously identified by FPL during logic circuitry testing reviews performed in accordance with the recommendations of GL 96-01.