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 FACIL: 50-389 St. Lucie Plant, Unit 2, Florida Power & Light Co.
 AUTH. NAME: WOODY, C. O. AUTHOR AFFILIATION: Florida Power & Light Co.
 RECIP. NAME: THADANI, A. C. RECIPIENT AFFILIATION: PWR Project Directorate 8

DOCKET # 05000389

SUBJECT: Application for amend to License NPF-16, establishing option of transferring spent fuel from Unit 1 to Unit 2. Safety evaluation/NSHC encl. Fee paid.

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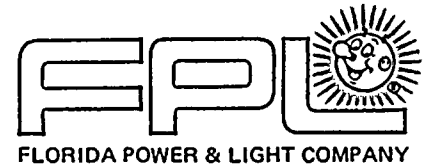
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L-86-250

Office of Nuclear Reactor Regulation
Attention: Mr. Ashok C. Thadani, Director
PWR Project Directorate #8
Division of PWR Licensing - B
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Thadani:

Re: St. Lucie Unit 2
Docket No. 50-389
Proposed License Amendment
Spent Fuel Transfer

In accordance with 10 CFR 50.90 Florida Power & Light Company (FPL) submits three (3) signed originals and forty (40) copies of a request to amend Facility Operating License NPF-16.

The proposal is to revise Section 2.B.5 of NPF-16 to read (revised portion underlined):

"Pursuant to the Act and 10 CFR Parts 30, 40, and 70, FP&L to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of St. Lucie Units 1 and 2."

This proposal is being submitted to establish the option of transferring spent fuel from St. Lucie Unit 1 to St. Lucie Unit 2. The Unit 1 spent fuel pool will lose full core reserve capacity as a result of the 1987 refueling outage, and the planned rerack of the spent fuel pool cannot be accomplished prior to 1988. If, in the interim, full core off-load of Unit 1 should be necessary, available storage in the Unit 2 spent fuel pool will be required. A separate license amendment is planned for 1987 to support the Unit 1 reracking effort. The details of fuel transfer between the units are discussed in the attached "Safety Evaluation/No Significant Hazards Consideration" determination.

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w/ check \$150.00
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770-235

Mr. Ashok C. Thadani, Director
L-86-250
Page two

The proposed amendment has been reviewed by the St. Lucie Facility Review Group and the Florida Power & Light Company Nuclear Review Board.

A copy of the proposed amendment is being forwarded to the state designee for the State of Florida, in accordance with 10 CFR 50.91 (b)(1). FPL Check No. 1664 is attached as remittance for the fee specified in 10 CFR 170.21.

Very truly yours,


C. O. Woody
Group Vice President
Nuclear Energy

COW/MAS/gp

Attachments

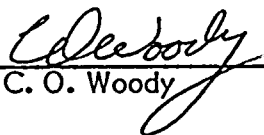
cc: Dr. J. Nelson Grace, USNRC, Region II
Mr. Allan Schubert, Florida Department of Health & Rehabilitative Services
Harold F. Reis, Esquire, Newman & Holtzinger

STATE OF FLORIDA)
) ss.
COUNTY OF DADE)

C. O. Woody being first duly sworn, deposes and says:

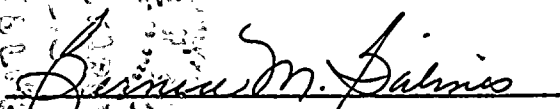
That he is a Group Vice President of Florida Power & Light Company, the Licensee herein;

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.


C. O. Woody

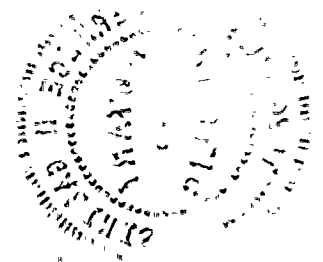
Subscribed and sworn to before me this

2 day of July, 1986.



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

NOTARY PUBLIC STATE OF FLORIDA
MY COMMISSION EXP SEPT 18, 1989
BONDED THRU GENERAL INS. UND.
My Commission expires: _____



SAFETY EVALUATION/NO SIGNIFICANT HAZARDS CONSIDERATION

I. SAFETY EVALUATION

I. INTRODUCTION:

Florida Power & Light Company (FPL) is requesting an amendment to Facility Operating License NPF-16 to permit St. Lucie Unit 2 to possess byproduct and special nuclear material produced by the operation of St. Lucie Unit 1. The proposed change would allow the transfer of spent fuel assemblies from the Unit 1 to the Unit 2 spent fuel pool.

