TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

LIST OF TABLES

3.12 CASK HANDLING

Applicability: Applies to limitations during cask handling.

Objective: To minimize the possibility of an accident during cask handling operations that would affect the health and safety of the public.

Specifications: During cask handling operations:

(1) The spent fuel cask shall not be moved into the spent fuel pit until all the spent fuel in the pit has decayed for a minimum of 1525 hours.**

(2) Only a single element cask may be moved into the spent fuel pit.

(3) A fuel assembly shall not be removed from the spent fuel pit in a shipping cask until it has decayed for a minimum of 120 days.*

---

* The Region 10 fuel which was in the Unit 3 reactor during the period of April 19, 1981, through April 24, 1981, may be removed from the Unit 3 spent fuel pit in a shipping cask after a minimum decay period of ninety-five (95) days.

** The spent fuel cask can be moved into the Unit 4 Spent Fuel Pit after a minimum decay of 1000 hours until the new two-region high density spent fuel racks are installed.

B3.12 BASES FOR LIMITING CONDITIONS FOR OPERATION, CASK HANDLING

Requiring spent fuel decay time to be a minimum of 1525 hours prior to moving a spent fuel cask into the spent fuel pit will keep potential offsite doses well within 10 CFR Part 100 limits should a dropped cask strike the stored fuel assemblies.

The restriction to allow only a single element cask to be moved into the spent fuel pit will ensure the maintenance of water inventory in the unlikely event of an uncontrolled cask descent. Use of a single element cask which nominally weighs about twenty-five tons will also increase crane safety margins by about a factor of four.

Requiring the spent fuel decay time be at least 120 days prior to moving a fuel assembly outside the fuel storage pit in a shipping cask will ensure that potential offsite doses are a fraction of 10 CFR 100 limits should a dropped cask and ruptured fuel assembly release activity directly to the atmosphere.

3.17 SPENT FUEL STORAGE

Applicability: Applies to limitations on the storage of spent fuel assemblies.

Objective: To minimize the possibility of exceeding the reactivity design limits for storage of spent fuel.

Specifications:

(1) Fuel assemblies containment more than 43.9 grams of U-235 per axial centimeter shall not be placed in the single region spent fuel stoage racks. After installation of the two-region high density spent fuel racks, the maximum loading for fuel assemblies in the spent fuel racks is 57.7 grams of U-235 per axial centimeter.

(2) The minimum boron concentration while fuel is stored in the Spent Fuel Pit shall be 1950 ppm.

(3)* Storage in Region II of the Spent Fuel Pit shall be further restricted by burnup and enrichment limits specified in Table 3.17-1.

(4)* During the re-racking operation only, fuel that does not meet the burnup requirements for normal storage in Region II may be stored in Region II in a checkerboard arrangement (i.e., no fuel stored in adjacent spaces).

---

* This Technical Specification is applicable only after installation of the new two-region high density spent fuel racks.

TABLE 3.17-1

SPENT FUEL BURNUP REQUIREMENTS FOR STORAGE IN REGION II OF THE SPENT FUEL PIT

Initial w/o	Discharge Burnup GWD/MT
1.5	0
1.75	5.0
2.0	9.0
2.2	12.0
2.4	14.8
2.6	17.6
2.8	20.1
3.0	22.6
3.2	25.0
3.4	27.4
3.6	29.6
3.8	31.8
4.0	34.0
4.2	36.1
4.5	39.0

Linear interpolation between two consecutive points will yield conservative results.

B3.17 BASES FOR LIMITING CONDITIONS FOR OPERATION, SPENT FUEL STORAGE

1. The spent fuel storage racks provide safe subcritical storage of fuel assemblies by providing sufficient center-to-center spacing or a combination of spacing and poison to assure k_{eff} is equal to or less than 0.95 for normal operations and postulated accidents.

