



June 4, 2007

L-2007-028
10 CFR 50.90

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

RE: St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
Proposed License Amendments
Removal of Hydrogen Recombiners and Analyzers from Technical Specifications

In accordance with the provisions of Section 50.90 of Title 10 of the *Code of Federal Regulations* (10 CFR), Florida Power and Light (FPL) is submitting a request for an amendment to the renewed facility operating license for DPR-67 for St. Lucie Unit 1 and NPF-16 for St. Lucie Unit 2. The proposed amendment will delete the Technical Specification (TS) requirements related to hydrogen recombiners and hydrogen monitors. The proposed TS changes support implementation of the revisions to 10 CFR 50.44, "Standards for Combustible Gas Control System in Light-Water- Cooled Power Reactors," that became effective on September 16, 2003. The changes are consistent with Revision 1 of NRC-approved Industry/Technical Specification Task Force (TSTF) Standard Technical Specification Change Traveler, TSTF-447, "Elimination of Hydrogen Recombiners and Change to Hydrogen and Oxygen Monitors." The availability of this TS improvement was announced in the Federal Register on September 25, 2004 as part of the consolidated line item improvement process (CLIP).

Attachment 1 provides a description of the proposed change, the requested confirmation of applicability, and plant-specific verifications and commitments. Attachment 2 provides the existing TS pages marked-up to show the proposed change. Attachment 3 provides revised, clean TS pages. Attachment 4 provides information-only mark ups for the TS Bases.

The existing St. Lucie Units 1 and 2 hydrogen analyzers are maintained in accordance with the surveillance requirements in the existing TSs. FPL makes a commitment to maintain a hydrogen monitoring system capable of diagnosing beyond design-bases accident hydrogen concentrations by modifying and relocating the TS Hydrogen Analyzer requirements to the Updated Final Safety Analysis Report (UFSAR).

FPL requests that the proposed License Amendment be processed normally, with the amendment being implemented within 60 days of approval.

ADD
NR

In accordance with 10 CFR 50.91, a copy of this application, with attachments, is being provided to the designated Florida State Official.

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

Executed on the Fifteen day of June 2007.

If you should have any questions regarding this submittal, please contact Ken Frehafer at (772) 467-7748.

Sincerely,

A handwritten signature in cursive script that reads "Gordon L. Johnston". The signature is written in black ink and is positioned to the right of the typed name.

Gordon L. Johnston
Vice President
St. Lucie Plant

GLJ/KWF

Attachments

cc: Mr. William A. Passetti, Florida Department of Health

1.0 INTRODUCTION

The proposed License amendment deletes the following Technical Specifications (TSs) for each St. Lucie Unit:

- 3/4.6.4.1, "Hydrogen Analyzers," and,
- TS 3/4.6.4.2, "Hydrogen Recombiners."

The proposed TS changes support implementation of the revisions to 10 CFR 50.44, "Standards for Combustible Gas Control System in Light-Water-Cooled Power Reactors," that became effective on September 16, 2003.

Insofar as the TSs for the St. Lucie Units are custom TSs, the proposed changes are consistent with Revision 1 of NRC-approved Industry/Technical Specification Task Force (TSTF) Standard Technical Specification Change Traveler, TSTF-447, "Elimination of Hydrogen Recombiners and Change to Hydrogen and Oxygen Monitors." The availability of this TS improvement was announced in the Federal Register on September 25, 2004 as part of the consolidated line item improvement process (CLIIP).

2.0 DESCRIPTION OF PROPOSED AMENDMENT

Insofar as the TSs for the St. Lucie Units are custom TSs, consistent with the NRC-approved Revision 1 of TSTF-447, the proposed TS changes include:

- Elimination of TS 3/4.6.4.1, "Hydrogen Analyzers." (Note that the St. Lucie custom TSs do not list the hydrogen analyzers in section 3 of the TS, Instrumentation)
- Elimination of TS 3/4.6.4.2, "Hydrogen Recombiners."

