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U.S. NUCLEAR REGULATORY COMMISSION

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TO: V. Stello

FROM: Flordia Power & Light Co.
Miami, Flordia
R.E. Uhrig

DATE OF DOCUMENT 7-8-76

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DESCRIPTION
Ltr: re. their 6-23-76 ltr.....
Supplemental Information concerning the transfer of spent fuel between Unit # 3 & 4.....

(1 Signed Cy. REceiveD)
(3 Pages)

ENCLOSURE

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ACKNOWLEDGED

PLANT NAME: Turkey Pt. # 3 & 4

SAFETY FOR ACTION/INFORMATION ENVIRO SAB 7-15-76

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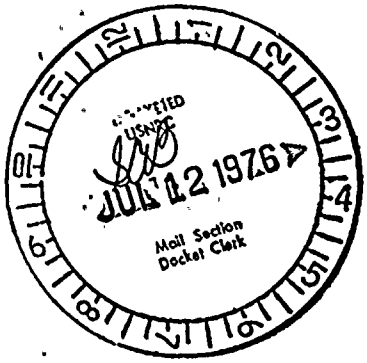
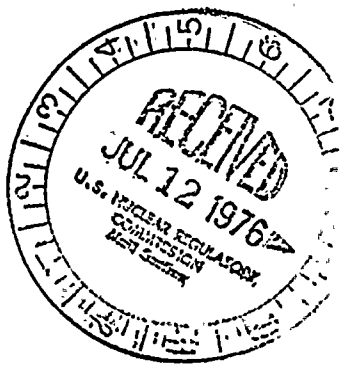


Regulatory File Cy

FLORIDA POWER & LIGHT COMPANY

July 8, 1976
L-76-248

Office of Nuclear Reactor Regulation
Attn: Mr. Victor Stello, Jr., Director
Division of Operating Reactors
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555



Dear Mr. Stello:

Re: Turkey Point Plant - Unit Nos. 3 and 4
Docket Nos. 50-250 and 50-251
Supplemental Information

Our letter to you dated June 23, 1976 (L-76-234) forwarded information concerning the transfer of spent fuel between Turkey Point Units 3 and 4. This letter provides supplemental information, and documents the results of recent discussions with members of your staff.

In order to preclude vertical movement of the cask during the transfer between Units 3 and 4, control power to the hoist will be de-energized while the cask is in the alley between the units. This requirement has been incorporated into our Turkey Point operating procedures.

In our June 23, 1976 letter, we estimated that it would be necessary to transfer some fuel assemblies after about 90 days of decay. Due to the delays in initiating the transfer operation, all of the fuel assemblies will have decayed at least 120 days prior to being transferred. Our calculations show that 120 days of decay ensures that all assemblies have a decay heat of less than 10.6 KW. The Turkey Point Unit No. 4 (cycle 2) calculated maximum assembly decay heat load is 8.95 KW after 120 days decay. The calculation is based on the ANS decay heat curves (Draft of Proposed Standard Decay Energy Release Rates Following Shutdown of Uranium - Fueled Thermal Reactors, October 1971) with the adjustment applied for a finite operating time. The calculation also includes a calculated factor of 1.05 to account for the relative power distribution among assemblies while they were in the reactor. An 18% margin exists between the calculated decay heat load and 10.6 KW which is the design thermal rating for the spent fuel cask. The calculation contains some added conservatism in that the cycle 1 effect does not consider that the reactor was shut down for slightly more than two months for the refueling between cycle 1 and cycle 2. The above notwithstanding

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the heatup rate of the cask with one of the 40 least decayed spent fuel assemblies will still be determined prior to transferring any of these assemblies as indicated in our June 23, 1976, letter.

In addition to reducing the decay heat of the fuel assemblies, the additional decay time (minimum of 2880 hours) will significantly reduce the radiological inventory of the spent fuel, thereby further reducing the already acceptable consequences of a postulated fuel handling accident. With the assumptions provided in Table 5 of our June 23, 1976, letter and deleting the pool DF of 100 and with 2000 hours of decay, the potential offsite radiological consequences of a rupture of one fuel assembly outside of the spent fuel pool is 1.6 rem thyroid and 0.0003 rem whole body. The cask is designed for dry transfer. Thus, loss of water from the cask is not expected to result in unacceptable damage to the fuel element. However, even if a TID-14844 release were assumed, the resulting site boundary dose would be less than the 17 rem thyroid and the 2 rem whole body found acceptable by the Staff in its Safety Evaluation Report. Since the spent fuel will have a minimum of 2880 hours decay prior to transfer, the potential site boundary dose associated with mishaps in transfer, is significantly less than the values found acceptable by the Staff.

An uncontrolled descent of the cask of approximately 41 feet can be postulated. The probability of such an event is small since the cask is at the height of 41 feet only briefly after crossing the lip of the fuel pool prior to being lowered to the transfer height of less than 12 inches above grade. Assuming that such an event did occur, we expect that the cask would remain structurally intact, i.e., unacceptable damage is not anticipated. We also expect the cask shielding to remain essentially intact. The cask is designed to meet the rigorous requirements of 10 CFR 71, including an uncontrolled descent of 30 feet onto an unyielding surface. In our judgment, the actual conditions surrounding our intended use of the cask, including the postulated uncontrolled descent of 41 feet, are not significantly more severe than the requirements of 10 CFR 71. Even if the loss of cask integrity did occur, the radiological consequences associated with this postulated event are less than previously found acceptable by the Staff,

and, therefore, further analysis of this event is not required.

Very truly yours,

for Robert E. Uhrig
Vice President

REU/GDW/hlc

cc: Norman C. Moseley, Region II
Jack R. Newman, Esq.