2.* The spent fuel racks are divided into two regions. Region I racks have a 10.6 inch center-to-center spacing and the Region II racks have a 9.0 inch center-to-center spacing. Because of the larger center-to-center spacing and poison (B^{10}) concentration of Region I cells, the only restriction for placement of fuel is that the initial fuel loading is equal to or less than 57.7 grams of U-235 per axial centimeter of fuel assembly. This assures the fuel enrichment limit assumed in the spent fuel safety analyses will not be exceeded. Prior to placement in Region II cell locations, strict controls are employed to evaluate burnup of the spent fuel assembly. Upon determination that the fuel assembly meets the burnup requirements of Table 3.17-1, placement in a Region II cell is authorized. These positive controls assure the fuel enrichment limits assumed in the safety analyses will not be exceeded.

---

* This Technical Specification is applicable upon installation of the new two-region high density spent fuel racks.

TABLE 4.1-2 (Sheet 2 of 3)

MINIMUM FREQUENCIES FOR EQUIPMENT AND SAMPLING TESTS

	Check	Frequency	Max. Time Between Tests (Days)
5. Control Rods (cont'd)	Partial movement of full length rods	Biweekly while critical	20
6. Pressurizer Safety Valves	Set Point	Each refueling shutdown	NA
7. Main Steam Safety Valves	Set Point	Each refueling shutdown	NA
8. Containment Isolation Trip	Functioning	Each refueling shutdown	NA
9. Refueling System Interlocks	Functioning	Prior to each refueling	NA
10. Accumulator	Boron Concentration	At least once per 31 days and within 6 hours after each solution volume increase of $\geq$ 1% of tank volume.†	
11. Reactor Coolant System Leakage	Evaluate	Daily	-- NA
12. Diesel Fuel Supply	Fuel inventory	Weekly	10
13. Spent Fuel Pit	Boron Concentration	Monthly	45
14. Secondary Coolant	I-131 Concentration	Weekly*†	10
15. Vent Gas and Particulates	I-131 and Particulate Activity	Weekly*	10
16. Fire Protection Pump and Power Supply	Operable	Monthly	45
17. Turbine Stop and Control Valves, Reheater Stop and Intercept Valves	Closure	Monthly***	45
18. LP Turbine Rotor Inspector (w/o rotor disassembly)	V, MT, PT	Every 5 years	6 years
19. Spent Fuel Cask Crane Interlocks	Functioning	Within 7 days	7 days when crane is being used to maneuver spent fuel cask.

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 racks for new fuel storage are designed to store fuel in a safe subcritical array. The fuel is stored vertically in an array with sufficient center-to-center spacing to assure k_{eff} equal to or less than 0.95 for normal operations or accident conditions. Fuel containing more than 43.9 grams of U-235 per axial centimeter of fuel assembly shall not be placed in the New Fuel Storage Area.

3. Credit for burnup is taken in determining placement locations for spent fuel in the two-region spent fuel racks.* Strict administrative controls are employed to evaluate the burnup of each spent fuel assembly stored in areas where credit for burnup is taken. The burnup of spent fuel is ascertained by careful analysis of burnup history, prior to placement into the storage locations. Procedures shall require an independent check of the analysis of suitability for storage. A complete record of such analysis is kept for the time period that the spent fuel assembly remains in storage onsite.

---

* During rack installation, it will be necessary to temporarily store Region I fuel in the Region II spent fuel racks. Strict administrative controls will be utilized to maintain a checkerboard storage configuration, i.e., alternate cell occupation, in the Region II racks.

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 10 CFR 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 of significant safety hazards consideration factors with respect to the proposed amendments.

Background

The Turkey Point Plants were designed and constructed with two spent fuel storage pools, one associated with Unit 3 and one with Unit 4. These facilities had 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 & 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, respectively, 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 1976 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 Analysis
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 critciality 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 up to 621 storage positions in each spent fuel pool. With this application, FPL is requesting approval to rerack the Turkey Point spent fuel storage facilities to increase the storage capacity 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 does not exceed any of the three significant hazards consideration standards. The analysis of this proposed reracking has been accomplished using current accepted codes and standards as specified in Section 4.2 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.

(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 spent fuel assembly drop in the spent fuel pool.
2. Loss of spent fuel pool cooling system flow.

