



February 9, 2009

L-2009-034  
10 CFR 50.4

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

Re: St. Lucie Unit 1  
Docket No. 50-335  
Ninety-Day Post-Outage Supplemental Response to NRC Generic Letter 2008-01  
(following the Unit 1 Fall 2008 Refueling Outage), "Managing Gas Accumulation in  
Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems"

References:

1. NRC Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems" dated January 11, 2008.
2. FPL Letter L-2008-070, Three-Month Response to NRC Generic Letter 2008-01 "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems."
3. FPL Letter L-2008-221, Nine-Month Response to NRC Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems."
4. St. Lucie Units 1 and 2 – Re: Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems" Proposed Alternative Course of Action, dated September 24, 2008.

The Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 2008-01 (Reference 1) to request that each licensee evaluate the licensing basis, design, testing, and corrective action programs for the emergency core cooling systems (ECCS), decay heat removal (DHR) system, and containment spray system, to ensure that gas accumulation is maintained less than the amount that challenges operability of these systems, and that appropriate action is taken when conditions adverse to quality are identified.

As requested in Reference 4, Florida Power & Light (FPL) is providing a supplemental response to the nine month response letter (Reference 3). This supplemental response is being submitted within 90 days of startup from the Unit 1 fall 2008 SL1-22 refueling outage in which the deferred actions were completed.

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In summary, FPL has concluded that the subject systems and functions at St. Lucie are operable and that St. Lucie is currently in compliance with the licensing basis documentation and applicable regulations, including 10 CFR 50 Appendix B, Criteria III, V, XI, XVI, and XVII, with respect to the concerns outlined in GL 2008-01.

There are no revisions to regulatory commitments previously made by FPL for St. Lucie in this letter, and this letter does not contain any new NRC commitments.

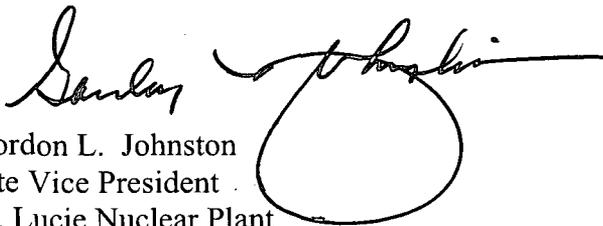
The attachment to this letter contains the FPL ninety-day post outage supplemental response to NRC GL 2008-01 for St. Lucie Unit 1.

Please contact Ken Frehafer at (772) 467-7748 if you have further questions regarding this matter.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on February 9, 2009.

Very truly yours,

  
Gordon L. Johnston  
Site Vice President  
St. Lucie Nuclear Plant

GLJ/KWF

Attachment

**St. Lucie Unit 1 Ninety-Day Post-Outage Supplemental Response to NRC Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems"**

This attachment provides the ninety-day supplemental (post-outage) response to Generic Letter (GL) 2008-01 for Unit 1 actions that were deferred until the next St. Lucie Unit 1 refueling outage.

The following information is provided in this attachment:

- a) A description of the results of evaluations that were performed pursuant for Generic Letter 2008-01 on the previously incompletd activities, such as system piping walkdowns and ultrasonic testing, at St. Lucie Unit 1 (see Section A of this attachment).
- b) A description of any additional commitments determined necessary to assure compliance with the quality assurance criteria in Sections III, V, XI, XVI, and XVII of Appendix B to CFR Part 50 and the licensing basis and operating license with respect to the subject systems, including a schedule and a basis for that schedule (see Section B1 of this attachment).

The original conclusions documented in the nine-month response with respect to the licensing basis evaluation, testing evaluation, and corrective action evaluations have not changed. This supplement will only discuss the results of design evaluation reviews conducted during the recent St. Lucie Unit 1 refueling outage associated with walkdowns of previously uncompleted activities.

## **A. EVALUATION RESULTS**

### **1. Design Basis Documents**

The Engineering Evaluation has been revised primarily to document the results of the walkdowns, maximum void size calculations, ultrasonic testing (UT) inspections, and vent valve installations in the St. Lucie Unit 1 accessible and inaccessible piping. The results are summarized in sections A.2 and A.3 below. No significant changes were made to the design basis section of the evaluation.

