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SUBJECT: Forwards response to NRC 870204 request for addl info re ' util 860228 request to extend date of expiration of OL so that 40-yr term of license begins w/issuance of OL rather than date of issuance of CP.

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FLORIDA POWER & LIGHT COMPANY

APRIL 15 1987

L-87-168

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

Gentlemen:

Re: St. Lucie Unit I Docket No. 50-335 Operating License Expiration Date

By letter L-86-66, dated February 28, 1986, Florida Power & Light Company (FPL) proposed to extend the date of expiration of the St. Lucie Unit 1 operating license so that the forty year term of the license begins with the issuance of the operating license rather than the date of issuance of the construction permit. The expiration date of the operating license of St. Lucie Unit 1 would be changed from July 1, 2010 to March 1, 2016.

By letter dated February 4, 1987 (E. G. Tourigny to C. O. Woody), the NRC identified additional information required to continue its review of the proposed license amendment. The attached responds to the staff's request for additional information.

Please contact us if you have any questions about this submittal.

Very truly yours,

C. O. Woody

Group Vice President Nuclear Energy

COW/EJW/gp

Attachment

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

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## REQUEST FOR ADDITIONAL INFORMATION LICENSE EXTENSION FOR ST. LUCIE UNIT I

Provide information concerning the requirements set forth in 10 CFR 51.52, "Environmental Effects of Transportation of Fuel and Waste" - Table S-4 regarding transportation of fuel and radioactive wastes to and from the site. Include a statement or a commitment which confirms that you will meet the transportation conditions of either Paragraph (a) or (b) of 10 CFR 51.52.

## Response

As discussed in 10 CFR 51.52, environmental reports prepared for construction permits for light-water-cooled reactors submitted after February 4, 1975 are required to contain a statement concerning transportation of fuel and radioactive wastes to and from the reactor. FPL submitted its application for a construction permit for St. Lucie Unit 1 in January 1969. The staff's Final Environmental Statement related to the operation of St. Lucie Unit 1 was issued in June 1973. The following information is provided concerning 10 CFR 51.52.

- 1) The current reactor core thermal power for St. Lucie Unit 1 is 2700 megawatts.
- 2) The current maximum enrichment in Uranium 235 for the St. Lucie Unit I fuel assemblies is 4.0 weight percent.
- 3) The current average level of irradiation of the St. Lucie Unit I fuel assemblies is less than 42,000 megawatt-days per metric ton (MWD/MTU) and the cooling period after it is discharged from the reactor prior to transportation will be at least 120 days.

Although the average burnup level of the St. Lucie Unit 1 fuel assemblies exceeds the value in 10 CFR 51 §51.52(a)(3), the additional cooling period before shipment reduces the significance of the higher average burnup. Based on the current progress in the development of a high level waste repository, most fuel assemblies will have decayed for several years prior to transportation. The effective levels of radioactivity of a fuel assembly with an average burnup of 42,000 MWD/MTU that has cooled several years can be shown to be less than a fuel assembly with an average burnup of 33,000 MWD/MTU that has cooled for 90 days.

- 4) The irradiated fuel assemblies will be shipped from the reactor either by truck, rail, or barge.
- 5) The Final Environmental Statement (FES) for St. Lucie Unit 1 assumed a core reload (i.e. 72 fuel elements per the FES) each year during normal operation. By February 1987, St. Lucie Unit 1 had completed seven (7) fuel cycles which leads to an average fuel cycle of over 17 months. Although 10 CFR § 51.52 assumes an average fuel assembly burnup of 33,000 MWD/MTU, the long length of time after discharge from the reactor prior to transportation compensates for the higher burnup.

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6) The transportation of radioactive material is regulated by the Department of Transportation and the Nuclear Regulatory Commission. The regulations provide protection of the public and transport workers from radiation. This protection is achieved by a combination of standards and requirements applicable to packaging, limitations on the contents of packages and radiation levels from packages and procedures to limit the exposure of persons under normal and accident conditions.

Primary reliance for safety in transport of radioactive material is placed on the packaging. The packaging must meet regulatory standards (10 CFR 71 and 49 CFR 173 and 178) established according to the type and form of material for containment, shielding, nuclear criticality safety and heat dissipation. The standards provide that the packaging shall prevent the loss or dispersal of the radioactive contents, retain shielding efficiency, assure nuclear criticality safety, and provide adequate heat dissipation under normal conditions of transport and under specified accident damage test conditions. The contents of packages not designed to withstand accidents are limited, thereby limiting the risk from releases which could occur in an accident. The contents of the package also must be limited so that the standards for external radiation levels, temperature, pressure, and containment are met.

Based on the above, FPL concludes that the environmental impacts attributable to transportation of fuel and waste to and from the St. Lucie Unit I site, with respect to normal conditions of transport and possible accidents in transport, is in accordance with the impacts set forth in Table S-4 of 10 CFR 51.52. These environmental costs will not be altered by the revised period of operation.

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