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SUBJECT: Clarifies apparent deficiency perceived by ASLB in 870116 order re GDC 5 concerning spent fuel transfer. GDC 5 assures that accident at one unit will not significantly impair ability of structure to perform function for other units.

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FPL

FEBRUARY 6 1987

L-87-49

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Gentlemen:

Re: St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
Spent Fuel Transfer - GDC 5 Applicability

By letter L-86-250, dated July 2, 1986, Florida Power & Light Company (FPL) proposed to amend the St. Lucie Unit 2 operating license NPF-16 to establish the option of storing spent fuel from St. Lucie Unit 1 in the St. Lucie 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 Unit 1 spent fuel pool rerack cannot be accomplished prior to 1988. If, in the interim, full core off-load of Unit 1 should be necessary, Unit 1 spent fuel could be stored in the Unit 2 spent fuel pool.

An Atomic Safety and License Board (ASLB) (ASLBP No. 87-544-01-LA) was established on November 20, 1986 to rule on petitions for leave to intervene and/or requests for hearing and to preside over the proceedings in the event that a hearing was ordered on the above proposed amendment to the St. Lucie Unit 2 operating license. In its MEMORANDUM AND ORDER (Dismissing Hearing Request), dated January 16, 1987, the ASLB stated:

> We are still of the opinion that, as a predicate to the proposed amendment, the Applicants should submit an analysis of the facility's conformance to GDC 5 and the Staff should evaluate that analysis in its SER for the amendment. We are declining, however, to raise this issue pursuant to 10 C.F.R. §2.760a. We have no basis for finding, within the terms of that section, that "a serious safety, environmental, or common defense and security matter exists." The deficiency we perceive is one of analysis and evaluation, not of safety. Moreover, we are not aware of any information which would suggest that the facility would fail to meet the requirements of GDC 5.

To clarify the apparent deficiency perceived by the ASLB, FPL would like to address GDC 5 as it relates to the proposed amendment.

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GDC 5 states as follows:

> Sharing of structures, systems, and components.
>
> Structures, systems, and components important to safety shall not be shared among nuclear power units unless it can be shown that such sharing will not significantly impair their ability to perform their safety functions, including, in the event of an accident in one unit, an orderly shutdown and cooldown of the remaining units.

GDC 5 only applies to situations in which a single structure, system, or component performs a safety function for more than one unit. In general, the purpose of GDC 5 is to assure that an accident at one unit will not significantly impair the ability of the structure, system, or component to perform its safety function for the other units. For example:

- Regulatory Guide 1.81 states that, for plants with construction permit applications submitted prior to June 1, 1973, it is acceptable for a two unit site to share a single onsite emergency and shutdown a.c. electrical system provided, inter alia, that a single failure in the system in conjunction with the loss of offsite power would "not preclude the capability to automatically supply minimum engineered safety feature (ESF) loads in any one unit and safely shutdown the remaining unit."

- Regulatory Guide 1.27 states that it is acceptable for multiple units to share a single ultimate heat sink provided that the sink is capable of providing sufficient cooling for (1) simultaneous safe shutdown and cooldown of all units, or (2) an accident in one unit and the safe shutdown of the remaining units.

GDC 5 does not apply to situations in which a structure, system, or component is not being "shared" by more than one unit; i.e., where a structure, system, or component is not designed to perform a safety function for more than one unit at the same time.

Currently, St. Lucie Units 1 and 2 do not share any structure, system, or component which performs a safety function associated with storage of spent fuel. For example, each unit has its own spent fuel pool, its own spent fuel pool cooling system, and its own spent fuel pool purification system. (See Final Safety Analysis Report (FSAR) for St. Lucie Plant Unit 2, Sections 3.1.5 and 9.1). Thus, as ASLB noted in its letter of December 9, 1986, the Safety Evaluation Report (SER) related to the operation of St. Lucie Plant, Unit 2 (October 1981), p. 9-3, states:

> There is no sharing of the spent fuel storage facility between St. Lucie Units 1 and 2. Thus, the requirements of General Design Criterion 5, "Sharing of Structures, Systems and Components," which concerns the capability to maintain safe operation of two units when essential systems are shared, are not applicable.

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The design of the structures, systems, and components of St. Lucie Unit 2 will not be changed as a result of issuance of the Spent Fuel Transfer Amendment. Therefore, following issuance of the Amendment, St. Lucie Units 1 and 2 will not share any structure, system, or component which performs a safety function associated with storage of spent fuel at St. Lucie. Consequently, GDC 5 does not apply to the St. Lucie Spent Fuel Transfer Amendment, and the statement quoted above from the SER will remain valid after issuance of the Amendment.

In this regard, it may be noted that a spent fuel assembly which is transferred from one unit to another unit is not, in and of itself, subject to GDC 5. The only safety function performed by a spent fuel assembly is the containment of fission products and other radioactive material within the fuel cladding, and a spent fuel assembly does not perform any function related to operation of a nuclear plant. Thus, by its very nature, the safety function performed by a spent fuel assembly is internal to the assembly itself and cannot be "shared" among units. Consequently, GDC 5 is not applicable to a spent fuel assembly.

Similarly, a spent fuel pool which stores spent fuel generated by several units is not, in and of itself, subject to GDC 5. Although the spent fuel pool in such a case would be performing a safety function related to storage of spent fuel from several units, it would not be performing a safety function related to the safe operation of several units. Consequently, the spent fuel pool would not be a "shared" structure and therefore GDC 5 would not be applicable.

Although GDC 5 is not applicable to a spent fuel pool which stores spent fuel from several units, this does not mean that such storage is devoid of any safety considerations. In this regard, it may be noted that FPL's application of July 2, 1986, does address the safety implications of storing spent fuel generated by St. Lucie Unit 1 in the St. Lucie Unit 2 spent fuel pool. (See Safety Evaluation/No Significant Hazards Consideration attached to FPL's letter dated July 2, 1986). As this evaluation demonstrates, the spent fuel assemblies from St. Lucie Unit 1 "have essentially the same mechanical design (size), enrichments, and burnup histories" as those evaluated in the FSAR for Unit 2. Consequently, storage of spent fuel assemblies from Unit 1 in the Unit 2 spent fuel pool will not adversely affect the health and safety of the public.

FPL believes that the foregoing explanation addresses satisfactorily the Board's concern regarding the application of GDC 5 to the St. Lucie Spent Fuel Transfer Amendment.

Very truly yours,

C. O. Woody
Group Vice President
Nuclear Energy

COW/EJW/cab

cc: Dr. J. Nelson Grace, Region II, USNRC
USNRC Resident Inspector, St. Lucie Plant