January 8, 2002

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: EVALUATION OF RELIEF REQUEST VR-23 TO INCORPORATE CODE CASE OMN-2 INTO THE THIRD 10-YEAR INSERVICE TESTING PROGRAMS FOR ST. LUCIE NUCLEAR PLANT, UNITS 1 AND 2
(TAC NOS. MB3240 AND MB3241)

Dear Mr.Stall:

By letter dated October 15, 2001, Florida Power and Light Company (FPL) submitted Relief Request VR-23 for authorization to use an alternative to the requirements of American Society of Mechanical Engineers (ASME)/American National Standards Institute OM-1987, Part 1, "Requirements for Inservice Performance Testing of Nuclear Power Plant Pressure Relief Devices," Paragraph 3.3, for periodic testing of ASME Code Class 2 and 3 relief valves. FPL proposes to implement the provisions of Code Case OMN-2, "Thermal Relief Valve Code Case, OM Code-1995, Appendix I," which allows either testing or replacement of certain relief valves every 10 years.

The U.S. Nuclear Regulatory Commission staff has reviewed the proposed alternative, described in Relief Request VR-23, and the enclosed safety evaluation provides the results of the review. The relief request has been determined to provide an acceptable level of quality and safety, and may be authorized for the third 10-year interval of the Inservice Test Program for pumps and valves pursuant to 10 CFR 50.55a(a)(3)(i).

However, the U.S. Nuclear Regulatory Commission (NRC) is evaluating Code Case OMN-2 for possible endorsement through rulemaking or in a regulatory guide. Relief Request VR-23 is approved, as stated above, until such time as the NRC staff's generic position on OMN-2 is issued. At that time, if FPL intends to continue to implement this relief request, it must follow the provisions of OMN-2 with any limitations or conditions specified in the NRC staff endorsement.

Sincerely,
/RA/
Richard P. Correia, Chief, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-335 and 50-389

Enclosure: Safety Evaluation

cc: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

INSERVICE TESTING PROGRAM RELIEF REQUEST VR-23

FLORIDA POWER AND LIGHT COMPANY, ET AL.

ST. LUCIE PLANT, UNITS 1 AND 2

DOCKET NOS. 50-335 AND 50-389

1.0 INTRODUCTION

By letter dated October 15, 2001, Florida Power and Light Company, et al. (FPL, the licensee), submitted Relief Request VR-23 for authorization to use an alternative to the requirements of ASME/American National Standards Institute OM-1987, Part 1 (OM-1), "Requirements for Inservice Performance Testing of Nuclear Power Plant Pressure Relief Devices," Paragraph 3.3, for periodic testing of American Society of Mechanical Engineers (ASME) Code Class 2 and 3 relief valves. The licensee proposes to implement the provisions of Code Case OMN-2, "Thermal Relief Valve Code Case, OM Code-1995, Appendix I," in the third 10-year inservice testing programs for St. Lucie Units 1 and 2.

2.0 BACKGROUND

Title 10 of the *Code of Federal Regulations*, 50.55a (10 CFR 50.55a) requires that inservice testing of certain ASME Code Class 1, 2, and 3 pumps and valves be performed in accordance with Section XI of the ASME *Boiler and Pressure Vessel Code* (the Code), except where alternatives have been authorized or relief has been requested by the licensee and granted by the Commission pursuant to paragraphs (a)(3)(i), (a)(3)(ii), or (f)(6)(i) of 10 CFR 50.55a. In proposing alternatives or requesting relief, the licensee must demonstrate that: (1) the proposed alternatives provide an acceptable level of quality and safety; (2) compliance with the requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety; or (3) conformance with the requirements is impractical for its facility. Section 50.55a authorizes the Commission to authorize alternatives and to grant relief from ASME Code requirements upon making the necessary findings. Nuclear Regulatory Commission (NRC) guidance contained in Generic Letter (GL) 89-04, "Guidance on Developing Acceptable Inservice Testing Programs," provides alternatives to the Code requirements which the staff finds acceptable. Further guidance is given in GL 89-04, Supplement 1, and NUREG-1482, "Guidelines for Inservice Testing at Nuclear Power Plants."

The licensee requests relief from the ASME Code Class 2 and 3 pressure relief valve test frequency requirements of OM-1, "Requirements for Inservice Performance Testing of Nuclear Power Plant Pressure Relief Devices," Paragraph 3.3. The licensee proposes to implement Code Case OMN-2, "Thermal Relief Valve Code Case, OM Code-1995, Appendix I," which allows either testing or replacement of certain relief valves every 10 years.

2.1 Licensee's Basis for Requesting Relief

The licensee states:

As found bench testing of Class 2 and 3 pressure relief valves used in thermal applications present an undue administrative burden to FPL without a commensurate gain in safety. FPL presently schedules valve tests on a sample basis per the OM-1987 Part 1 requirements. In the event of a failure, a sample expansion of additional valves, from the same group, are selected for testing. This approach creates scheduling difficulties in finding appropriate "windows" of opportunity to test expanded samples without incurring additional system unavailability. FPL is also forced to revise the scope of planned system outages to include contingent valve tests due to sample expansions. In many cases, additional non-required tests are performed on contingency valves in advance of a required valve test during unit outages. This is necessitated by the need to lessen the potential outage impact for testing additional valves after maintenance window for that system has been completed.

With regard to acceptability of the Code Case OMN-2, the Code Committee performed review of the Nuclear Plant Reliability Database System (NPRDS) database to assess the quality and type of thermal relief valve failures. The Code Committee determined that the failure rates of the thermal relief valves are limited. The Code Committee determined that the low number of failure rates support the 10-year test or replacement frequency, and the elimination of sample expansion if the failure was discovered during testing.