Condition 2.B.5 of the Unit 2 license presently allows FPL to "possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility". The term "facility" refers to the applicable unit. The possession by Unit 2 of byproduct and special nuclear material produced by operation of Unit 1, is, therefore, not specifically addressed in the Unit 2 license at the present time.

FPL is requesting this license amendment to establish the option of storing spent fuel assemblies from Unit 1 in the Unit 2 spent fuel pool. The Unit 1 spent fuel pool will lose full core reserve capacity as a result of the 1987 refueling outage, and the planned rerack of the Unit 1 spent fuel pool is not scheduled until sometime in 1988. If, in the interim, full core off-load of Unit 1 should be required, this change will allow storage of Unit 1 fuel in the Unit 2 spent fuel pool.

2. DISCUSSION:

2.1 Fuel Assembly Design

St. Lucie Unit 1 is currently in its seventh cycle of operation. The initial cycle through Cycle 5 used fuel elements manufactured by Combustion Engineering, Inc. (CE). Fuel elements manufactured by Exxon Nuclear Company, Inc. (ENC) were introduced in Cycle 6, thus Cycle 6 had (and Cycle 7 has) a mixture of CE and ENC fuel. Cycle 8 is scheduled to operate with ENC fuel only.

Section 4.2 of the Unit 1 Final Safety Analysis Report (FSAR) describes the mechanical design of Unit 1 fuel manufactured by CE. References 1 and 2 describe the mechanical design of Unit 1 fuel manufactured by ENC, which is essentially the same as the mechanical design of CE fuel. The use of ENC fuel at St. Lucie Unit 1 was approved by the NRC in Reference 3.

St. Lucie Unit 2 has completed two cycles of operation. Section 4.2.2 of the Unit 2 FSAR describes the mechanical design of Unit 2 fuel, which is manufactured by CE.

The basic mechanical design parameters of Unit 1 and Unit 2 fuel assemblies are shown for comparison purposes in Table 1.

2.2 Spent Fuel Pool Design

For St. Lucie Unit 1, the spent fuel pool is described and evaluated in Section 9.1.2 of the Unit 1 FSAR. The fuel handling system is described and evaluated in FSAR Section 9.1.4. Fuel handling accidents and cask drop accidents are evaluated in FSAR Sections 15.4.3 and 9.1.4, respectively.

For St. Lucie Unit 2, the spent fuel pool is described and evaluated in Section 9.1.2 of the Unit 2 FSAR. The fuel handling system is described and evaluated in FSAR Section 9.1.4. Fuel handling accidents and cask drop accidents are evaluated in FSAR Sections 15.7.4.1.2 and 15.7.4.1.3, respectively.

The proposed license amendment does not alter the type or amount of reactor fuel which can be received, used, and possessed at the site for operation of both St. Lucie units. The amount of reactor fuel that may be stored in the Unit 2 spent fuel pool, and the manner in which it may be stored and handled, will not be altered by the proposed change since the limitations for fuel storage and handling remain governed by the analyses described in the FSAR. Storage of Unit 1 spent fuel in the Unit 2 spent fuel pool will not result in any condition for which the pool is not designed. The assemblies stored in each pool have similar fuel enrichments and burnup histories. Also, as stated in Reference 4, the Unit 2 spent fuel racks have been designed to accommodate storage of Unit 1 fuel. The Unit 2 racks were approved by the NRC in Reference 5.

2.3 Spent Fuel Transfer

Spent fuel from Unit 1 will be transferred to the Unit 2 spent fuel pool in a fuel shipping cask having a nominal weight of 25 tons or less when loaded. This conforms with Unit 1 Technical Specification 3.9.13, which limits the load that may be handled by the spent fuel cask crane to a maximum of 25 tons. The corresponding limit for the Unit 2 crane (Unit 2 Technical Specification 3.9.12) is 100 tons.