### **2. Confirmatory Walkdowns**

As stated in Reference 3, the purpose of the system walkdowns was to determine the true system high and low points for each horizontal run of piping in the subject systems (confirming the drawing reviews), determine the piping segment slopes, and identify locations where UT might be conducted to monitor void size. Potential vent valve locations are also developed from the walkdown reviews.

For Unit 1, the drawing reviews, walkdowns, laser scanning, and UT inspections have been completed for both the accessible and inaccessible area piping.

#### **2.1. Walkdown Results**

Walkdowns of the accessible and inaccessible area piping of Unit 1 have been completed using laser scanning to determine pipe segment elevations. Markups of isometric drawings showing elevations and unvented high point locations were produced.

Evaluation of walkdown information indicated that the as-built piping isometrics accurately depict piping layout and support locations for the subject piping scope. As expected, small local highpoints were identified within piping sections designed to be installed horizontally at a single elevation.

#### **2.2. UT Results**

##### *Unit 1 Accessible Piping*

UT inspections for St. Lucie Unit 1 accessible piping at unvented high points are complete. The table below shows the results of the inspections.

**St. Lucie Unit 1 UT Results - Accessible Piping**

		Suction Side				Discharge Side			
		UT	UT	Gas		UT	UT	Gas	
		Locations	Complete	Found	CR	Locations	Complete	Found	CR
<b>ECCS</b>	8 <sup>1</sup>	8		2	2008-32072 2008-32077	13	13	0	-
<b>SDC</b>	7	7		0	-	0	0	0	-
<b>CS</b>	3	3		0	-	5	5	1	2008-32074

Three gas voids were identified; two suction side voids and one discharge side void. The voids were within the acceptance criteria of the standardized Prompt Operability Determinations (POD)<sup>2</sup> except for one suction side void (additional engineering analysis beyond that contained in the POD determined that the system remained operable with this gas void). All three instances were tracked in the Corrective Action Program (CAP).

<sup>1</sup> In the St. Lucie nine-month submittal (Reference 3), 16 locations were identified for UT monitoring in St. Lucie Unit 1 accessible areas. Eight of those locations were check valve bonnets. It was subsequently determined that due to material and configuration issues, UT of these locations would not yield conclusive results. Four of the locations (ECCS combined suction check valves) have had vent valves installed. The other four locations are the HPSI/LPSI pump suction side swing check valves. FPL Engineering concludes that vent valve installation on these check valves is not warranted, because IST substantial flow and quarterly mini-flow testing demonstrates pump operability and indicates that post-fill & vent voids are not detrimental to pump health.

<sup>2</sup> FPL has implemented standardized PODs in accordance with the FPL nuclear fleet procedure for establishing the acceptability of continued operation for structures, systems or components that are suspected to be degraded, non-conforming, or in an unanalyzed condition. In concert with the existing technical specifications, the PODs will ensure that the potential effects of gas voiding are adequately addressed until a license amendment is processed. These PODs provide standardized acceptance criteria for gas voids in the suction and discharge piping of ECCS and CS systems. If the standardized acceptance criteria are exceeded, then a specific evaluation of the location in question is performed to determine operability. Until a Gas Void Management Program is implemented, any identified gas voids are documented in the St. Lucie Corrective Action Program (CAP).

*Unit 1 Inaccessible Piping*

UT inspections for St. Lucie Unit 1 inaccessible piping at unvented high points were performed during the SL1-22 outage. The table below shows the results of the inspections.

**St. Lucie Unit 1 UT Results - Inaccessible Piping**

		Suction Side				Discharge Side			
		UT Locations	UT Complete	Gas Found	CR	UT Locations	UT Complete	Gas Found	CR
<b>ECCS</b>		-	-	-	-	5	5	0	-
<b>SDC</b>		6	5	0	-	-	-	-	-

Of the 11 identified UT locations, one was determined not to be an unvented high point (and was still inspected), and one was unable to be inspected due to interference issues. This uninspected location was evaluated as acceptable because 1) a total of 10 other SDC suction line segments were inspected (with no voids found), and 2) the SDC initiation procedure was modified several years ago to alleviate gas collection issues and operating history has shown that the current process has been effective in addressing the effects of any potential gas voids. No gas voids were identified in any of the inspected locations.

