

ATTACHMENT I

Marked-up Technical Specification Page

St. Lucie Unit 1

5-6

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THE
FEDERAL BUREAU OF INVESTIGATION
UNITED STATES DEPARTMENT OF JUSTICE

DESIGN FEATURES

CRITICALITY (Continued)

2. A center-to-center distance of not less than 12.53 inches between fuel assemblies placed in the storage racks.
 3. A boron concentration greater than or equal to 1720 ppm. In addition, fuel in the storage pool shall be a U-235 enrichment of less than or equal to 4.0 weight percent.
- 4.5
- a. The new fuel storage racks are designed for dry storage of unirradiated fuel assemblies having a U-235 enrichment less than or equal to ~~4.0~~ weight percent, while maintaining a k_{eff} of less than or equal to 0.98 under the most reactive condition.

DRAINAGE

5.6.2 The fuel pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 56 feet.

CAPACITY

5.6.3 The spent fuel pool is designed and shall be maintained with a storage capacity limited to no more than 728 fuel assemblies.

5.7 SEISMIC CLASSIFICATION

5.7.1 Those structures, systems and components identified as seismic Class I in Section 3.2.1 of the FSAR shall be designed and maintained to the original design provisions contained in Section 3.7 of the FSAR with allowance for normal degradation pursuant to the applicable Surveillance Requirements.

5.8 METEOROLOGICAL TOWER LOCATION

5.8.1 The meteorological tower location shall be as shown on Figure 5.1-1.

5.9 COMPONENT CYCLE OR TRANSIENT LIMITS

5.9.1 The components identified in Table 5.9-1 are designed and shall be maintained within the cyclic or transient limits of Table 5.9-1.



ATTACHMENT 2
SAFETY EVALUATION

SAFETY EVALUATION

Background

The currently licensed fuel enrichment limit at St. Lucie Unit 1 for the existing new fuel storage racks, spent fuel racks and fuel handling structures is 4.0 w/o U-235. Florida Power and Light Company (FPL) has submitted a proposed license amendment in support of re-racking the Unit 1 spent fuel pool with high density storage racks (FPL letter L-87-245, dated June 12, 1987). That submittal addresses the required analysis, i.e., criticality, thermal hydraulic, seismic, etc. in support of replacing the existing spent fuel racks. The criticality analysis in the re-rack submittal supports an enrichment limit of ≤ 4.5 w/o U-235 for the high density spent fuel racks.

The criticality analysis for the existing new fuel storage racks and fuel handling equipment (Appendix 1) was performed separately from the re-rack analysis. This submittal supports increasing the enrichment specification of the new fuel storage rack technical specification (5.6.1.b) to 4.5 w/o U-235.

FPL is requesting to increase the maximum enrichment specification of the new fuel storage rack Criticality Technical Specification (5.6.1.b) at St. Lucie Unit 1 to < 4.5 w/o U-235. This proposed change allows increased flexibility in fuel management and accommodates storage of higher enrichments for possible use in future cycles.

Safety Evaluation

The analysis of the proposed increase in fuel enrichment has been accomplished using currently accepted codes and standards as specified in the Safety Analysis Report. Calculations performed for the handling and storage (new fuel racks) of 4.5 w/o U-235 enriched fuel assemblies demonstrate that the applicable criticality acceptance criteria are met.

Calculations performed for the new fuel storage racks at various degrees of moderation, including full flooding, indicate that the limiting keff occurs for a moderator void fraction of 0.91 and has a value of 0.974 at the 95% confidence level. This value is lower than the safety criteria limit of 0.98 quoted in the applicable standards for new fuel storage racks under optimum moderation conditions.

Criticality calculations were also performed for the fuel handling structures (fuel elevator, upender and transfer tube) at a pool water temperature of 68°F. The most reactive situation during normal fuel handling operations was conservatively assumed

to occur when two assemblies are located 4 inches edge to edge from each other. The resulting keff from this scenario is 0.929 at the 95% confidence level. For postulated accidents such as having two assemblies by accident achieve a bundle to bundle spacing of less than 4 inches, credit may be taken for realistic pool conditions. These conditions include taking credit for soluble boron (≥ 1720 ppm) present in the pool water. At this boron concentration, the keff is reduced by approximately 0.20, resulting in reactivities far below the 0.95 limit. Hence, postulated accidents in the fuel handling system are of little concern from a criticality safety standpoint. Based on the foregoing discussion, it is concluded that the fuel elevator upender and transfer tube will meet the safety criteria limit of keff ≤ 0.95 .

ATTACHMENT 3

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

The standards used to arrive at a determination that a request for amendment involves no significant hazards consideration are included in the Commission's regulations, 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.

FPL has identified a fuel assembly drop as a potential accident scenario whose consequences would be affected by the proposed change. For this type of accident, the criticality acceptance criterion is not violated. Based on the above, it is concluded that the proposed amendment will not result in an increase of the probability or consequences of accidents previously evaluated.

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

The requested change does not create the possibility of a new or different kind of accident from any accident previously evaluated because the plant configuration and the manner in which it is operated remain the same. The proposed change does not constitute any change in the procedures for plant operation or hardware. In addition, FPL has evaluated the proposed technical specification changes in accordance with the appropriate Industry Codes and Standards and, based on this evaluation, FPL finds that the proposed technical specification change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed change does not involve a significant reduction in a margin of safety. The new fuel storage rack calculated keff of 0.974 (95% confidence level) is lower than the established acceptance criteria of ≤ 0.98 keff. The 0.929 keff (95% confidence level) calculated for the fuel handling structures is also considerably lower than the established acceptance criteria of ≤ 0.95 keff. The above calculated neutron multiplication factors include all the necessary biases and uncertainties.

As noted above, the required acceptance criteria (≤ 0.98 keff under optimum moderation conditions and ≤ 0.95 under fully flooded conditions for the new fuel storage racks, and ≤ 0.95 keff for the fuel handling structures) have been adhered to in the criticality analysis performed in support of this proposed technical specification change. Specifically, the

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0.02 keff and 0.05 keff criticality margin of safety required for the new fuel storage area under optimum moderation and fully flooded conditions respectively, and 0.05 keff criticality margin of safety required for the fuel handling structures have been maintained.

Based on the previous discussion, the proposed amendment to increase the allowable fuel U-235 enrichment in the new fuel storage racks and fuel handling equipment will not involve a significant reduction in a margin of safety.

Based on the above, we have determined that the amendment request 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 accident previously evaluated, or (3) involve a significant reduction in a margin of safety; and therefore does not involve a significant hazards consideration.

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APPENDIX 1



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