The process will begin with the spent fuel handling machine transferring the assemblies underwater from the spent fuel racks to the spent fuel shipping cask. The cask is designed such that fuel assemblies are placed in the cask while still maintaining the minimum water level above the fuel assemblies. After the cask is loaded with an assembly, it is prepared for transport. Controls will be in effect to reduce possible spread of contamination. The crane then loads the spent fuel shipping cask onto the transport vehicle for travel to Unit 2.

2.4 Safe Load Path Evaluation

The load path for transporting the shipping cask between the Unit 1 and Unit 2 fuel handling buildings is shown in Figure 1. This load path has been evaluated and has been found to provide a safe path for transport of the spent fuel.

Two transporter vehicles were considered in the load path evaluation. The maximum wheel loads for each of these transporters were found to be acceptable considering the effects on all surfaces including the roadway, missile protection slabs, and underground facilities (i.e., pipes, electric conduit, manholes, and catch basins).

3. ENVIRONMENTAL CONSIDERATION

The proposed amendment does not authorize a change in the types or total amounts of effluents. No change in power level of either Unit will occur under the proposed amendment. Therefore, no significant environmental impact is anticipated.

II. NO SIGNIFICANT HAZARDS CONSIDERATION

The Commission has provided standards for determining whether a significant hazards consideration exists (10 CFR 50.92(c)). A proposed amendment to an operating license for the facility involves no significant hazards consideration if 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.

- (1) This amendment will not significantly increase the probability or consequences of an accident previously evaluated, since the configuration and operation of the plant will remain essentially the same. The only thing that will change is that a certain number of Unit 1 spent fuel assemblies may be transferred from the Unit 1 spent fuel pool to the Unit 2 spent fuel pool. The designs of the two pools, and the associated operating and accident analysis assumptions, are not changed. The Unit 1 assemblies that may be transferred have essentially the same mechanical design (size), enrichments, and burnup histories as evaluated in the Unit 2 FSAR for Unit 2 fuel assemblies. As stated in Reference 4, the Unit 2 spent fuel racks are designed to accommodate storage of the Unit 1 fuel.
- (2) This amendment will not create the possibility of a new or different kind of accident from any previously evaluated, since this change does not modify the configuration or operation of the plant. A spent fuel shipping cask that meets the packaging and transportation requirements of 10 CFR 71 will be used to transfer spent fuel assemblies between the Unit 1 and Unit 2 fuel handling buildings. Potential fuel handling and cask drop accidents are evaluated in both FSARs, including the potential drop of a cask outside the fuel handling building. The load handling and transport of the spent fuel are enveloped by previous analyses.

- (3) This amendment will not involve a significant reduction in the margin of safety. In all cases, the FSAR accident analyses results bound the evolutions contemplated by this amendment.