As described in NRC-approved Revision 1 of TSTF-447, the changes to TS requirements results in changes to various TS Bases sections. The proposed TS bases changes are included in Attachment 4.

3.0 BACKGROUND

The background for this application is adequately addressed by the NRC Notice of Availability published on September 25, 2003 (68 FR 55416), TSTF-447, the documentation associated with the 10 CFR 50.44 rulemaking, and other related documents.

Removal of Hydrogen Recombiners and Analyzers from Technical Specifications

4.0 REGULATORY REQUIREMENTS AND GUIDANCE

The applicable regulatory requirements and guidance associated with this application are adequately addressed the NRC Notice of Availability published on September 25, 2003 (68 FR 55416), TSTF-447, the documentation associated with the 10 CFR 50.44 rulemaking, and other related documents.

5.0 TECHNICAL ANALYSIS

Florida Power & Light (FPL) has reviewed the safety evaluation (SE) published on September 25, 2003 (68 FR 55416) as part of the CLIP Notice of Availability. This verification included a review of the NRC staff's SE, as well as the supporting information provided to support TSTF-447. FPL has concluded that the justifications presented in the TSTF proposal and the SE prepared by the NRC staff are applicable to St. Lucie Units 1 and 2 and justify this amendment for the incorporation of the changes to the St. Lucie TSs.

6.0 REGULATORY ANALYSIS

A description of this proposed change and its relationship to applicable regulatory requirements and guidance was provided in the NRC Notice of Availability published on September 25, 2003 (68 FR 55416), TSTF-447, the documentation associated with the 10 CFR 50.44 rulemaking, and other related documents.

6.1 Verification and Commitments

As discussed in the model SE published in the NRC Notice of Availability published on September 25, 2003 (68 FR 55416) for this TS improvement, FPL is making the following verifications and regulatory commitments:

1. FPL has verified that a hydrogen monitoring system capable of diagnosing beyond design-basis accident hydrogen concentrations is installed at St. Lucie Units 1 and 2 and is making a regulatory commitment to maintain that capability. The existing hydrogen monitor TS requirements will be modified and relocated to the licensee controlled technical specification requirements section of St. Lucie Units 1 and 2 Updated Final Safety Analysis Reports (UFSARs Section 13.8 (Unit 1) and 13.7 (Unit 2)). This regulatory commitment will be implemented within 60 days of approval of this amendment request.
2. Neither St. Lucie Unit 1 or 2 has an inerted containment.

Removal of Hydrogen Recombiners and Analyzers from Technical Specifications

7.0 NO SIGNIFICANT HAZARDS CONSIDERATION

FPL has reviewed the proposed no significant hazards consideration determination published on September 25, 2003 (68 FR 55416) as part of the CLIIP. FPL has concluded that the proposed determination presented in the notice is applicable to St. Lucie Units 1 and 2 and the determination is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

8.0 ENVIRONMENTAL EVALUATION

FPL has reviewed the environmental evaluation included in the model SE published on September 25, 2003 (68 FR 55416) as part of the CLIIP. FPL has concluded that the staff's findings presented in that evaluation are applicable to St. Lucie Units 1 and 2 and the evaluation is hereby incorporated by reference for this application.

9.0 PRECEDENT

This application is being made in accordance with the CLIIP. FPL is not proposing variations or deviations from the TS changes described in TSTF-447 or the NRC staff's model SE published on September 25, 2003 (68 FR 55416).

10.0 REFERENCES

Federal Register Notice: Notice of Availability of Model Application Concerning Technical Specification Improvement To Eliminate Hydrogen Recombiner Requirement, and Relax the Hydrogen and Oxygen Monitor Requirements for Light Water Reactors Using the Consolidated Line Item Improvement Process, published September 25, 2003 (68 FR 55416).

