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 FACIL: 50-335 St. Lucie Plant, Unit 1, Florida Power & Light Co.      05000335  
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 UHRIG, R.E.      Florida Power & Light Co.  
 RECIP. NAME      RECIPIENT AFFILIATION  
 CLARK, R.A.      Operating Reactors Branch 3

SUBJECT: Forwards Rev 1 to "Equipment Qualification Radiation Dose Map Development," per NRC 830617 request.

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 TITLE: OR/Licensing Submittal: Equipment Qualification

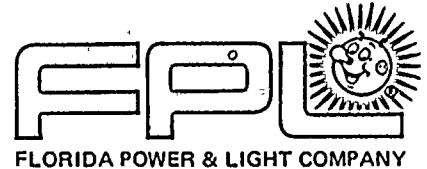
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INTERNAL:	ELD/HDS2	12	1	1	GC	13	1	1
	IE FILE	09	1	1	NRR CALVO, J		1	1
	NRR/DE/EQB	07	2	2	NRR/DL DIR	14	1	1
	NRR/DL/ORAB	06	1	1	NRR/DSI/AEB		1	1
	<u>REG PILE</u>	04	1	1	RGN2		1	1
EXTERNAL:	ACRS	15	8	8	LPDR	03	1	1
	NRC PDR	02	1	1	NSIC	05	1	1
	NTIS	31	1	1				

THE UNITED STATES OF AMERICA  
 DISTRICT COURT OF THE DISTRICT OF COLUMBIA  
 IN RE: [Illegible Name]  
 [Illegible text regarding the case]

[Illegible text, possibly a date or reference number]

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July 15, 1983  
L-83-409

Office of Nuclear Reactor Regulation  
Attention: Mr. Robert A. Clark, Chief  
Operating Reactors Branch #3  
Division of Licensing  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mr. Clark:

Re: St. Lucie Unit 1  
Docket NO. 50-335  
Equipment Qualification  
Dose Map Development

Revision 1 of the St. Lucie Unit No. 1 report "Equipment Qualification Radiation Dose Map Development" is attached for your review. The original report was revised in response to your letter of June 17, 1983, requesting FPL "...resubmit the beta analysis based upon an acceptable methodology, such as put forth in NUREG 0588 and used for St. Lucie 2."

In the original report, the beta dose values were taken as six times the total gamma dose at each point where the latter were tabulated. Re-determination of the beta doses, according to the methodology outlined in this revision resulted in lower beta doses outside containment (where applicable), and both higher and lower doses inside the containment, depending on location. The maximum increase in free air beta dose was 67%, with most increases substantially less.

Although some beta doses were higher than previously determined, FPL does not intend to requalify equipment qualified to the old values. The increase in total qualification dose from the change in methodology is not considered significant when compared to the broader limits of accuracy of the dose calculations or when compared to the much greater conservatisms taken in source terms, models, scenarios, etc. For example, the DOR Guidelines allow a factor of 100 reduction in the free-air beta dose from passage through a 70 mil covering of elastomer (e.g., wire insulation sheath) of unit density. The beta dose to the sensitive component would then be conservatively at least a factor of 10 lower than the gamma doses and can be ignored according to the DOR Guidelines. The original qualification task required the engineering disciplines to look at coverings and insulation to determine that they were sufficiently thick for the beta doses to be ignored. Therefore, an increase of 67% in the free air beta dose would increase the shielded beta contribution to the total dose by less than 10% of that (i.e., increase the total dose by less than 6.7%). Further, review guidelines used by our contractors referred to 80 mil of covering rather than the 70 recommended by the DOR Guidelines. This reduces the increase in total dose to less than 4.8%.

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PDR

Another major conservatism in defense of the FPL position not to re-qualify previously accepted equipment, is that Unit No. 2 containment gamma doses (appearing in the Equipment Qualification Report and Guidebook) already accepted by the NRC, are uniformly 30% less than corresponding Unit No. 1 doses. Since the Unit No. 2 doses were obtained using a more realistic model than the Unit No. 1 doses, and since the doses of the former are directly applicable to the latter in containment, the Unit No. 1 gamma doses are then at least 30% conservative. This more than offsets the slight increase in total dose due to beta radiation increase alone.

If you desire additional information, please contact us accordingly.

Very truly yours,



Robert E. Uhrig  
Vice President  
Advanced Systems and Technology

REU/GJK/mp

Attachment

cc: J.P. O'Reilly, Region II  
Harold F. Reis, Esquire