2.2 Alternative Testing

The licensee proposes:

As an alternative, FPL will adopt Code Case OMN-2 of the 1995 OM Code, Appendix I which states, "that in lieu of the requirements specified in ASME OM Code-1995, paragraphs I 1.3.5(a), (b), and (c) testing for Class 2 and Class 3 pressure relief devices whose only over pressure protection function is to protect isolated components from fluid expansion caused by changes in fluid temperature shall be performed once every 10 years on each device unless performance data indicates that more frequent testing is needed to assure device function. In lieu of test, the owner may replace these devices every 10 years unless performance data indicates more frequent replacement is needed to assure device function.

3.0 EVALUATION

The 1989 Edition of the ASME Code Section XI specifies that valve testing shall be performed in accordance with OM-10. OM-10, Paragraph 1.1, requires pressure relief devices that provide over pressure protection for systems which perform a required function in shutting down a reactor to the cold shutdown condition, maintaining the cold shutdown condition, or mitigating the consequences of an accident, to be included within the scope of the inservice testing (IST) program. OM-10, Paragraph 4.3.1, requires that safety and relief valve testing be conducted in accordance with OM-1. The requirements for the test frequency of ASME Code Class 2 and 3 pressure relief devices are included in Paragraph 1.3.4.1 of OM-1.

In lieu of the provisions of OM-1, the licensee has proposed to implement the provisions of Code Case OMN-2, "Thermal Relief Valve Code Case, OM Code-1995, Appendix I." Thermal relief valves are defined in the Code Case as relief valves whose only over pressure protection function is to protect isolated components from fluid expansion caused by changes in fluid temperature. Code Case OMN-2 states that relief valves that are considered to be thermal relief valves shall be tested or replaced once every 10 years unless performance data indicates more frequent testing or replacement is needed to assure device function. Paragraph 1.3.5(a) of Appendix I, ASME OM Code-1995 specifies that each Class 2 and 3 relief valve be tested every 10 years with a minimum of 20 percent of the valves tested within a 48-month period which have not been tested. Paragraph 1.3.5(b) specifies requirements for replacing valves with pretested valves. Paragraph 1.3.5(c) establishes provisions for test acceptance criteria and provisions for testing additional valves.

Code Case OMN-2 was intended to be used at facilities where their IST program was developed in accordance with ASME OM Code-1995. It was not specifically prepared for use with the licensee's current Code of record (1989 ASME Code, Section XI). The Code Case was published in the 1998 addenda of the ASME OM Code.

Two issues need to be addressed in order to authorize the alternative: (1) the acceptability of the Code Case OMN-2 on its own merits; and (2) the applicability of the Code Case to be used in lieu of the provisions of OM-1 that are applicable to FPL.

With regard to acceptability of the Code Case OMN-2, the staff reviewed activities of the Code Committee related to the development of this Code Case. In making their determination to reduce the testing requirements for thermal relief valves, the Code Committee performed a review of the NPRDS database to assess the quantity and type of thermal relief valve failures. The Code Committee determined that the failure rates of thermal relief valves are limited. The Code Committee concluded that the low number of failure rates support the 10-year test or replacement frequency, and the elimination of sample expansion if the failure was discovered during testing. The staff is not currently aware of any outstanding issues with the testing of thermal relief valves.

With regard to the acceptability of applying Code Case OMN-2 in lieu of the provisions of OM-1, the staff compared the requirements of OM-1 and OM Code-1995. Thermal relief valves are not separately defined in these documents, but fall within the provisions for Class 2 and 3 relief valves as described above. In comparing the two documents, the OM Code-1995, Appendix I, represents a relaxation of OM-1 in the following areas: (1) elimination of the specific testing schedule for relief valves in the first 10-year interval; and (2) elimination of the provisions for repair or replacement of all valves which exceed their stamp set pressure by 3 percent or greater. The remaining provisions between the two are technically identical.

In this plant specific application, the staff has evaluated the proposed testing requirements for relief valves identified as thermal reliefs. The evaluation did not identify any limitations or modifications necessary for the acceptability of the proposed testing requirements. Thermal relief valves are not defined in either OM Code-1995, Appendix I nor OM-1. No related requirements have been identified in either OM Code-1995 or OM-1 that would be related to thermal relief valves. Therefore, there does not appear to be any conflict in applying the provisions for thermal relief valve testing or replacement in Code Case OMN-2 to OM-1. The

proposed testing requirements provide a reasonable method for ensuring the operational readiness of thermal relief valves. On this basis, the staff finds that the licensee's alternative provides an acceptable level of quality and safety.

However, NRC is evaluating Code Case OMN-2 for possible endorsement through rulemaking or in a regulatory guide. Relief Request VR-23 is authorized, as stated above, until such time as the NRC staff's generic position on OMN-2 is issued. At that time, if the licensee intends to continue to implement this alternative, the licensee is to follow the provisions of OMN-2 with any limitations or conditions specified in the NRC staff endorsement.

4.0 CONCLUSION

The proposed alternative to use the provisions of Code Case OMN-2 in lieu of the requirements of OM-1 Paragraphs 1.3.4.1(a) through 1.3.4.1(c), for testing or replacement of ASME Code Class 2 and 3 thermal relief valves is authorized for the third 10-year interval of the IST program for pumps and valves pursuant to 10 CFR 50.55a(a)(3)(i) based on the alternative providing an acceptable level of quality and safety.

Relief Request VR-23 is authorized until such time as the NRC staff's generic position on OMN-2 is issued. At that time, if the licensee intends to continue to implement this alternative, the licensee is to follow the provisions of OMN-2 with any limitations or conditions specified in the NRC staff endorsement.

Principal Contributor: Y. S. Huang, NRR

Date: January 8, 2002

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