Technical Specification Change
Mark Ups

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CONTAINMENT SYSTEMS

~~3/4.6.4 COMBUSTIBLE GAS CONTROL DELETED~~

HYDROGEN ANALYZERS

LIMITING CONDITION FOR OPERATION

3.6.4.1 Two independent containment hydrogen analyzers shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

With one hydrogen analyzer inoperable, restore the inoperable analyzer to OPERABLE status within 30 days or demonstrate within the next 24 hours that the grab sample system of the inoperable hydrogen analyzer has the capability to draw a sample of the containment atmosphere into the grab sample canister. Verify this capability of the grab sample system at least once per 30 days thereafter. Return the inoperable hydrogen analyzer to OPERABLE status within an additional 60 days. Otherwise, be in at least HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.6.4.1.1 Each hydrogen analyzer shall be demonstrated OPERABLE by the performance of a CHANNEL FUNCTIONAL TEST at least once per 31 days, and at least once per 92 days on a STAGGERED TEST BASIS by performing a CHANNEL CALIBRATION using sample gases containing:

- a. Nominally one volume percent hydrogen, balance nitrogen and oxygen.
- b. Nominally four volume percent hydrogen, balance nitrogen, and oxygen.

→ Delete

CONTAINMENT SYSTEMS

ELECTRIC HYDROGEN RECOMBINERS - W

LIMITING CONDITION FOR OPERATION

3.6.4.2 Two independent containment hydrogen recombiner systems shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

With one hydrogen recombiner system inoperable, restore the inoperable system to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.6.4.2 Each hydrogen recombiner system shall be demonstrated OPERABLE:

- a. At least once per 6 months by verifying during a recombiner system functional test that the minimum heater sheath temperature increases to $\geq 700^{\circ}\text{F}$ within 90 minutes and is maintained for at least 2 hours.
- b. At least once per 18 months by:
 1. Performing a CHANNEL CALIBRATION of all recombiner instrumentation and control circuits.
 2. Verifying through a visual examination that there is no evidence of abnormal conditions within the recombiners (i.e., loose wiring or structural connections, deposits of foreign materials, etc.).

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Removal of Hydrogen Recombiners and Analyzers from Technical Specifications

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

3. Verifying during a recombiner system functional test that the heater sheath temperature increases to $\geq 1200^{\circ}\text{F}$ within 5 hours and is maintained for at least 4 hours.
4. Verifying the integrity of the heater electrical circuits by performing a continuity and resistance to ground test following the above required functional test. The resistance to ground for any heater phase shall be $\geq 10,000$ ohms.

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CONTAINMENT SYSTEMS

3/4.6.4 ~~COMBUSTIBLE GAS CONTROL~~ **DELETED**

HYDROGEN ANALYZERS

LIMITING CONDITION FOR OPERATION

3.6.4.1 Two independent containment hydrogen analyzers shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

With one hydrogen analyzer inoperable, restore the inoperable analyzer to OPERABLE status within 30 days or demonstrate within the next 24 hours that the grab sample system of the inoperable hydrogen analyzer has the capability to draw a sample of the containment atmosphere into the grab sample canister. Verify this capability of the grab sample system at least once per 30 days thereafter. Return the inoperable hydrogen analyzer to OPERABLE status within an additional 60 days. Otherwise, be in at least HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.6.4.1 Each hydrogen analyzer shall be demonstrated OPERABLE by the performance of a CHANNEL FUNCTIONAL TEST at least once per 31 days, and at least once per 92 days on a STAGGERED TEST BASIS by performing a CHANNEL CALIBRATION using sample gases containing:

- a. Nominally one volume percent hydrogen, balance nitrogen and oxygen.
- b. Nominally four volume percent hydrogen, balance nitrogen, and oxygen.

Delete

CONTAINMENT SYSTEMS

ELECTRIC HYDROGEN RECOMBINERS - W

LIMITING CONDITION FOR OPERATION

3.6.4.2 Two independent containment hydrogen recombiner systems shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

With one hydrogen recombiner system inoperable, restore the inoperable system to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.6.4.2 Each hydrogen recombiner system shall be demonstrated OPERABLE:

- a. At least once per 6 months by verifying during a recombiner system functional test that the minimum heater sheath temperature increases to greater than or equal to 700°F within 90 minutes. Upon reaching 700°F, increase the power setting to maximum power for 2 minutes and verify that the power meter reads greater than or equal to 60 kW.
- b. At least once per 18 months by:
 1. Performing a CHANNEL CALIBRATION of all recombiner instrumentation and control circuits.
 2. Verifying through a visual examination that there is no evidence of abnormal conditions within the recombiner enclosure (i.e., loose wiring or structural connections, deposits of foreign materials, etc.).
 3. Verifying the integrity of the heater electrical circuits by performing a resistance to ground test following the above required functional test. The resistance to ground for any heater phase shall be greater than or equal to 10,000 ohms.

