

CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9707150008 DOC. DATE: 97/07/11 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.
 RECIPIENT NAME RECIPIENT AFFILIATION

SUBJECT: LER 97-004-00: on 970611, discovered incorrect original cable tray fire stop assembly installation outside App R design basis. Caused personnel error. Posted hourly fire watch patrols. W/970711 ltr.

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

July 11, 1997

L-97-179
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: 97-004
Date of Event: June 11, 1997
Incorrect Original Cable Tray Fire Stop
Assembly Outside Appendix R Design Bases

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/KWF

Attachment

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

9707150008 970711
PDR ADOCK 05000389
S PDR



an FPL Group company

IE 22
1/1

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 (IT-8 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)

Incorrect Original Cable Tray Fire Stop Assembly Installation Outside Appendix R Design Bases

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	11	97	97	-- 004	-- 0	7	11	97		05000
										05000

OPERATING MODE (9)	POWER LEVEL (10)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)				
1	100	20.2201(b)		20.2203(a)(2)(v)	50.73(a)(2)(i)	50.73(a)(2)(viii)
		20.2203(a)(1)		20.2203(a)(3)(f)	X 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)(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

K. W. Frehafer, Licensing Engineer

TELEPHONE NUMBER (include Area Code)

(561) 468-4284

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)

On June 11, 1997, St. Lucie Unit 2 was in Mode 1 at 100 percent power. Inspection results indicated that, generically, two sided cable tray fire stop assemblies lacked the installation of ceramic fiber between cables within the fire barrier. FPL determined that the as-built configuration of two sided cable tray fire stop assemblies did not meet the tested configuration for a three hour fire rated assembly. All the St. Lucie Unit 2 two sided cable tray fire stop assemblies were declared inoperable.

The apparent cause of this event was due to personnel error during the implementation of design drawings or insufficient design guidance during initial installation. Corrective actions include the posting of hourly fire watch patrols that were established to compensate for the inoperable fire stop assemblies. Repairs or plant modifications will be implemented to restore the affected fire stop assemblies to their required three hour fire rating.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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ST LUCIE UNIT 2	05000389	97	-- 004	-- 0	2 OF 4

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

DESCRIPTION OF THE EVENT

On June 11, 1997, St. Lucie Unit 2 was in Mode 1 at 100 percent power. FPL was investigating discrepancies of two sided cable tray fire stop assemblies identified during previous field surveillances. Intrusive inspections of the remaining population of fire stop assemblies of this design were in progress to determine the extent of the issue. Preliminary inspection results indicated that, generically, the as-built configuration of two sided cable tray fire stop assemblies lacked the installation of ceramic fiber between cables within the fire barrier. The configuration did not conform to the design drawings and FPL ascertained that the identified field conditions were not previously evaluated during initial construction. Therefore, the two sided cable tray fire stop assemblies did not meet the tested configuration for a three hour fire rated assembly, as required by the plant 10 CFR 50 Appendix R commitments.

As a conservative measure, all the St. Lucie Unit 2 two sided cable tray fire stop assemblies were declared inoperable based on the preliminary inspection results. Hourly fire watch patrols were established as compensatory measures as required by plant administrative procedures. St. Lucie Unit 1 does not utilize cable tray fire stops of this design, so this condition is only applicable to Unit 2.

CAUSE OF THE EVENT

A review of the original installation and inspection documentation for the construction of the two sided cable tray fire stop assemblies suggests that the apparent cause of this event was due to personnel error during the implementation of design drawings or insufficient design guidance during initial installation. A contributing cause was that the installation drawings were not clear in specifying that ceramic fiber needed to be installed around each cable in the fire stop assembly.

This condition was discovered during a recent fire stop surveillance. Consistent with the Industry, normal fire barrier inspection criterion is a visual inspection of exposed surfaces checking for voids, gaps, and holes. No intrusive inspections or disassembling of fire barriers are performed. One of the fire stops was located such that a visual inspection was difficult to perform, so the inspector ran his hand around the fire stop to check for voids, gaps, and holes. The inspector noted air flow between cables through the assembly. Although air flow was noted during that inspection, routine detection of air flow through a discrepant fire stop is problematic in nature and highly dependent on the existence of a differential pressure across the fire barrier. Even if previous inspections were performed in a hands on manner, a differential pressure could not be assured because of Reactor Auxiliary Building ventilation lineup or door configurations in effect during the inspection.

ANALYSIS OF THE EVENT

This condition is reportable under 10 CFR 50.73(a)(2)(ii)(B) because the as found condition of the Unit 2 two sided cable tray fire stop assemblies do not meet three hour fire barrier requirements. The fire barriers are discussed in the Unit 2.UFSAR in chapter 9.5A. The principal design objective of the fire barrier and associated penetration seals is to protect personnel and redundant equipment from the effects of postulated fires in the reactor auxiliary building, to assure the capability to achieve safe shutdown in accordance with 10 CFR 50 Appendix R and BTP 9.5-1 Appendix A. The barriers and associated penetration seals are passive devices and are part of the plant fire protection system.

