

# CATEGORY 1

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FACIL: 50-335 St. Lucie Plant, Unit 1, Florida Power & Light Co.      05000335  
50-389 St. Lucie Plant, Unit 2, Florida Power & Light Co.      05000389  
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SUBJECT: Responds to NRC ltr re violations noted in insp repts  
50-335/97-09 & 50-389/97-09. Corrective actions: documented  
as-found condition of Unit 2 ECCS sump in condition rept &  
operability of Unit 1 ECCS sump was evaluated.

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September 4, 1997

L-97-216  
10 CFR §2.201

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

Re: St. Lucie Units 1 and 2  
Docket Nos. 50-335 and 50-389  
Reply to a Notice of Violation  
NRC Integrated Inspection Report 97-09

Florida Power and Light Company (FPL) has reviewed the subject Notice of Violation and, pursuant to 10 CFR §2.201, the responses to the violations are attached.

FPL appreciates the significance of these violations and has taken comprehensive corrective actions to address the failure to implement Emergency Core Cooling System (ECCS) sump design requirements at the time of St. Lucie Unit 2 construction, as well as the failure to identify and correct the non-conforming condition since initial licensing. Our commitment to conduct a graded Updated Final Safety Analysis Report (UFSAR) review for both St. Lucie Units 1 and 2, coupled with more effective field walkdowns by System Engineers and Quality Assurance personnel should ensure that UFSAR descriptions accurately describe the as-built condition of selected systems, structures, and components. Finally, we have taken procedural and programmatic actions to ensure that surveillances and generic issue reviews include a more specific verification of design parameters.

Please contact us with questions on the enclosed violation responses.

Very truly yours,

*Thomas F. Plunkett*  
Thomas. F. Plunkett  
President  
Nuclear Division

TFP/JAS/EJW

Attachment

110034

cc: Regional Administrator, USNRC, Region II  
Senior Resident Inspector, USNRC, St. Lucie Plant

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PDR ADDCK 05000335  
Q PDR



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Attachment  
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Violation A

10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality be performed in accordance with drawings appropriate to the circumstances.

Contrary to the above, as of May 18, 1997, the licensee failed to install containment Emergency Core Cooling System sumps for St. Lucie Unit 2 in accordance with the approved drawing in that the sump was not completely enclosed by a mesh screen as described on Drawing 2998-G-797, Sheet 13. Specifically, a vertical divider screen, which provided train separation for the sump filtration screen, contained gaps in excess of those specified in the drawing which permitted unfiltered exchange between the trains. Also, as of May 18, 1997, gaps were identified in horizontal screen sections in excess of that specified in the drawings and penetrations of the horizontal screen lacked the required "boots" which would prohibit the entry of unfiltered fluid through the annular space between penetrations and the screen. (01014)

This is a Severity Level IV violation. (Supplement I)

Response A

1. FPL concurs with the violation.
2. REASON FOR VIOLATION

The deficiencies associated with the ECCS sump divider screen were caused by a failure to properly implement the design requirements for the screen enclosure during initial system construction. Plant design drawing 2998-G-797, Sheet 13, specifies full closure of the vertical seams associated with the sump divider screen. An approximate 2 inch gap at the outboard end of the divider screen panel existed because the design detail to extend and connect the divider panel to the outside screen panel was not properly implemented during the original construction of the sump enclosure. The omission of a metal panel in the divider screen wall, and several other small gaps found in the sump screen enclosure were also a result of inattention to detail during original system construction.

The lack of required "boots" on piping penetrating the ECCS sump filtration screen was the result of inadequate configuration control during the restoration of the sump to design requirements following maintenance activities on the sump structure and within the sump. Contributing to the lack of configuration control for reinstalling the "boots" on the ECCS filtration sump screen was an inadequate sump closeout inspection as required by the Technical Specifications. The Technical Specification closeout inspection focused on

debris in, or degradation of, the ECCS sump, and did not include an inspection of the physical condition or integrity of the sump filtration screen structure and divider plate.