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Word Processed
Technical Specification
Changes

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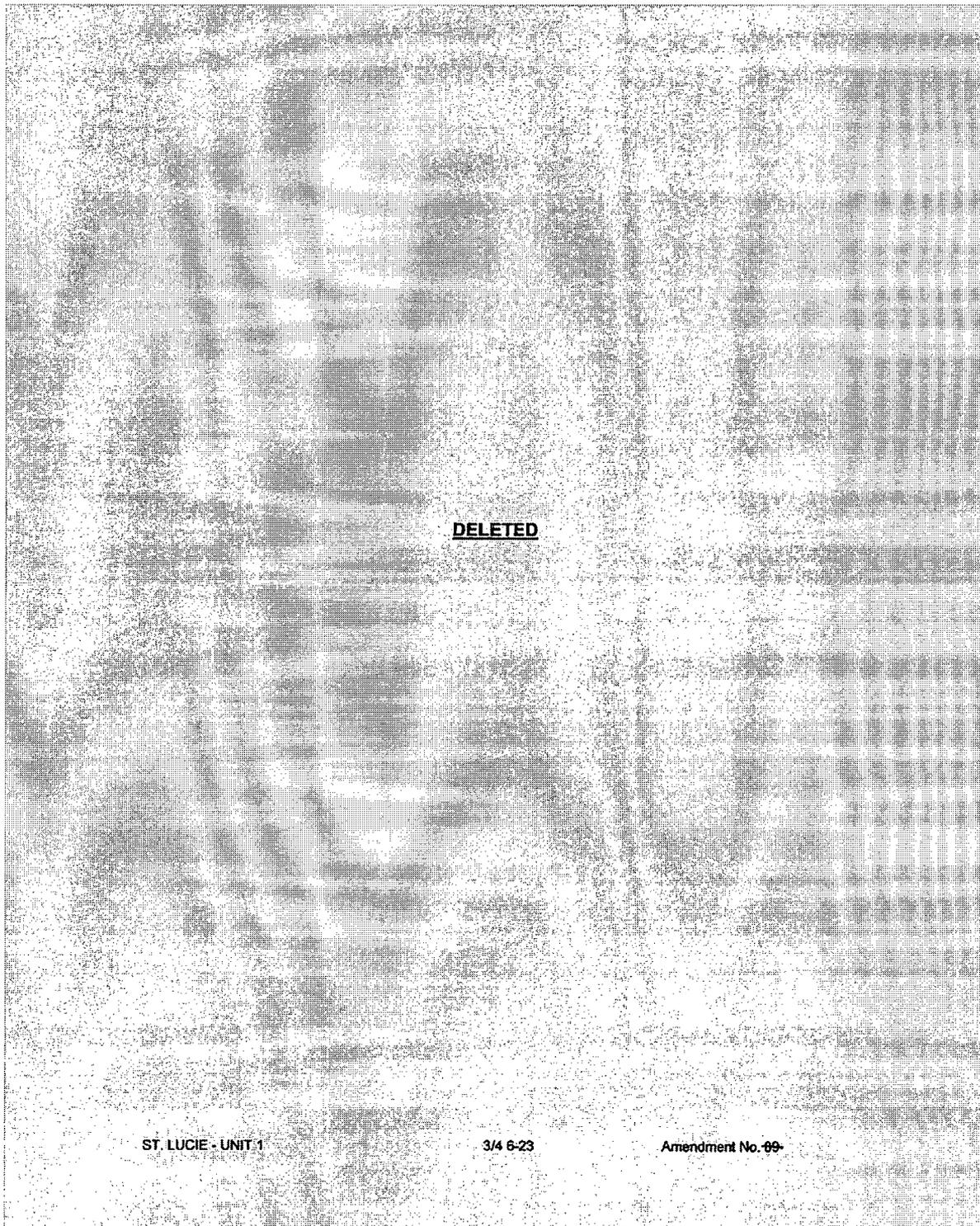