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ANALYSIS OF THE EVENT (continued)

The ceramic fiber between the cables is an extension of the Marinite board (ceramic fiber board) fire stop face. This ceramic fiber serves to resist heat, flame, and smoke propagation through the fire stop. In conjunction with the flame retardant this is an effective three hour fire rated assembly. (See Figure 1 for typical design details). However, without the ceramic fiber between the cables a path for heat and smoke propagation is provided. This is a small and tortuous path in that the space between the cables is typically small. The heat would still need to travel at least one foot down the tray where the flame retardant is applied, then would enter a large open space in the wall, and would then need to exit through another foot of confined space between cables on the non-fire side of the assembly. Localized hot spots would exist. The IEEE-383 cables will resist the effects of the increased temperatures and help to prevent the ignition of cable in the non-fire side of the assembly.

ASSESSMENT OF SAFETY SIGNIFICANCE

The two sided cable tray fire stop deficiencies were evaluated and determined to be not safety significant. Although the as-found condition of these cable tray fire stops was not in accordance with the tested and design conditions, and would probably not meet a three hour fire rating without the ceramic fiber between the cables, the installation does provide resistance to fire propagation. In addition, fire protection defense in depth provides an integrated means for mitigating the consequences of a fire, such as the existing smoke detection systems, automatic water fire suppression systems, hose stations, administrative programs that control combustible loading, and operator actions. Based on the above, it is concluded that the health and safety of the public were not adversely affected by the condition of the St. Lucie Unit 2 two sided cable tray fire stop assemblies.

CORRECTIVE ACTIONS

1. The hourly fire watch patrols were established to compensate for the inoperable two sided cable tray fire stop assemblies as required by plant administrative procedures.
2. FPL will either rework the associated fire stop assemblies to their original design or develop and implement a new design to restore the degraded barriers to a three hour fire barrier rating.

ADDITIONAL INFORMATION

None.

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

**TWO-SIDED CABLE TRAY SEAL
IN FLOOR/WALL OPENING FIRESTOP**

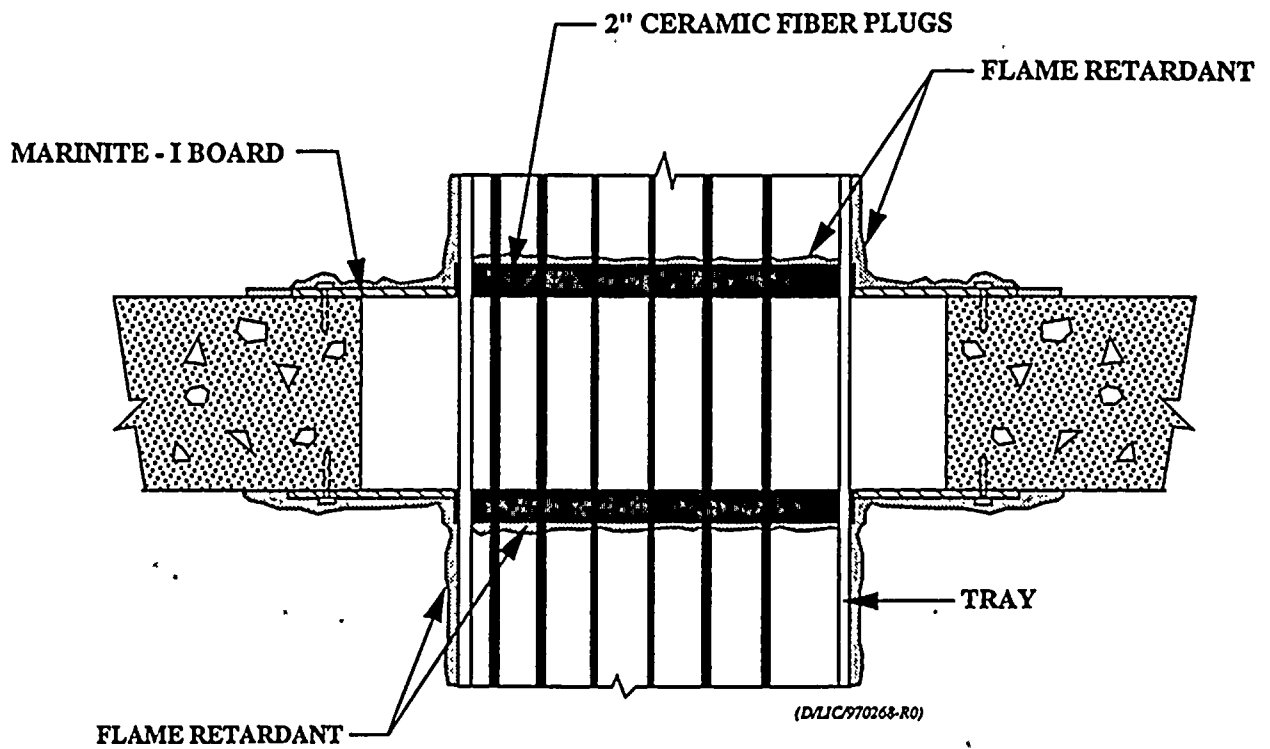


Figure 1
Typical Two Sided Cable Tray Fire Stop Assembly