3. A seismic event.

4. A spent fuel cask drop.

5. A construction accident.

The probability of any of the first four accidents is not affected by the racks themselves; thus reracking cannot increase the probability of these accidents. As for the construction accident, FPL does not intend to carry any rack directly over the stored spent fuel assemblies. All work in the spent fuel pool area will be controlled and performed in strict accordance with specific written procedures. The spent fuel cask crane which will be used to access the spent fuel pool area has been addressed in FPL's response to the NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants". This response demonstrated Turkey Point Plant's compliance with Phase I of the NUREG 0612 criteria. In addition, the temporary construction crane which will be used to move racks within the spent fuel pool will meet the design and operation requirements of Section 5.1.1 of NUREG 0612. By letter dated November 1, 1983, the NRC concluded that the control of heavy loads program (Phase I) at the Turkey Point Plant was in compliance with the requirements of NUREG 0612. This program provides for the safe handling of heavy loads in the vicinity of the Spent Fuel Pool.

Accordingly, the proposed rerack will not involve a significant increase in the probability of an accident previously evaluated.

The consequences of (1) A spent fuel assembly drop in the spent fuel pool are discussed in the attached Safety Analysis Report. For this accident condition, the criticality acceptance criterion is not violated. The radiological consequences of a fuel assembly drop are not changed from that described in Chapter 14 of the Turkey Point Updated FSAR. The NRC also conducted an evaluation (as described in the Turkey Point SER dated 3/15/72) of the potential consequences of a fuel handling accident and found the calculated doses to be less than Part 100 guidelines. Thus, the consequences of this type accident will not be significantly increased from previously evaluated spent fuel assembly drops, and have been found acceptable by the NRC.

The consequences of (2) Loss of spent fuel pool cooling system flow, have been evaluated and are described in Section 3.0 of the Safety Analysis Report. As indicated in Section 3.0, there is sufficient time to provide an alternate means for cooling (i.e., the 100% capacity spare pump) in the event of a failure in the cooling system. Thus, the consequences of this type accident will not be significantly increased from previously evaluated loss of cooling system flow accidents. Additionally, the NRC has previously accepted this system design in the SER for the last rerack (dated 3/17/77).

The consequences of (3) A seismic event, have been evaluated and are described in Section 4.0 of the attached Safety Analysis Report. The new racks will be designed and fabricated to meet the requirements of applicable portions of the NRC Regulatory Guides and published standards

listed in Section 4.2 of the Safety Analysis Report. The method of support of the new racks remain the same as for the existing racks which are freestanding on embedments in the pool floor and able to transfer normal and shear loads to the Spent Fuel Building. The new racks are designed so that the floor loading from the racks filled with spent fuel assemblies does not exceed the structural capacity of the Spent Fuel Building. The Spent Fuel Building and pool structure have been designed in accordance with the criteria outlined in Section 5.2.2 and Appendix 5A of the Turkey Point Updated FSAR and previously accepted by the NRC. Thus, the consequences of a seismic event will not significantly increase from previously evaluated events.

The consequences of (4) A spent fuel cask drop have been evaluated as described in Sections 3.0 and 5.0 of the Safety Analysis Report. By limiting the decay time for all fuel in the pool to 1525 hours, the radiological consequences of the cask drop will be well within the guidelines of 10 CFR 100 and will be less than the consequences of the previous Accident Analysis. Analyses also demonstrate that Keff will always be less than the NRC acceptance criteria. Thus, the consequences of a cask drop accident will not be significantly increased from previously evaluated accident analysis.

The consequences of (5) A construction accident are enveloped by the spent fuel cask drop analysis described in Sections 3.0 and 5.0 of the Safety Analysis Report. In addition, all movements of heavy loads handled during the rerack operation will comply with the NRC guidelines presented in NUREG 0612, "Control of Heavy Loads at Nuclear Power Plants", as described in FPL's previous responses to the NRC, and as supplemented in Sections 3.0 and 4.0 of the attached Safety Analysis Report. Thus, the consequences of a construction accident will not be significantly increased from previously evaluated accident analysis.