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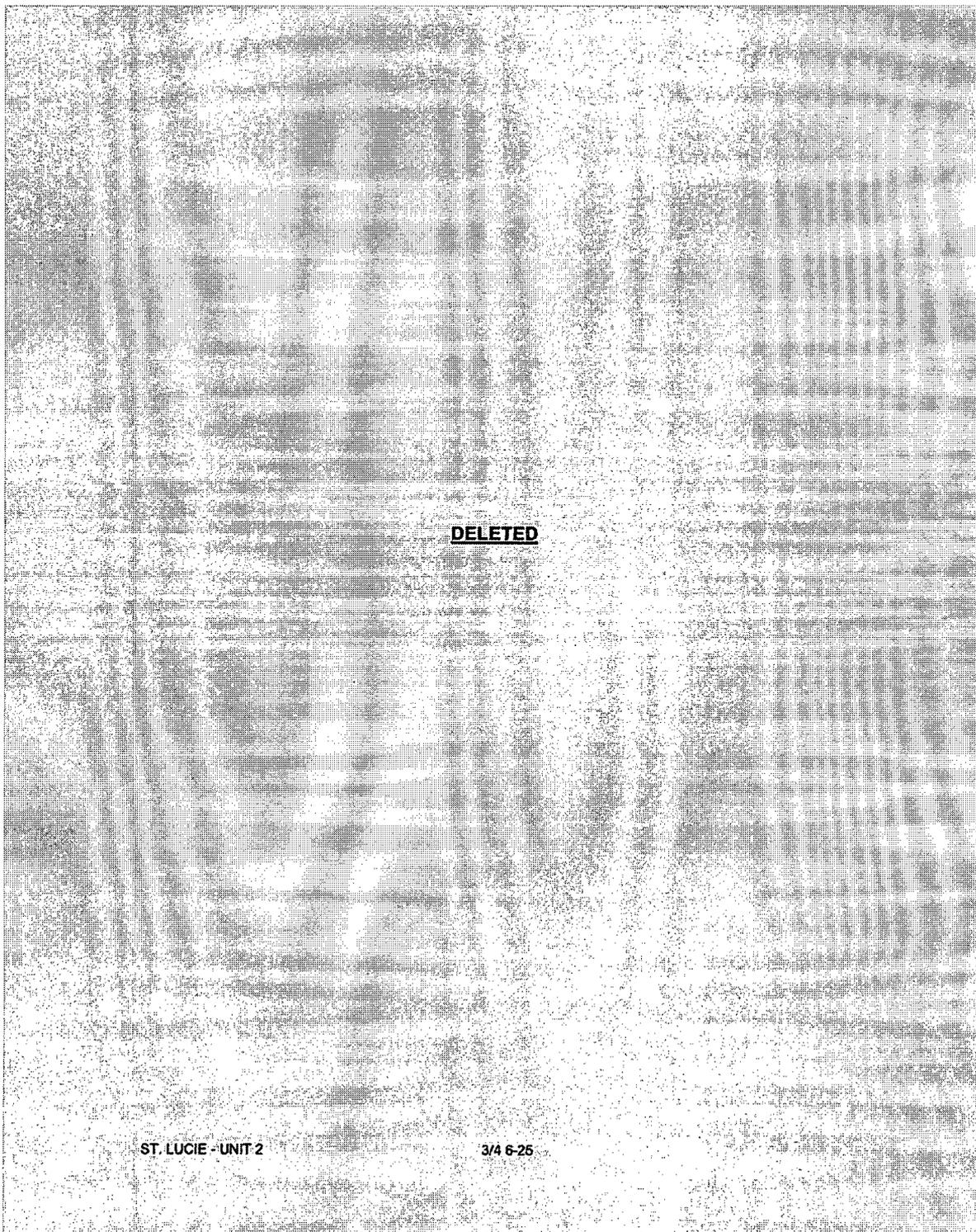
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TB Bases (Information Only)

