



September 11, 2009

L-2009-206
10 CFR 50.54(f)
10 CFR 50.4

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
11555 Rockville Pike, Rockville, MD 20852

Re: St. Lucie Unit 2
Docket No. 50-389
Ninety-Day Supplemental Response to NRC Generic Letter 2008-01 (following the Unit 2 Spring 2009 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," dated May 12, 2008.
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," dated October 14, 2008.
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.
5. FPL Letter L-2009-034, Ninety-Day 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," dated February 9, 2009.
6. FPL Letter L-2009-142, Ninety-Day Supplemental Response to NRC Generic Letter 2008-01 (Unit 1 Charging System Walkdown), "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems," dated June 17, 2009.

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.

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As requested in Reference 1, Florida Power and Light (FPL) provided a nine-month response letter (Reference 3). As discussed in the nine-month response letter, this supplemental response is being submitted within 90 days of startup from the Unit 2 Spring 2009 outage in which the deferred actions were completed.

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.

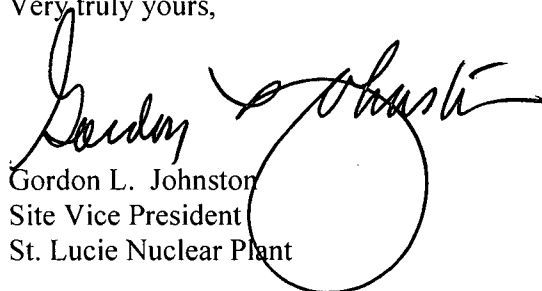
The attachment to this letter contains the FPL ninety-day supplemental (post-outage) response to GL 2008-01 for Unit 2 actions that were deferred until the next St. Lucie Unit 2 refueling outage.

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 September 11, 2009.

Very truly yours,


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

GLJ/KWF
Attachment:

St. Lucie Unit 2 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 2 actions that were deferred until the 2009 St. Lucie Unit 2 refueling outage.

The following information is provided in this attachment:

- a) A description of the results of evaluations that were performed pursuant for GL 2008-01 on the previously incomplete activities, such as system piping walkdowns and ultrasonic testing, at St. Lucie Unit 2 (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 B.1 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 2009 St. Lucie Unit 2 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 2 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 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 warranted to monitor for potential gas accumulation. Potential vent valve locations are also developed from the walkdown reviews.

For Unit 2, the drawing reviews, walkdowns, laser scanning, and UT inspections have been completed for both the accessible and inaccessible area piping. Similar to the process used for Unit 1, segments of piping which could not be inspected due to accessibility issues were documented and reviewed as part of the walkdown evaluation.

2.1. Walkdown Results

Walkdowns of the accessible and inaccessible area piping of Unit 2 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

UT inspections for St. Lucie Unit 2 at unvented high points are complete. Results of the original UT inspections for accessible piping conducted in the fall of 2008 were reported in Reference 3. At that time, two unvented high points located in the ECCS discharge piping were not UT inspected. These locations were inspected following the spring, 2009 outage. Results of these inspections are presented under *Post-Outage UT Inspections* following the discussion of Unit 2 inaccessible piping UT results.

Unit 2 Inaccessible Piping

UT inspections for St. Lucie Unit 2 inaccessible piping at unvented high points were performed at the beginning of the 2009 outage. These inspections were performed to determine “as found” conditions prior to initiation of shutdown cooling (SDC) to avoid the possibility of undetected gas voids being swept due to SDC flow through portions of the subject system piping. Since laser scanning walkdowns had not yet been performed, the UT locations were selected based on drawing reviews. The following table shows the results of the pre-outage inspections.

St. Lucie Unit 2 UT Results, Pre-outage - Inaccessible Piping

| | | Suction Side | | | | Discharge Side | | | |
|------|--|----------------|----------|-------|----|----------------|----------|-------|----|
| | | UT | UT | Gas | | UT | UT | Gas | |
| | | Locations | Complete | Found | CR | Locations | Complete | Found | CR |
| ECCS | | - | - | - | - | 4 | 4 | 0 | - |
| SDC | | 3 ¹ | 3 | 0 | - | - | - | - | - |

Seven locations (3 suction and 4 discharge) were ultrasonically tested during the plant cooldown prior to entry onto shutdown cooling. All monitored locations were found to be water solid. Based upon the results of laser scanning the locations of unvented high points were identified and reinspected during the startup following the Unit 2 post-outage startup.