Thus, it is concluded that the proposed amendment to rerack the spent fuel pools will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

FPL has evaluated the proposed reracking 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 4.2 of the attached Safety Analysis Report. In addition, FPL has reviewed several previous NRC Safety Evaluation Reports for rerack applications similar to our proposal. As a result of this evaluation and these reviews, FPL finds that the proposed reracking does not, in any way, create the possibilty of a new or different kind of accident from any accident previously evaluated for the Turkey Point Spent 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 a reracking modification, will need to address the following areas:

1. Nuclear criticality considerations

2. Thermal-Hydraulic considerations

3. Mechanical, material and structural considerations

The established acceptance criteria for criticality is that the neutron multiplication factor in spent fuel pools shall be less than or equal to 0.95, including all uncertainties, under all conditions. This margin of safety has been adhered to in the criticality analysis methods for the new rack design as discussed in Section 3.0 of the attached Safety Analysis Report.

The methods to be used in the criticality analysis conform with the applicable portions of the codes, standards, and specifications listed in Section 4.2 of the Safety Analysis Report. In meeting the acceptance criteria for criticality in the spent fuel pool, such that keff is always less than 0.95, including uncertainties at a 95/95 probability confidence level, the proposed amendment to rerack the spent fuel pools will not involve a significant reduction in the margin of safety for nuclear criticality.

Conservative methods are used to calculate the maximum fuel temperature and the increase in temperature of the water in the spent fuel pool. The thermal-hydraulic evaluation uses the methods described in Section 3.0 of the Safety Analysis Report in demonstrating the temperature margins of safety are maintained. The proposed reracking will allow an increase to the heat load in the spent fuel pool. The evaluation in Section 3.0 of the Safety Analysis Report shows that the existing spent fuel cooling system will maintain the pool temperature margins of safety for the calculated increase in pool heat load. Thus, there is no significant reduction in the margin of safety for thermal-hydraulic or spent fuel cooling concern.

The main safety function of the spent fuel pool and the racks is to maintain the spent fuel assemblies in a safe configuration through all normal and abnormal loadings, such as an earthquake, impact due to a spent fuel cask drop, drop of a spent fuel assembly, or drop of any other heavy object. The mechanical, material, and structural considerations of the proposed rerack are described in Section 4.0 of the attached Safety Analysis Report. As described in Section 4.0 of the Safety Analysis Report, the proposed racks are to be designed in accordance with applicable portions of the "NRC Position for Review and Acceptance of Spent Fuel Storage and Handling Applications", dated April 14, 1978, as modified January 18, 1979; Standard Review Plan 3.8.4; and the Turkey Point Updated FSAR Appendix 5A (as discussed in Section 4.0 of the Safety Analysis Report). The rack materials used are compatible with the spent fuel pool and the spent fuel assemblies. The structural considerations of the new racks address margins of safety against tilting and deflection or movement, such that the racks do not impact each other or the pool walls, damage spent fuel assemblies, or cause criticality concerns. Thus, the margins of safety are not significantly reduced by the proposed rerack.

In summation, it has been shown that the proposed spent fuel storage facility modifications do 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.

In addition, the proposed amendment fits within the following examples provided in the Federal Register's Interim Final Rule publication:

(ii) (a) A change that constitutes an additional limitation, restriction, or control not presently included in the technical specifications.

(b) This amendment increases the time restrictions on cask movement and adds additional restrictions on spent fuel pit boron concentrations.

(vi) (a) A change which either may result in some increase to the probability or consequences of a previously analyzed accident or may reduce in some way a safety margin, but where the results of the change are clearly within all acceptable criteria.

(b) The change will not increase the offsite dose due to any analyzed accident, or result in any loss of safety in the plant or plant operations. The details of the analyses are presented in the attached Safety Analyses.

STATE OF FLORIDA)
) ss.
COUNTY OF DADE)

J. W. Williams, Jr., being first duly sworn, deposes and says:

That he is a Vice President of Florida Power & Light Company, the Licensee herein;

That he has executed the foregoing document; that the statements made in this document are true and correct to the best of his knowledge, information, and belief, and that he is authorized to execute the document on behalf of said Licensee.

J. W. Williams, Jr.

Subscribed and sworn to before me this 14th day of March, 1984.

NOTARY PUBLIC, in and for the County of Dade, State of Florida.

My commission expires: _____

NOTARY PUBLIC STATE OF FLORIDA AT LARGE
MY COMMISSION EXPIRES DEC 8 1984
BONDED THRU GENERAL INS. UNDERWRITERS