PROPOSED TECHNICAL SPECIFICATION
Turkey Point 3 and 4

5.2 REACTOR

Reactor Core

1. The reactor core contains approximately 71 metric tons of uranium in the form of slightly enriched uranium dioxide pellets. The pellets are encapsulated in Zircaloy - 4 tubing to form fuel rods. The reactor core is made up of 157 fuel assemblies. Each fuel assembly contains 204 fuel rods.

2. The average enrichment of the initial core is a nominal 2.50 weight per cent of U-235. Three fuel enrichments are used in the initial core. The highest enrichment is a nominal 3.10 weight per cent of U-235.

3. Reload fuel will be similar in design to the initial core.

4. Burnable poison rods are in the form of rod clusters, which are located in vacant rod cluster control guide tubes, are used for reactivity and/or power distribution control.

5. There are 45 full length RCC assemblies and 8 partial length* RCC assemblies in the reactor core. The full

---

*Any reference to part-length rods no longer applies after the part-length rods are removed from the reactor.

This amendment effective as of date of issuance for Unit 3 and date of startup, Cycle 10, Unit 4.

PROPOSED TECHNICAL SPECIFICATION
Turkey Point Units 3 and 4

5.4 FUEL STORAGE

1. The new and spent fuel pit structures are designed to withstand the anticipated earthquake loadings as Class 1 structures. Each spent fuel pit has a stainless steel liner to ensure against leakage.

2. The new and spent fuel storage racks are designed so that it is impossible to insert assemblies in other than the prescribed locations. The fuel in the spent fuel pit is stored vertically in an array with sufficient center-to-center distance between assemblies to assure K_{eff} equal to or less than 0.95 with new fuel containing not more than 52.4 grams of U-235 per axial centimeter of fuel assembly even if boron was not added to the pit water.

   The fuel in the new fuel storage racks is stored vertically in an array with sufficient center-to-center distance between assemblies to assure K_{eff} equal to or less than 0.98 with new fuel containing not more than 57.7 grams of U-235 per axial centimeter of fuel assembly.

3. The boron concentration in the spent fuel pit is that used in the reactor cavity and refueling canal during refueling operations, whenever there is fuel in the pit, except for initial new fuel storage.

ATTACHMENT 2

No Significant Hazards Consideration

Florida Power & Light Company (FPL) presents this evaluation of the hazards considerations involved with the proposed amendment, focusing on the three standards set forth in 10CFR 50.92(c) as quoted below:

> "The Commission may make a final determination, pursuant to the procedures in 50.91, that a proposed amendment to an operating license for a facility licensed under 50.21(b) or 50.22 or for a testing facility involves no significant hazards considerations, unless it finds that operation of the facility in accordance with the proposed amendment would:
>
> 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."

FPL submits that the activities associated with this amendment request do not meet any of the significant hazards consideration standards of 10 CFR 50.92(c) and, accordingly, a no significant hazards consideration finding is justified. In support of this determination, necessary background information is first provided, followed by a discussion of each significant safety hazards consideration factors with respect to the proposed amendments.

Background

The Turkey Point Plants were designed and constructed with two new fuel storage racks and two spent fuel storage pools, one of each associated with Unit 3 and one with Unit 4. The new fuel storage racks have a capacity of 54 new fuel assemblies. The spent fuel storage pools had a capacity for 217 spent fuel assemblies (equivalent to 1-1/3 cores).

The Turkey Point Units 3 and 4 Final Safety Analysis Report addressed the safety implications of these facilities and included relevant parameters associated with criticality, structural integrity, and cooling. The Turkey Point Units 3 and 4 Safety Evaluation Report (Docket No.'s 50-250 and 50-251) found the environmental and safety impacts of storage in these facilities to be acceptable.

In 1976, a request to amend the Turkey Point operating licenses for increased spent fuel storage was submitted by FPL. By letter dated March 17, 1977, the Commission approved Amendments 23 and 22 to facility operating licenses DPR-31 and DPR-41, respec-

tively, for modification to Turkey Point Units 3 and 4 spent fuel storage facilities. These modifications consisted of reracking the Unit 3 and 4 spent fuel pools with high density fuel storage racks which increased the storage capacity from 217 fuel assemblies to 621 fuel assemblies. Approval of the amendments included a detailed review and analysis of all relevant storage parameters and potential accidents. The analyses resulted in a finding that environmental and safety impacts were negligible.

The safety evaluation performed in support of the request to amend the Turkey Point operating licenses to allow reracking of the Unit 3 and 4 fuel pools addressed the following:

1. Structural and Seismic Analysis
2. Nuclear Criticality Analysis
3. Thermal-Hydraulic
4. Accident Analyses
5. Radiation Exposures
6. Spent Fuel Cask Drop Accident

It was determined that the proposed modifications to the Unit 3 and 4 spent fuel pools would be acceptable because: (1) the rack structural design would withstand conditions during normal operation combined with the maximum earthquake, (2) the rack design would preclude criticality for any moderating condition, (3) the existing spent fuel cooling system was determined to adequately cool the increased heat load and a redundant 100% capacity spare pump would be installed, (4) the increased radiation doses, both onsite and offsite, would be negligible, and (5) spent fuel cask handling operations would not change from the original design.

The current spent fuel storage capacity at Turkey Point consists of 621 storage locations in each spent fuel pool.