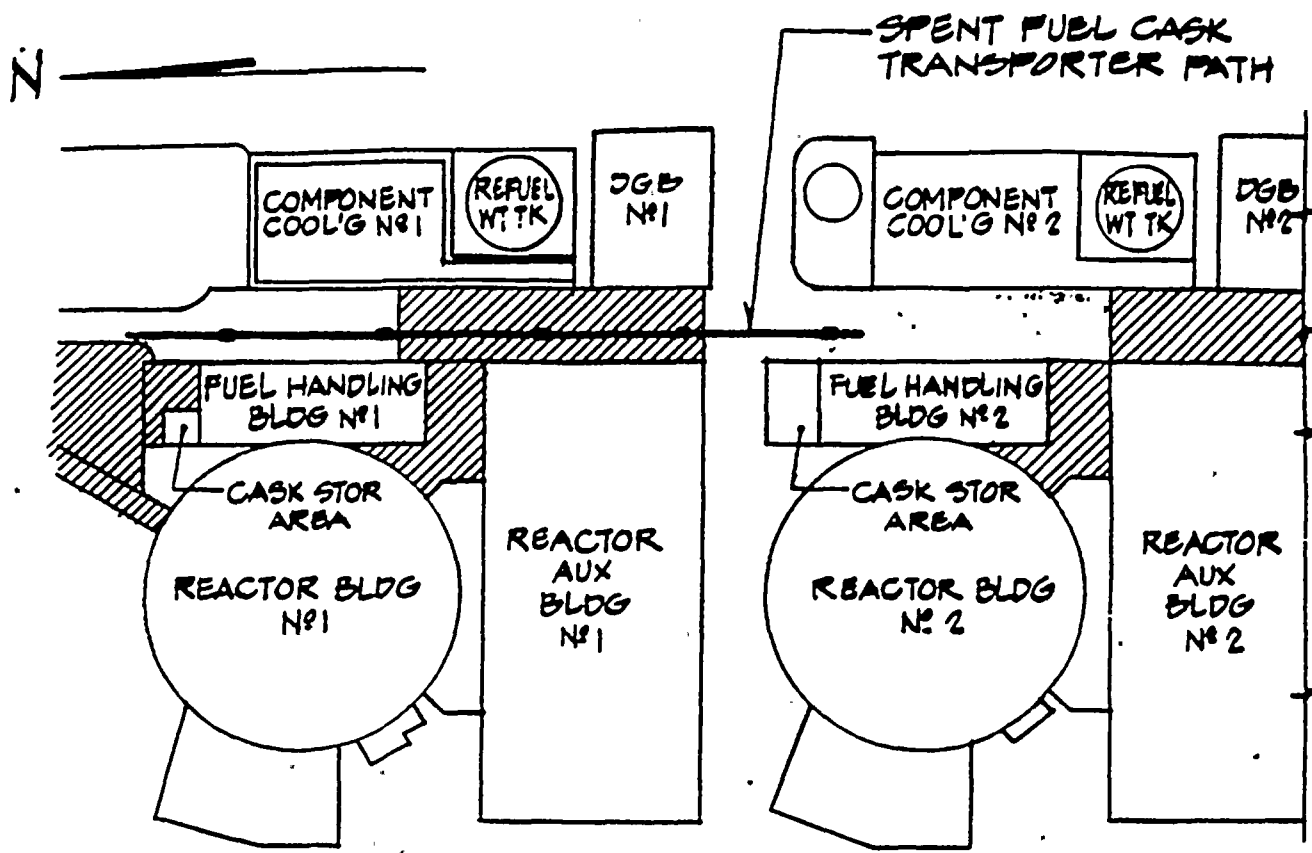
Therefore, on the basis of the above discussion, operation of St. Lucie Unit 2 in accordance with the proposed amendment would pose no threat to the public health and welfare, and would not involve a significant hazards consideration.

REFERENCES

1. XN-NF-82-09, "Generic Mechanical Design Report Exxon Nuclear 14 x 14 Fuel Assemblies for Combustion Engineering Reactors," November 1982.
2. XN-NF-82-97, "St. Lucie Unit 1 Addendum to 'Generic Mechanical Design Report Exxon Nuclear 14 x 14 Fuel Assemblies for Combustion Engineering Reactors,' " December 1982.
3. Letter from James R. Miller (NRC) to J. W. Williams, Jr. (FPL), Amendment No. 63 to Facility Operating License DPR-67 for St. Lucie Unit 1, March 1, 1984.
4. Letter L-84-47 from J. W. Williams, Jr. (FPL) to D. G. Eisenhower (NRC), "St. Lucie Unit No. 2, Docket No. 50-389, Proposed License Amendment, Spent Fuel Pool Rerack," March 13, 1984.
5. Letter from D. E. Sells (NRC) to J. W. Williams, Jr. (FPL), Amendment No. 7 to Facility Operating License NPF-16 for St. Lucie Unit 2, October 16, 1984.

TABLE I
FUEL ASSEMBLY
MECHANICAL DESIGN PARAMETERS

<u>Parameter</u>	<u>Unit 1</u>	<u>Unit 2</u>
Fuel Rod Array (square)	14 x 14	16 x 16
Fuel Rod Pitch (inches)	0.580	0.506
Weight (lb)	1220-1280	1303
Outside Dimensions - Fuel Rod to Fuel Rod (inches)	7.980 x 7.980	7.972 x 7.972



UNIT N° 1 & 2 - PARTIAL SITE PLAN

LEGEND

- DENOTES ASPHALTIC CONCRETE ROADS & PAVING
- DENOTES PORTLAND CEMENT CONCRETE PAVED AREAS

FIGURE 1