REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8502060153 DOC.DATE: 85/02/01 NOTARIZED: NO DOCKET #
FACIL:50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250
50-251 Turkey Point Plant, Unit 4, Florida Power and Light C 05000251
AUTH.NAME AUTHOR AFFILIATION
WILLIAMS,J.W. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
VARGA,S.A. Operating Reactors Branch 1

SUBJECT: Discusses Westinghouse reanalysis of proposed expansion of spent fuel storage facilities.Applicable requirements of OT position paper met w/o any controls.

DISTRIBUTION CODE: A001D COPIES RECEIVED:LTR 1 ENCL 0 SIZE: 3
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NOTES: 05000250
OL:07/19/72
05000251
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	NRR/DSI/RAB		1	1	REG FILE	04	1	1
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FLORIDA POWER & LIGHT COMPANY

FEB 11 1985

L-85-30

Office of Nuclear Reactor Regulation
Attention: Mr. Steven A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20055

Dear Mr. Varga:

Re: Turkey Point Units 3 & 4
Docket Nos. 50-250 & 50-251
Spent Fuel Storage Facility Expansion

In support of the FPL request to amend the facility operating licenses to permit expansion of the spent fuel storage facilities at Turkey Point Units 3 and 4, the rack vendor (Westinghouse) analyzed the spent fuel storage racks for overturning and sliding displacements due to earthquake loading for the cases of full, partially filled and empty fuel racks. The analysis results met and exceeded the stability criteria of the NRC "OT Position for Review and Acceptance of Spent Fuel Storage and Handling Applications." The results showed that the racks did not lift off the spent fuel pit embedment plates under seismic event conditions. This information was provided to you in FPL letter L-84-263, dated September 28, 1984.

Thereafter, in a letter dated October 19, 1984, Westinghouse informed FPL that administrative controls on fuel loading would be needed for those spent fuel racks whose outer rows overhang the support pads. Westinghouse stated that lifting of a rack could occur during a seismic event if the outer rows are fully loaded while the rest of the rack remains empty. Six (6) Region II racks with a one row overhang, one (1) Region I rack with a one row overhang and one (1) Region I rack with a two row overhang are affected.

Although not indicated in their October 19th letter, these controls were required to be consistent with an assumption made by Westinghouse in its analysis (i.e., that the overhanging rows would not be loaded while the rest of the rack was empty). Neither the preliminary seismic/structural analysis report nor the basis provided by Westinghouse for FPL's September 28th letter specified this assumption or identified the need for administrative controls. Consequently, at an October 24, 1984 meeting, FPL requested that Westinghouse provide clarification regarding the basis for its recommendations for controls. Westinghouse responded in a letter dated November 16, 1984 and received by FPL on November 27, 1984.

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After review of the November 16th letter, and additional discussions with Westinghouse, FPL directed Westinghouse to reanalyze the affected rack modules with the assumption that overhanging rows are loaded while the remaining rows of the racks remain empty. Preliminary results of the reanalysis, which showed liftoff could occur during a seismic event, were discussed with Mr. D. G. McDonald on December 19, 1984. By letter dated January 10, 1985, Westinghouse provided FPL with the final verified results of the reanalysis.

The reanalysis shows that the applicable requirements of the OT position paper are met without any controls. The worst case loadings are 3 outboard rows (2 overhang rows plus the row above support pads) for a Region I module and 2 outboard rows (1 overhang row plus the row above support pads) for a Region II module while the rest of the module remains empty. For these loadings a more than adequate factor of safety against overturn is maintained. The following summarizes the results of the analysis:

- The factor of safety against overturn is 8 for Region I and 220 for Region II, with support pad liftoff of 0.18 inch and 0.01 inch, respectively, during a seismic event.

- The rack support pads will not slip off the embedment plate under any condition.

- The racks will not at any point contact other racks or the pool wall. A revised tabulation of displacements is shown in Table 1.

- Resulting pool floor loads and structural stresses are enveloped by the condition of a fully loaded rack.

It is requested that the NRC review the above information and concur that the reanalysis is acceptable. Until NRC concurrence is obtained, FPL will provide administrative controls on fuel placement in order to preclude the possibility of any liftoff, maintaining the validity of the analysis and results submitted in our September 28th letter. If you have any questions, please contact us.

Very truly yours,

J. W. Williams, Jr.
Group Vice President
Nuclear Energy

JWW/TCG/cab

TABLE 1*

RACK DISPLACEMENTS

FOR AFFECTED FUEL RACKS

WORST CASE LOADINGS

SSE Seismic + Maximum Normal Thermal			REGION I	REGION II
			SSE Seismic + Normal Thermal	
Max. Sliding Distance, $\mu = .2$ (N-Linear Results)	Δs	in	.0001	0.007
Max. Structural Defl., $\mu = .8$ (N-Linear Results)	δ	in	.450	0.086
Total Displacement One Rack $\Delta = \Delta s + \delta$	Δ	in	.4501	0.093
SRSS Combined Displacement 2 Racks with only 1 sliding $\Delta_{max} = \sqrt{\Delta^2 + \delta^2}$	Δ_{max}	in	.636	0.127
Max. Normal Thermal Displacement	δT	in	.088	0.087
Max. Combined Thermal & Seismic Displacements $\bar{\Delta} = \delta_T + \Delta_{max}$	$\bar{\Delta}$	in	.724	0.214
Rack to Rack Gap (RI-RII)		in	1.11	1.11
Rack to Rack Gap (RI)		in	2.55	
Rack to Rack Gap (RII)		in		2.90

*See response to Question 4a of FPL Letter L-84-263 dated September 28, 1984.

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