3. **CORRECTIVE STEPS TAKEN AND THE RESULTS ACHIEVED**

- A. FPL documented the as-found condition of the St. Lucie Unit 2 ECCS sump in a Condition Report. As an aspect of the resolution of the Condition Report, a MODE-hold was imposed pending the restoration of the ECCS sump to design configuration. Additionally, since St. Lucie Unit 1 was operating in MODE 1 at the time of the event, the OPERABILITY of the St. Lucie Unit 1 ECCS sump was evaluated and satisfactorily dispositioned in accordance with the St. Lucie Plant corrective action program.
- B. FPL performed a system walkdown, and a safety evaluation was written to document the design and licensing basis requirements for the Unit 2 ECCS sump screens. Based on the evaluation, additional descriptive design basis information developed in the evaluation will be added to the UFSAR.
- C. The discrepancies associated with the St. Lucie Unit 2 ECCS sump screen enclosure were corrected in accordance with Plant Change/Modification (PCM) 97-037M. The PCM included modifications to the ECCS sump screen necessary to restore the ECCS sump to a configuration meeting the intended design. Implementation of PCM 97-037M was completed prior to the Unit 2 startup following the cycle 10 refueling outage.
- D. To augment current surveillance instructions, additional procedural guidance was developed for performing ECCS sump inspections to provide specific requirements for inspecting for gaps in the sump screen as well as verifying the cleanliness of the sump area. The procedural guidance is intended to ensure that the physical condition of the sump screens continues to meet the design requirements. (Maintenance Surveillance Procedure MSP-68.01, "Containment Sump Inspection," and PSL Nuclear Assurance Quality Control Technique Sheet 10.54, "Unit 1 and Unit 2 Containment Sump Inspection")
- E. The St. Lucie Unit 1 ECCS sump debris screens will be inspected during the next outage in which St. Lucie Unit 1 enters Mode 5 for a sufficient duration. The inspection will include a detailed as-built verification of the screen configuration. (Plant Management Action Item (PMAI) PM97-06-177)

4. **CORRECTIVE STEPS TO AVOID FURTHER VIOLATIONS**

- A. As discussed in FPL letter L-97-180, dated July 11, 1997, FPL has committed to conduct a graded review of the St. Lucie Unit 1 and Unit 2 Final Safety Analysis Reports. FPL plans to prioritize this review according to risk significance (based on probabilistic safety assessment methods). Four priority levels have been established. The graded review will include walkdowns of the critical characteristics of systems, structures, and components.
  - B. FPL has implemented a guideline for System Engineer system walkdowns. These walkdowns are to be conducted on a periodic basis and include the use of system design drawings. (Systems and Component Engineering Department Guideline No. SCEG-019, "System Engineering System Walkdowns")
  - C. The Quality Assurance Department has instituted a periodic program of system audits and design verification walkdowns. These audits and walkdowns focus on safety-related and safety significant systems and include consideration of design drawings to field configurations and take into account operating experience information and topics of regulatory significance. (St. Lucie Quality Department Administrative Letter SLQD AL-7, "Safety System Walkdowns")
  - D. St. Lucie Plant has implemented enhanced work controls for work activities on the ECCS sump. These controls will ensure that maintenance activities which can affect the physical design configuration are properly controlled to ensure that the design is maintained. (St. Lucie Plant Administrative Procedure ADM-0010432, "Control of Plant Work Orders")
  - E. This event will be included in Operations, Maintenance, and Engineering Support Personnel continuing training with emphasis on the requirements for foreign material exclusion (FME) and configuration control.
5. Full compliance was achieved on May 22, 1997, upon implementation of PCM 97-037M which included modifications to the ECCS sump screens necessary to meet design requirements. This PCM was completed prior to the Unit 2 startup following the cycle 10 refueling outage.

Violation B

10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, are promptly identified and corrected.

