

December 24, 2003

Mr. J. A. Stall  
Senior Vice President, Nuclear and  
Chief Nuclear Officer  
Florida Power and Light Company  
P.O. Box 14000  
Juno Beach, Florida 33408-0420

SUBJECT: ST. LUCIE PLANT, UNIT NO. 1 - EXEMPTION FROM THE REQUIREMENTS  
OF 10 CFR PART 50, APPENDIX R, SECTION III.G.2 (TAC NO. MB0300)

Dear Mr. Stall:

The Commission has approved the enclosed exemption from specific requirements of Title 10 of the *Code of Federal Regulations* Part 50, Appendix R, Section III.G.2.d, for the St. Lucie Plant, Unit No. 1. This action is in response to your letter of October 4, 2000, as supplemented by letters dated June 28, 2001, November 29, 2001, May 15, 2002, and October 22, 2002. This exemption revises the previous exemption issued February 21, 1985, as revised March 5, 1987, regarding cable separation inside containment.

A copy of the exemption has been forwarded to the Office of the Federal Register for publication.

Sincerely,

*/RA/*

Brendan T. Moroney, Project Manager, Section 2  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-335

Enclosure: Exemption

cc w/encl: See next page

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
FLORIDA POWER AND LIGHT COMPANY  
ST. LUCIE PLANT, UNIT NO. 1  
DOCKET NO. 50-335  
EXEMPTION

1.0 BACKGROUND

The Florida Power and Light Company (FPL, the licensee) is the holder of Facility Operating License No. DPR-67, which authorizes operation of the St. Lucie Plant, Unit No. 1. The license provides, among other things, that the facility is subject to all rules, regulations, and orders of the U.S. Nuclear Regulatory Commission (NRC, the Commission) now or hereafter in effect.

The facility consists of a pressurized water reactor located in St. Lucie County, Florida.

2.0 REQUEST/ACTION

Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Appendix R, Section III.G.2.d specifies separation of cables and equipment and associated nonsafety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustibles or fire hazards as one means of providing adequate fire protection for redundant trains of safe-shutdown equipment located inside noninerted containments.

On February 21, 1985, the NRC approved an exemption from Appendix R to allow redundant trains in the St. Lucie Unit 1 containment to have less than 20 feet horizontal separation. On March 5, 1987, the NRC approved a revision to this exemption to allow minimal intermittent combustibles between the redundant trains. The staff approved the exemptions

based, in part, on the redundant trains being separated by more than 7 feet horizontally and 25 feet vertically. The licensee subsequently determined that the assumption of 25 feet vertical separation was incorrect. The proposed action resubmits the exemption request and provides a detailed fire model to demonstrate that, with the existing vertical separation and a minimum of 7 feet horizontal separation, a fire in one train will not damage the redundant train. The revised request limits the exemption to the cable trays in the containment annular region between radial column lines 2 and 6 with the following assumptions:

- (1) redundant trays are at least 7 feet apart with no intervening combustibles
- (2) electrical cabinets near the redundant trains are enclosed with no ventilation openings
- (3) cables crossing redundant trays are in conduit and protected
- (4) the bottom tray in each stack of cable trays is fully enclosed by a noncombustible cover
- (5) vertical cable trays have noncombustible covers
- (6) existing cables are covered with fire retardant coating
- (7) new cables added will be IEEE 383 qualified and limited in number by the fire analysis.

In summary, the exemption would be revised to allow separation of cables of redundant trains by a horizontal distance of at least 7 feet with no intervening combustibles inside containment in the annular region between radial column lines 2 and 6.

### 3.0 DISCUSSION

Pursuant to 10 CFR 50.12, the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of 10 CFR Part 50, when (1) the exemptions are authorized by law, will not present an undue risk to public health or safety, and are consistent with the common defense and security, and (2) special circumstances are present. These include the special circumstance that application of the regulation is not necessary to achieve the underlying purpose of the rule. The underlying

purpose of the rule is to limit fire damage so that one train of systems necessary to achieve and maintain hot shutdown conditions remains free of fire damage.

The staff examined the licensee's rationale to support the revised exemption request and concluded that granting the exemption to allow less than 20 feet horizontal separation between redundant cable trays would meet the underlying purpose of 10 CFR Part 50. The licensee provided a detailed fire model that postulates a self-initiated cable fire, spreading horizontally and vertically in one stack of cable trays until the original combustible material (i.e., cable jacket insulation) is completely consumed. Based on the maximum postulated fire, a maximum radiant heat flux and the heat flux imposed on the redundant cable trays can be calculated to see if ignition of the redundant cables is possible. The model demonstrates that the resulting heat flux from the largest postulated exposure fire is less than half the heat flux needed to ignite the redundant cable trays. There was a degree of conservatism throughout the correlations and, therefore, a larger safety factor probably exists.

Based upon a consideration of the licensee's fire model, which indicates that, with a minimum of 7 feet horizontal separation, a cable fire in one train is highly unlikely to damage cables in the redundant train, the staff concludes that application of the regulation is not necessary to achieve the underlying purpose of the rule.

Therefore, the staff concludes that pursuant to 10 CFR 50.12(a)(2)(ii) special circumstances are present and that an exemption may be granted to allow less than 20 feet horizontal separation between redundant trains.

#### 4.0 CONCLUSION

Accordingly, the Commission has determined that, pursuant to 10 CFR 50.12(a), the exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security. Also, special circumstances are

present. Therefore, the Commission hereby grants FPL an exemption from the requirements of 10 CFR Part 50, Appendix G, Section II.G.2.d for St. Lucie Unit No. 1.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of this exemption will not have a significant effect on the quality of the human environment (68 FR 69728).

This exemption is effective upon issuance.

Dated at Rockville, Maryland, this 24<sup>th</sup> day of December 2003.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Ledyard B. Marsh, Director  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Mr. J. A. Stall  
Florida Power and Light Company

**ST. LUCIE PLANT**

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