March 11, 2004

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: CLOSEOUT OF RESPONSES TO GENERIC LETTER 96-06 CONCERNING WATERHAMMER AND TWO-PHASE FLOW FOR ST. LUCIE, UNITS 1 AND 2 (TAC NOS. M96870 AND M96871)

Dear Mr. Stall:

Through Generic Letter (GL) 96-06, "Assurance of Equipment Operability and Containment Integrity During Design-Basis Accident Conditions," dated September 30, 1996, the United States Nuclear Regulatory Commission (NRC) requested that all licensees evaluate their cooling water systems that serve containment air coolers to assure that they are not vulnerable to waterhammer and two-phase flow conditions. The initial responses for St. Lucie, Units 1 and 2 were provided by Florida Power & Light Company (FPL, the licensee) in letters dated October 28, 1996, and January 28, 1997. Additional information was provided in letters dated April 22, 1997, and October 30, 1998.

In a letter dated March 27, 2000, the NRC approved FPL's resolution of the GL 96-06 issues of two-phase flow and thermally-induced pressurization of piping runs penetrating the containment of St. Lucie, Units 1 and 2. Resolution of the waterhammer issue was deferred pending completion of an industry initiative in which FPL was participating.

Subsequent to issuance of GL 96-06, the Electric Power Research Institute (EPRI) developed an analytical methodology for evaluating the GL 96-06 waterhammer issue that was documented in EPRI Technical Reports 1003098 and 1006456. This was approved by the NRC in an evaluation dated April 3, 2002 (included as an Appendix to the EPRI Technical Reports). Section 3.3 of the staff's safety evaluation requested that licensees who chose to use the EPRI methodology provide additional information to confirm that the EPRI methodology was properly applied and that plant-specific risk considerations were consistent with the EPRI risk perspective; to justify any proposed exceptions to the EPRI methodology; and to provide any additional information required to address the GL 96-06 two-phase flow issue.

In its letter dated October 30, 1998, FPL had indicated it would participate in the EPRI initiative as means of achieving long-term resolution of the waterhammer issue. The licensee's submittals dated July 29, 2002, and March 13, 2003, provided the information that was required by Section 3.3 of the NRC staff's safety evaluation. However, the licensee's waterhammer analysis included use of the Sargent and Lundy HYTRAN computer code and while the licensee's analysis appeared to be conservative, use of the HYTRAN code has not been reviewed and approved by the NRC. Therefore, in order to resolve concerns associated with

use of the HYTRAN computer code, the licensee was asked to provide additional clarification and to demonstrate that the EPRI methodology was properly applied by using methods that do not require NRC review and approval.

The licensee was also requested to provide additional information concerning maximum waterhammer loads, as well as structural analysis and component failure considerations. This additional information was provided in a letter dated September 29, 2003.

Based on its review of the information provided, the NRC staff is satisfied with FPL's evaluation of the GL 96-06 waterhammer issue. The licensee has provided sufficient confirmation that the EPRI methodology was properly applied and that plant-specific risk considerations are consistent with the EPRI risk perspective; and no exceptions to the EPRI methodology were proposed. In order to resolve plant-specific issues that were identified, the licensee has moved the component cooling water (CCW) pump motors for both units to an earlier emergency diesel generator loading block to establish water pressure and flow to the containment fan coolers sooner, in order to minimize the amount of boiling and steam formation that will occur. The licensee plans to complete piping and structural support modifications during the SL1-19 and SL2-15 refueling outages for Units 1 and 2, respectively. The licensee has also established a commitment to submit the results of the final CCW piping and support design analyses and the final design information for the containment cooler structural analysis (i.e., updated responses to Questions 6 and 7 of the September 29, 3003, submittal) within 30 days after Unit 1 is returned to power following the SL1-19 Refueling Outage. The licensee is also requested to submit confirmation that all remaining GL 96-06 modifications have been completed, along with a summary description of the modifications, within 30 days after Units 1 and 2 are returned to power following the SL1-19 and SL2-15 Refueling Outages, respectively.

If you have questions regarding this matter, please contact me at 301-415-3974.

Sincerely,

/RA/

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

Docket Nos. 50-335 and 50-389

cc: See next page

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ST. LUCIE PLANT, UNITS 1 & 2

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