Post-Outage UT Inspections

During the startup following the Unit 2 refueling outage, UT inspections were performed on the remaining accessible and inaccessible area unvented high points that are located in ECCS/CS pathways and not pressurized. Four gas voids were identified. All were on the discharge side. Three of the voids were within the acceptance criteria of the standardized prompt operability determinations (POD)². The fourth was not relevant, as system operability was not required at that time, and the UT monitoring was performed prior to execution of a system cooldown and flush that is intended to remove such gas voids. Following the cooldown/flush evolution, the location was UT inspected again and found to be water solid. All four instances of gas voids were tracked in the corrective actions program (CAP). The following table shows the results of the post-outage inspections.

¹ A total of 5 suction side locations were originally identified for UT inspection. Access was restricted at two of the locations and they were not inspected. Subsequent laser scan data from walkdowns confirmed that these two locations were not unvented high points.

² 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 accumulation management program is implemented, any identified gas voids are documented in the St. Lucie CAP.

St. Lucie Unit 2 UT Results, Spring 2009 - Accessible Piping

| | | Suction Side | | | | Discharge Side | | | |
|------|----|-----------------|----------------|--------------|----|-------------------|----------------|----------------|--------------------------|
| | | UT Locations | UT Complete | Gas Found | CR | UT Locations | UT Complete | Gas Found | CR |
| ECCS | | 7 | 7 | 0 | - | 29 ^{3,4} | 29 | 2 ⁵ | 2009-16918 2009-16233 |
| | CS | - | - | - | - | 3 | 3 | 1 | 2009-16224 |

St. Lucie Unit 2 UT Results, Post-outage - Inaccessible Piping

| | | Suction Side | | | | Discharge Side | | | |
|------|-----|-----------------|----------------|--------------|----|-----------------|----------------|--------------|------------|
| | | UT Locations | UT Complete | Gas Found | CR | UT Locations | UT Complete | Gas Found | CR |
| ECCS | | - | - | - | - | 9 | 9 | 1 | 2009-15858 |
| | SDC | 1 | 1 | 0 | - | - | - | - | - |

3. Vent Valves

A total of sixteen (16) locations were selected for vent valve installation at St. Lucie Unit 2. Fifteen (15) vent valves were installed on Unit 2 accessible piping during the recently completed outage. The remaining valve has been scheduled for installation during the next Unit 2 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).

³ Per Reference 3, line segment HB21 ("B" HPSI discharge to 2A2 RCS Loop) was not monitored during the fall 2008 UT inspections of unvented high points. HB21 was water solid when inspected following the 2009 spring outage.

⁴ Per Reference 3, line segment LB13 ("B" LPSI to the 2B2 RCS loop) was not monitored during the fall 2008 UT inspections of unvented high points. LB13 was water solid when inspected following the 2009 spring outage.

⁵ Gas voids were identified as part of the post-outage fill and vent verification process. One of these points (discussed in CR 2009-16918) was determined to be not relevant due to the timing of the UT inspection. Subsequent inspection showed the location to be water solid.

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 (Reference 3) satisfied this commitment.
2. FPL will provide a complete Unit 1 GL 2008-01 submittal 90 days after the end of the 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. FPL Letter L-2009-034 (Reference 5) and L-2009-142 (Reference 6) satisfied this commitment.
3. FPL will provide a complete Unit 2 GL 2008-01 submittal 90 days after the end of the 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. This response letter satisfies this commitment.

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 Accumulation Management Program by December 15, 2009, to support planned TS changes.

All of the corrective actions described in the St. Lucie nine-month response to GL 2008-01 (Reference 3) are controlled within the St. Lucie CAP. Each corrective action has been assigned an action item within the CAP. Corrective actions are being worked in accordance with the priorities assigned by the CAP in support of the above remaining NRC commitments.

Conclusion

FPL has evaluated the previously unevaluated portions of applicable system piping at St. Lucie Unit 2 that perform the functions described in GL 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.

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," dated May 12, 2008.
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," dated October 14, 2008.
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.
5. FPL Letter L-2009-034, Ninety-Day 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," dated February 9, 2009.
6. FPL Letter L-2009-142, Ninety-Day Supplemental Response to NRC Generic Letter 2008-01 (Unit 1 Charging System Walkdown), "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems," dated June 17, 2009.