With this application, FPL is requesting approval to increase the U-235 linear loading in all fuel storage areas and delete the reactor core reload fuel U-235 enrichment specification, as set forth in the attached Safety Analysis Report.

Evaluation

The following evaluation demonstrates (by reference to the analysis contained in the attached Safety Analysis Report) that the proposed amendment to increase the fuel storage U-235 linear loading does not exceed any of the three significant hazards consideration standards. The analysis of this proposed increase in fuel storage enrichment has been accomplished using current accepted codes and standards as specified in Section 2.1 of the attached Safety Analysis Report. The results of the analysis meet the specified acceptance criteria in these standards as

presented in the Safety Analysis Report. The basis of the proposed deletion of the reactor core reload fuel enrichment specification is that this specification is unnecessary and superfluous in that there are other provisions in the Technical Specifications which determine safe operating and fuel storage limits related to fuel enrichment. These other safe operating limits include dynamic parameters, rod worths and peaking factors. In other words, specification of reload fuel enrichment has no bearing on the safe operation of the reactor core provided that existing safety limits and limiting conditions for operation (LCOs) are satisfied.

(1) Involve a significant increase in the probability or consequences of an accident previously evaluated.

In the course of the analysis, FPL has identified the following potential accident scenarios:

1. A fuel assembly drop in the spent fuel pool.

2. Loss of spent fuel pool cooling system flow.

3. A spent fuel cask drop.

For 1, "A fuel assembly drop in the spent fuel pool", the criticality acceptance criterion is not violated as identified in Section 3.0 of the Safety Analysis Report. The radiological consequences of this type of accident in the spent fuel pool are bounded by the cask drop accident. Thus the consequences of this type accident will not be significantly increased from previously evaluated fuel assembly drops.

The consequences of 2, "Loss of spent fuel cooling system flow" will not be effected since this application is not intended to qualify the fuel for extended burnup operation. The use of a higher U-235 linear loading by itself will not affect the decay heat characteristics of the fuel assembly or the previous evaluation of the loss of spent fuel cooling system flow. The proposed amendment to increase the fuel storage U-235 linear loading specification will not result in an increase in the probability or consequences of an accident previously evaluated for loss of spent fuel cooling system flow.

The consequences of 3, "A spent fuel cask drop", as previously evaluated will not be affected by an increase in fuel assembly U-235 linear loading since this application is not intended to qualify the fuel for extended burnup nor does this amendment alter the configuration of the storage racks.

The proposed amendment to increase the fuel storage U-235 linear loading will not result in an increase in the probability or consequences of an accident previously evaluated for a spent fuel cask drop.

Thus, it is concluded that the proposed amendment to increase the fuel storage U-235 linear loading and deletion of the reactor core enrichment specification will not involve a significant increase in the probability or consequences of an accident previously evaluated.

(2) Create the possibility of a new or different kind of accident from any accident previously evaluated.

FPL has evaluated the proposed technical specification changes in accordance with the guidance of the NRC position paper entitled, "OT Position for Review and Acceptance of Spent Fuel Storage and Handling Applications", appropriate NRC Regulatory Guides, appropriate NRC Standard Review Plans, and appropriate Industry Codes and Standards as listed in Section 2.1 of the attached Safety Analysis Report. As a result of this evaluation, FPL finds that the proposed technical specification changes do not, in any way, create the possibility of a new or different kind of accident from any accident previously evaluated for the Turkey Point Fuel Storage Facilities.

(3) Involve a significant reduction in a margin of safety.

The NRC Staff Safety Evaluation review process has established that the issue of margin of safety, when applied to modification, will need to address the area of nuclear criticality considerations.

The established acceptance criteria for criticality is that the neutron multiplication factor, including all uncertainties, under all conditions:

(a) shall be less than or equal to 0.98 for the new fuel storage facility; and

(b) shall be less than or equal to 0.95 for the spent fuel pool.

This margin or safety has been adhered to in the criticality analysis methods for the spent fuel and new fuel storage, as discussed in Section 3.0 and 4.0 of the attached Safety Analysis Report.

The methods to be used in the criticality analysis conform with applicable codes, standards, or pertinent sections thereof, as referenced in Section 2.1 of the Safety Analysis Report.

In meeting the acceptance criteria for criticality in the Turkey Point Unit 3 and Unit 4 fuel storage facilities such that:

(a) K_{eff} is always less than 0.98, including uncertainties at a 95/95 probability confidence level in the new fuel storage facility.

(b) K_{eff} is always less than 0.95, including all uncertainties at a 95/95 probability confidence level in the spent fuel pool.

Increasing the limiting K_{eff} in the new fuel storage facility to 0.98 is solely administrative and consistent with the value established in USNRC Standard Review Plan, NUREG-0800, Section 9.1.1.

The proposed amendment to increase the fuel storage U-235 linear loading and increase the limiting K_{eff} in the new fuel storage area will not involve a significant reduction in the margin of safety for nuclear criticality.

In summation, it has been shown that the proposed increase in the fuel storage facility U-235 linear loading, increasing the limiting K_{eff} in the new fuel storage facility, and deletion of the reactor core enrichment specification does 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.

FPL has determined and submits that the proposed amendments described do not involve a significant safety hazard and that the standards in 10 CFR 50.92 have been met.