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

FPL

October 15, 2003

L-2003-264
10 CFR 50.4
10 CFR 50.55a

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

Re: St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
Inservice Inspection Plans
Relief Request 25 and Unit 2 Relief Request 4

Pursuant to 10 CFR 50.55a (a)(3)(ii) Florida Power and Light Company (FPL) requests approval of Unit 1 Relief Request (R/R) 25 and Unit 2 Relief Request 4, Alternative Visual Examination of Inaccessible Insulated Components During System Pressure Tests. Unit 1 R/R 25 and Unit 2 R/R 4 propose alternatives to direct visual examination of the reactor vessel bottom area and some segments of Class 1 and Class 2 reactor coolant system (RCS) support piping. The affected RCS support piping passes through trenches that are covered and secured during normal operation and during ASME Section XI system leak tests performed each refueling outage at normal system operating pressure and temperature (NOP/NOT). The reactor vessel bottom is not readily accessible during the RCS NOP/NOT system leak test. FPL proposes to perform the visual examinations at alternative plant conditions and at an alternative frequency. The St. Lucie reactor vessels do not have any bottom mounted instrumentation (BMI).

Approval of Unit 1 Relief Request 25 is requested by March 29, 2004, to support its use during the upcoming Unit 1 refueling outage scheduled for the spring of 2004. The NRC notified the plant of potential need for these relief requests in July 2003. Please contact George Madden at 772-467-7155 if there are any questions about this submittal.

Very truly yours,

William Jefferson, Jr.
Vice President
St. Lucie Plant

WJ/GRM

A047

St. Lucie Unit 1
Third Inspection Interval
Relief Request Number 25

Alternative Visual Examination of Inaccessible Insulated Components During System Pressure Tests

1. ASME Code Component(s) Affected

St. Lucie Unit 1 Reactor Vessel and associated Class 1 and Class 2 piping in covered trenches rendered inaccessible due to containment building configuration.

2. Applicable Code Edition and Addenda

Rules for Inservice Inspection of Nuclear Power Plant Components, Section XI, 1989 Edition, No Addenda

3. Applicable Code Requirement

Article IWA-5000, System Pressure Tests, Paragraph IWA-5242, Insulated Components, describes the requirements for conducting the visual examination VT-2 of insulated components.

4. Reason for Request

Pursuant to the provisions of 10 CFR 50.55a(a)(3)(ii), FPL requests approval to perform the examination of the reactor vessel bottom head area and piping in covered trenches at different plant conditions than those required by the ASME Code. IWA-5242(a) states in part, that visual examination VT-2 may be conducted without the removal of insulation by examining "the accessible and exposed surfaces and joints of the insulation." IWA-5242(b) provides further instruction, "When examining insulated components, the examination of surrounding area (including floor areas or equipment surfaces located underneath the components) for evidence of leakage, or other areas to which leakage may be channeled, shall be required."

St. Lucie Plant does not have access for a direct visual examination of the reactor vessel bottom area during the ASME Section XI System Leakage Test visual examination VT-2 walkdown. There are three possible pathways that lead to the area. Two are in the electrical tunnel at the bottom of the containment "keyway" and are blocked by the Reactor Cavity Relief Dampers (Blast Dampers). These dampers consist of horizontal louvers approximately 11 inches wide, and normally remain in the closed position. They are not intended for human passage. The third pathway is through the reactor cavity sump, a small tunnel from the cavity to the weir pit. A cooling duct runs through this tunnel limiting the height to a crawl space approximately a foot high and six to eight feet long. Ambient conditions during VT-2

examinations at normal operating conditions create an extreme heat stress environment and, combined with a nearly impossible exit pathway, make examination of this area an excessively hazardous work situation. For these reasons, St. Lucie VT-2 inspectors have considered the reactor bottom area to be not accessible for examination. The increase in the level of quality and safety gained by performing a visual inspection at normal operating conditions does not compensate for the safety hazard the inspector would be subjected to.

