St. Lucie Unit 1 and 2
Docket No. 50-335 and 50-389
Proposed License Amendment
Explosive Gas Mixture - Hydrogen Monitor Deletion

ATTACHMENT 1

St. Lucie Unit 1 Marked-up Technical Specification Page

3/4 11-14

RADIOACTIVE EFFLUENTS

EXPLOSIVE GAS MIXTURE

LIMITING CONDITION FOR OPERATION

3.11.2.5 The concentration of oxygen in the waste gas decay tanks shall be limited to less than or equal to 2% by volume whenever the hydrogen concentration exceeds 4% by volume.

APPLICABILITY: At all times.

ACTION:

a. With the concentration of oxygen in the waste gas decay tank greater than 2% by volume but less than or equal to 4% by volume, reduce the oxygen concentration to the above limits within 48 hours.

b. With the concentration of oxygen in the waste gas decay tank greater than 4% by volume and the hydrogen concentration greater than 2% by volume, immediately suspend all additions of waste gases to the system and immediately commence reduction of the concentration of oxygen to less than or equal to 2% by volume.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

Delete

4.11.2.5.1 The concentrations of hydrogen and oxygen in the waste gas decay tank shall be determined to be within the above limits by continuously monitoring the waste gases in the on service waste gas decay tank with the hydrogen and oxygen monitors required OPERABLE by Table 3.3-13 of Specification 3.3.3.10.

Delete

Delete

Add New Surveillance

4.11.2.5.2 With the oxygen concentration in the on service waste gas decay tank greater than 2% by volume as determined by Specification 4.11.2.5.1, the concentration of hydrogen in the waste gas decay tank shall be determined to be within the above limits by gas partitioner sample at least once per 24 hours.

St. Lucie Unit 1 and 2
Docket No. 50-335 and 50-389
Proposed License Amendment
Explosive Gas Mixture - Hydrogen Monitor Deletion

ATTACHMENT 2

St. Lucie Unit 2 Marked-up Technical Specification Page

3/4 11-14

RADIOACTIVE EFFLUENTS

EXPLOSIVE GAS MIXTURE

LIMITING CONDITION FOR OPERATION

3.11.2.5 The concentration of oxygen in the waste gas decay tanks shall be limited to less than or equal to 2% by volume whenever the hydrogen concentration exceeds 4% by volume.

APPLICABILITY: At all times.

ACTION:

a. With the concentration of oxygen in the waste gas decay tank greater than 2% by volume but less than or equal 4% by volume, reduce the oxygen concentration to the above limits within 48 hours.

b. With the concentration of oxygen in the waste gas decay tank greater than 4% by volume and the hydrogen concentration greater than 2% by volume, immediately suspend all additions of waste gases to the system and immediately commence reduction of the concentration of oxygen to less than or equal to 2% by volume.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.5.1 The concentration~~s~~ of ~~hydrogen and~~ oxygen in the waste gas decay tank shall be determined to be within the above limits by continuously monitoring the waste gases in the on service waste gas decay tank with the ~~hydrogen and~~ oxygen monitor~~s~~ required OPERABLE by Table 3.3-13 of Specification 3.3.3.10. Delete

Add New Surveillance

4.11.2.5.2 With the oxygen concentration in the on service waste gas decay tank greater than 2% by volume as determined by Specification 4.11.2.5.1, the concentration of hydrogen in the waste gas tank shall be determined to be within the above limits by gas PARTITIONER sample at least once per 24 hours.

St. Lucie Unit 1 and 2
Docket No. 50-335 and 50-389
Proposed License Amendment
Explosive Gas Mixture - Hydrogen Monitor Deletion

ATTACHMENT 3

SAFETY ANALYSIS

Introduction

A change is proposed to revise the St. Lucie Units 1 and 2 Technical Specifications Section 3/4.11.2.5 to correct the hydrogen monitoring surveillance requirements of Explosive Gas Mixture Technical Specifications. This change will make the Technical Specifications consistent with the approved design.

Discussion

The proposed change to the St. Lucie Unit 1 and 2 Technical Specifications revises the Surveillance Requirements of Technical Specification 3/4.11.2.5. This Technical Specification change modifies the existing surveillance requirement 4.11.2.5 to delete reference to a continuous hydrogen concentration monitor and adds a new surveillance requirement 4.11.2.5.2. The new surveillance requirement requires the hydrogen concentration to be determined by gas partitioner grab sample at least once per 24 hours when the oxygen concentration as determined by the continuous oxygen monitor exceeds 2% by volume.