Contrary to the above, as of May 18, 1997, the licensee failed to promptly identify and correct Unit 2 containment sump deficiencies related to vertical divider screen gaps, horizontal screen gaps, and penetration boot installation despite multiple opportunities during Technical Specification inspections of the sump and inspections associated with NRC Information Notice 89-77, "Debris in Containment Emergency Sump and Incorrect Screen Configurations," and Supplement 1 to this Information Notice. (02014)

This is a Severity Level IV violation. (Supplement I)

Response B

1. FPL concurs with the violation.
2. REASON FOR VIOLATION

The failure to promptly identify and correct the St. Lucie Unit 2 ECCS sump deficiencies related to vertical divider screen gaps, horizontal screen gaps, and penetration boot installation during Technical Specification inspections of the sump was the result of insufficient inspection acceptance criteria and guidance. Specifically, the surveillance requirements for performing the sump inspection did not require a detailed inspection of the sump screen enclosure for compliance with the Updated Final Safety Analysis Report (UFSAR) design requirements. Technical Specification Surveillance Requirement 4.5.2.e.2 requires a visual inspection of the ECCS sump to verify that subsystem suction inlets are not restricted by debris and that sump components show no evidence of structural distress or corrosion. This inspection is performed every 18 months. There were no specific plant requirements to inspect for gaps in the debris screens or to verify that the physical condition of the screen enclosure is sufficient to prevent bypassing the filtering function.

In February 1994, FPL performed an inspection and general configuration verification of the St. Lucie Unit 2 ECCS sump based on industry events documented in NRC Information Notice (IN) 89-77, Supplement 1 (December 3, 1993). The IN was issued to alert licensees of potential problems associated with debris found in containment emergency sumps and incorrect screen configurations. As a result of the inspection,

several sump screen configuration deficiencies were identified and subsequently corrected. However, the 1994 inspection primarily focused on damaged or missing components and obvious configuration inadequacies and did not include written inspection acceptance criteria for the inspector. The inspection scope did not provide for a detailed as-built verification of the complex ECCS sump design which could have identified the additional deficiencies described in this report. As a result, an opportunity for earlier detection of the ECCS sump screen deficiencies was missed.

3. CORRECTIVE STEPS TAKEN AND THE RESULTS ACHIEVED

- A. To augment current surveillance instructions, additional procedural guidance was developed for performing ECCS sump inspections to provide specific requirements and direction for inspecting for the ECCS sump screen as well as verifying the cleanliness of the sump area. The additional procedural guidance ensures that the physical condition of the sump screens meets the design requirements. (Maintenance Surveillance Procedure MSP-68.01, "Containment Sump Inspection") Additionally, the "Prestart Check-Off List" for both St. Lucie Units 1 and 2 (Normal Operating Procedures NOP-1/2-0030120) now require a walkdown of specific areas in-containment by two licensed senior operators in addition to documentation of the completion of MSP-68.01.
- B. The plant's Quality Control process was revised in 1995 to require written inspection and acceptance criteria for all activities which require Quality Control acceptance. (PSL Nuclear Assurance Quality Control Techniques Sheet 2.9, "Request for Inspection and Testing Services")

4. CORRECTIVE STEPS TO AVOID FURTHER VIOLATIONS

- A. This event will be incorporated in the Engineering Support Personnel (ESP) training program at St. Lucie to provide emphasis on the continuing need for effective assessment and disposition of lessons learned from industry experience such as that contained in NRC Information Notice 89-77.
- B. Operating Experience (OE) items which are determined to require review by St. Lucie Plant are now addressed using the St. Lucie Plant Condition Report process. Condition Reports are used to document the evaluation and corrective actions for such applicable OE items and provide a vehicle to assure that proper evaluations are completed and documented, and that corrective actions are properly captured and tracked to completion. The Condition Report process produces standardized responses to OE items, ensures timely and enhanced visibility of OE reviews, and establishes minimum standards for documentation,





review, and approval. (Plant Administrative Procedure ADM-17.03, "Operating Experience Feedback")

- C. Additionally, as stated in Corrective Step 3B, above, the Quality Control process was revised to require written inspection and acceptance criteria for all activities which require Quality Control acceptance.
  
- 5. Full compliance was achieved on July 18, 1997, with the issuance of the additional procedural guidance for performing ECCS sump inspections to provide specific requirements for inspecting the ECCS sump screen as well as verifying the cleanliness of the sump area, as discussed in paragraph 3.A, above.