Some segments of Class 1 and Class 2 reactor support piping pass through trenches that are covered and secured during normal operation. These trenches are required to be covered and secured prior to entering Mode 4 following a shutdown to ensure containment sump recirculation flowpaths are maintained. This is outlined in the St. Lucie response to NRC Bulletin 2003-01 (FPL Letter L-2003-201). The trench covers prohibit direct examination of horizontal insulation joints and low points as directed by IWA-5242(a). However, due to gaps and handholes in the trench covers and the use of grating in some locations, surrounding areas can be observed for evidence of leakage. Areas to which leakage may be channeled are also open in many locations throughout the containment for observation during the System Leakage Test. This is in compliance with the requirements of IWA-5242(b).

5. Proposed Alternative and Basis for Use

Proposed Alternative

As an alternative to the requirements of IWA-5242, at least once each period during refueling FPL will open the inaccessible areas and perform a VT-2 examination of the reactor vessel bottom and other associated piping following plant cooldown and depressurization. This inspection will check insulation surfaces for signs of leakage or residue. Any evidence of leakage will be evaluated in accordance with IWA-5250, which may include additional inspections and insulation removal as deemed necessary.

Basis for Use

The objective of the required visual examination at normal operating conditions is to detect evidence of leakage and thereby verify the integrity of the RCS pressure boundary. FPL believes the same evidence of leakage can be identified by visual examination following cooldown for refueling. The St. Lucie reactors have no bottom head penetrations, and have been volumetrically examined in accordance with the rules of Section XI with no relevant indications identified. There is no expectation of leakage due to the solid configuration of the bottom. The reactor cavity is monitored for leakage continuously during operation, and inventory balance is performed daily throughout operating cycle. Therefore, FPL concludes that the proposed alternative provides reasonable assurance of system integrity and an acceptable level of quality and safety comparable to an exam performed at normal operating conditions.

6. Duration of Proposed Alternative

The proposed alternative will be implemented for the remainder of the Third Inspection Interval.

7. Precedents

Fort Calhoun Station Request for Relief RR-8 (TAC NO. MB8717), SER dated September 12, 2003.

St. Lucie Unit 2
Third Inspection Interval
Relief Request Number 4

Alternative Visual Examination of Inaccessible Insulated Components During System Pressure Tests

1. **ASME Code Component(s) Affected**

   St. Lucie Unit 2 Reactor Vessel and associated Class 1 and Class 2 piping in covered trenches rendered inaccessible due to Containment Building configuration.

2. **Applicable Code Edition and Addenda**

   Rules for Inservice Inspection of Nuclear Power Plant Components, Section XI, 1998 Edition through 2000 Addenda

3. **Applicable Code Requirement**

   Article IWA-5000, System Pressure Tests, Paragraph IWA-5242, Insulated Components, describes the requirements for conducting the visual examination VT-2 of insulated components.

4. **Reason for Request**

   Pursuant to the provisions of 10 CFR 50.55a(a)(3)(ii), FPL requests approval to perform the examination of the reactor vessel bottom head area and piping in covered trenches at different plant conditions than those required by the ASME Code. IWA-5242(a) states, in part, that visual examination VT-2 may be conducted without the removal of insulation by examining "the accessible and exposed surfaces and joints of the insulation." IWA-5242(b) provides further instruction, "When examining insulated components, the examination of surrounding area (including floor areas or equipment surfaces located underneath the components) for evidence of leakage, or other areas to which leakage may be channeled, shall be required."

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VT-2 examinations at normal operating conditions create an extreme heat stress environment and, combined with a nearly impossible exit pathway, make examination of this area an excessively hazardous work situation. For these reasons, St. Lucie VT-2 inspectors have considered the reactor bottom area to be not accessible for examination. The increase in the level of quality and safety gained by performing a visual inspection at normal operating conditions does not compensate for the safety hazard the inspector would be subjected to.

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