Safety Analysis

St. Lucie Units 1 and 2 have two continuous oxygen monitors in the waste gas system and use a gas partitioner grab sample to determine the hydrogen concentration of the waste gas decay tanks when the oxygen concentration is elevated above threshold values. St. Lucie Units 1 and 2 do not have installed continuous hydrogen monitors in the waste gas systems. The Standard Technical Specification was inappropriately used for the Explosive Gas Mixture Technical Specification when the St. Lucie Unit 2 Technical Specifications were originally issued and when the Radiological Effluent Technical Specifications were added to the St. Lucie Unit 1 Technical Specifications by License Amendment 59. Technical Specification 3.3.3.10 is related to this Technical Specification for the operability and surveillance requirements of the radioactive gaseous effluent monitoring instrumentation. Table 3.3-13 of Technical Specification 3.3.3.10 was appropriately changed at the time the Technical Specifications were issued to reflect the specific design for the Radioactive Gaseous Waste System at the St. Lucie Plant.

The St. Lucie Unit 2 Updated Final Safety Analysis Report (UFSAR) Section 11.3 "Gaseous Waste System" describes the Gaseous Waste Management System (GWMS). Section 11.3.1 m) of the system design bases describes the features to detect and preclude the formation of potentially explosive mixtures of hydrogen and oxygen. Section 11.3.2 "System Description" describes the gas analyzer package that is provided to continuously monitor the oxygen concentrations in various plant components where potentially explosive mixtures could develop. The system design was reviewed as part of the Original License review. The NRC staff review and the acceptability of the design is documented in the section 11 of the St. Lucie Unit 2 Safety Evaluation Report Revision 0 and supplemented in section 11.5 of SSER Revision 3. The NRC review of the Unit 1 system is documented in the Safety Evaluation (dated August 18, 1983) and Technical Evaluation Report (EGG-PHYS-6241 dated April 26, 1983). This review was performed in support of Amendment 59 which added the Radiological Effluent Technical Specifications (RETS) to the Unit 1 Technical Specifications.

The above Safety Evaluations describe the FPL commitment to maintain a safe concentration of oxygen in the system since hydrogen is present in excess. The Unit 1 evaluation acknowledges that T.S. Table 3.3-13 does not include a hydrogen monitor. Technical Specifications 3.11.2.5 and 4.11.2.5 specify the concentration and monitoring of hydrogen gas, respectively, but reference instruments not installed in the plant. This Technical Specification change adds a method and frequency for monitoring hydrogen concentration when the oxygen concentration exceeds a threshold.

St. Lucie Units 1 and 2
Docket No. 50-335 and 50-389
Proposed License Amendment
Explosive Gas Mixture - Hydrogen Monitor Deletion

ATTACHMENT 4

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

The standards used to arrive at a determination that a request for amendment involves a no significant hazards consideration are included in the Commission's regulation, 10 CFR 50.92, which states that no significant hazards considerations are involved if the operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. Each standard is discussed as follows:

(1) Operation of the facility in accordance with the proposed amendment would not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated because this amendment does not change the St. Lucie design as previously evaluated by the NRC. The NRC has previously evaluated the instrumentation used to ensure an explosive gas mixture will not occur at St. Lucie during the Operating License review of St. Lucie Unit 2 and during the review of Amendment 59 for St. Lucie Unit 1.

(2) Use of the modified Technical Specification would not create the possibility of a new or different kind of accident from any previously evaluated.

The use of this modified Technical Specification can not create the possibility of a new or different kind of accident from any previously evaluated since the physical design of the facility is unchanged. No new failure mode is introduced due to the change in the hydrogen monitoring requirements.

(3) Use of the modified Technical Specification would not involve a significant reduction in a margin of safety.

The operation and physical facility are unchanged by this Technical Specification proposed amendment.

Based on the above, we have determined that the proposed amendment does not (1) involve a significant increase in the probability or consequences of an accident previously evaluated, (2) create the

probability of a new or different kind of accident from any previously evaluated, or (3) involve a significant reduction in a margin of safety; and therefore does not involve a significant hazards consideration.