*Post-Outage UT Inspections*

During the startup following Unit 1 refueling outage, UT inspections were again performed on the remaining accessible and inaccessible area unvented high points that are located in ECCS pathways and not pressurized. No gas voids were found in any of those locations.

**3. Vent Valves**

A total of 13 locations were selected for vent valve installation at St. Lucie Unit 1. 12 vent valves were installed on PSL1 accessible piping during the recently completed outage. The remaining valve has been scheduled for installation during the next Unit 1 outage. This location was UT inspected during plant startup at the end of the recently completed outage and was found to be water solid.

**4. Procedures**

No additional procedures or procedure changes have been identified subsequent to the St. Lucie Unit 1 and 2 Nine-Month Response Letter (Reference 3).

## **B. DESCRIPTION OF NECESSARY ADDITIONAL COMMITMENTS**

### **1. Additional Commitments/Corrective Actions**

No additional commitments or commitment changes have been identified subsequent to the St. Lucie Unit 1 and 2 Nine-Month Response Letter (Reference 3).

No additional corrective actions have been entered in the CAP to assure operability as a result of the activities being reported under this supplementary response.

### **2. Commitment/Corrective Action Updates**

Commitments 1 through 3 were provided in FPL Three-Month Response Letter L-2008-070 dated May 12, 2008 (Reference 2).

1. FPL will provide an initial GL 2008-01 submittal by October 14, 2008 that includes the evaluation results for the completed licensing and design basis reviews, the operating and test procedure reviews, and the Unit 2 readily accessible GL piping section walkdowns and design reviews as well as the schedule for any corrective actions that may be required based on these evaluations. FPL Letter L-2008-221 satisfied this commitment.
2. FPL will provide a complete Unit 1 GL 2008-01 submittal 90 days after the end of the fall 2008 refueling Outage. This submittal will complete the design evaluation review as well as provide the schedule and basis for any corrective actions that may be required based on the detailed readily accessible and inaccessible GL piping section walkdowns performed. This response letter satisfies this commitment.
3. FPL will provide a complete Unit 2 GL 2008-01 submittal 90 days after the end of the spring 2009 refueling Outage. This submittal will complete the design evaluation review as well as provide the schedule and basis for any corrective actions that may be required based on the detailed inaccessible GL piping section walkdowns performed during the Outage.

Commitments 4 and 5 were provided in FPL Nine-Month Response Letter L-2008-221 dated October 14, 2008 (Reference 3)

4. FPL is continuing to support the industry and NEI Gas Accumulation Management Team activities regarding the resolution of generic TS changes via the Technical Specification Task Force (TSTF) traveler process. FPL will evaluate the resolution of TS issues with respect to the changes contained in the TSTF traveler following NRC approval and the Consolidated Line Item Improvement Process (CLIIP) Notice of Availability of the TSTF traveler in the Federal Register. Based upon the results of the evaluation, an appropriate

license amendment request will be filed with the NRC within 180 days following NRC approval of the TSTF. The appropriate Bases changes associated with the potential Technical Specification will also be made.

5. FPL will develop a Gas Void Management Program by 12/15/2009 to support planned TS changes.

All of the corrective actions described in the St. Lucie Nine-Month response to Generic Letter 2008-01 (Reference 3) are in the St. Lucie CAP. Each corrective action has been assigned as an Action Item (AI) within the CAP. As of February 15, 2009, all corrective actions are being worked in accordance with the priorities assigned by the CAP.

### **Conclusion**

FPL has evaluated the previously unevaluated portions of applicable system piping at St. Lucie Unit 1 that perform the functions described in Generic Letter 2008-01, and has concluded that the subject systems and functions at St. Lucie are operable and that St. Lucie is currently in compliance with the licensing basis documentation and applicable regulations, including 10 CFR 50 Appendix B, Criteria III, V, XI, XVI, and XVII, with respect to the concerns outlined in GL 2008-01.