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3/4.6 CONTAINMENT SYSTEMS (continued)

BASES (continued)

3/4.6.4 ~~COMBUSTIBLE GAS CONTROL DELETED~~

The OPERABILITY of the equipment and systems required for the detection and control of hydrogen gas ensures that this equipment will be available to maintain the hydrogen concentration within containment below its flammable limit during post-LOCA conditions. Either recombinder unit is capable of controlling the expected hydrogen generation associated with 1) zirconium-water reactions, 2) radiolytic decomposition of water and 3) corrosion of metals within containment.

The containment fan coolers are used in a secondary function to ensure adequate mixing of the containment atmosphere following a LOCA. This mixing action will prevent localized accumulations of hydrogen from exceeding the flammable limit.

3/4.6.5 VACUUM RELIEF VALVES

BACKGROUND: The vacuum relief valves protect the containment vessel against negative pressure (i.e., a lower pressure inside than outside). Excessive negative pressure inside containment can occur if there is an inadvertent actuation of the containment cooling system or the containment spray system. Multiple equipment failures or human errors are necessary to have inadvertent actuation.

The containment pressure vessel contains two 100% vacuum relief lines installed in parallel that protect the containment from excessive external loading. The vacuum relief lines are 24-inch penetrations that connect the shield building annulus to the containment. Each vacuum relief line is isolated by a pneumatically operated butterfly valve in series with a check valve located on the containment side of the penetration.

A separate pressure controller that senses the differential pressure between the containment and the annulus actuates each butterfly valve. Each butterfly valve is provided with an air accumulator that allows the valve to open following a loss of instrument air. The combined pressure drop at rated flow through either vacuum relief line will not exceed the containment pressure vessel design external pressure differential of 0.7 psid with any prevailing atmospheric pressure.

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	BASES (continued)	
3/4.6.4	COMBUSTIBLE GAS CONTROL DELETED	
	<p>The OPERABILITY of the equipment and systems required for the detection and control of hydrogen gas ensures that this equipment will be available to maintain the hydrogen concentration within containment below its flammable limit during post-LOCA conditions. Either recombining unit is capable of controlling the expected hydrogen generation associated with 1) zirconium-water reactions, 2) radiolytic decomposition of water and 3) corrosion of metals within containment. These hydrogen control systems are consistent with the recommendations of Regulatory Guide 1.7, "Control of Combustible Gas Concentrations in Containment Following a LOCA," March 1971.</p> <p>The containment fan coolers and containment spray ensure adequate mixing of the containment atmosphere following a LOCA. This mixing action will prevent localized accumulations of hydrogen from exceeding the flammable limit.</p>	
3/4.6.5	VACUUM RELIEF VALVES	
	<p>BACKGROUND: The vacuum relief valves protect the containment vessel against negative pressure (i.e., a lower pressure inside than outside). Excessive negative pressure inside containment can occur if there is an inadvertent actuation of the containment cooling system or the containment spray system. Multiple equipment failures or human errors are necessary to have inadvertent actuation.</p> <p>The containment pressure vessel contains two 100% vacuum relief lines installed in parallel that protect the containment from excessive external loading. The vacuum relief lines are 24-inch penetrations that connect the shield building annulus to the containment. Each vacuum relief line is isolated by a pneumatically operated butterfly valve in series with a check valve located on the containment side of the penetration.</p> <p>A separate pressure controller that senses the differential pressure between the containment and the annulus actuates each butterfly valve. Each butterfly valve is provided with an air accumulator that allows the valve to open following a loss of instrument air. The combined pressure drop at rated flow through either vacuum relief line will not exceed the containment pressure vessel design external pressure differential of 0.7 psid with any prevailing atmospheric pressure.</p>	