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SUBJECT: Provides response to NRC RAI dtd 970123 re cycle 14 SG run time analysis & dose asssessment using Std Review Plan Section 15.1.5 methodology.

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Florida Power & Light Company, 6501 South Ocean Drive, Jensen Beach, FL 34957

April 4, 1997

L-97-90
10 CFR 50.4

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

RE: St. Lucie Unit 1
Docket No. 50-335
Request for Additional Information No. 1
Cycle 14 Steam Generator Run Time Analysis

Attachment 1 provides the Florida Power & Light Company (FPL) response to the NRC request for additional information (RAI) dated January 23, 1997. FPL letter, L-97-47 dated February 21, 1997, notified the NRC of the schedule for providing the requested information. Attachment 2 provides the St. Lucie Unit 1 dose assessment using Standard Review Plan Section 15.1.5 methodology.

The dose assessment, prepared by Scientific Applications International Corporation (SAIC) for FPL, is SAIC report, SAIC-97-1008, *Analysis of the Radiological Consequences of a Main Steam Line Break Outside Containment for the St. Lucie Unit 1 Nuclear Power Plant Using NUREG-0800 Standard Review Plan 15.1.5 Appendix A*, dated March 14, 1997. The report provides a dose calculation for a one gpm primary to secondary leak for a postulated main steam line break (MSLB) outside containment. The doses were normalized to one gpm so that other doses could be determined by linear extrapolation for higher leak rates. The results show that, for the postulated MSLB with induced steam generator tube leakage following 15 months of operation (approximately three gpm leak rate), the resulting dose is considered acceptable under the pending steam generator rule making criteria, in that the results do not exceed the 10 CFR 100 and 10 CFR 50 Appendix A general design criteria (GDC) 19 accident dose limits.

During a July 3, 1996, meeting with the NRC, Florida Power and Light Company (FPL) committed to provide the results of the St. Lucie Unit 1 steam generator run time analysis to the NRC within 90 days of the startup from the 1996 refueling outage (SL1-14). FPL letter L-96-273 dated October 24, 1996, provided FPL's plans to operate the Unit 1 steam generators for fifteen (15) months (i.e., through October 23, 1997). The run time analysis was a physically based analysis that used the guidance contained in Draft Regulatory Guide (RG) 1.121, Generic Letter 95-05, and the Draft Regulatory Guide, *Steam Generator Tube Integrity*.

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This letter does not contain any new regulatory commitments.

FPL is prepared to meet with the NRC to discuss the results of this and any other previously submitted analyses. Please contact us if you have any additional questions.

Very truly yours,

J. A. Stall
Vice President
St. Lucie Plant

JAS/GRM

Attachments

cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, St. Lucie Plant

Cycle 14 Steam Generator Runtime Analysis
Request for Additional Information Response

NRC Question 1

Regulatory Guide (RG) 1.78 addresses the impact of chemical releases upon the control room operators. It is stated in Enclosure 3 that the models for dose calculation were taken from this RG. Please clarify how this RG was utilized in this analysis.

FPL Response 1

This regulatory Guide was used primarily to categorize the control room by the type of protection referred to as A, B, or C. Since the leak tightness is independent of the type of air borne material, the classification system in RG 1.78 provides a good initial assessment of the type of protection in the design. The formulas for dose concentration were applied as recommended in RG 1.145 which provides improved methods over RG 1.4.

NRC Question 2

The selection of meteorological data for St. Lucie should not be limited to only one year's worth of data in order to minimize the effects of annual perturbations. It is requested that a minimum of five years be used, or provide justification for the use of less data.

FPL Response 2

We agree that a five year sample will produce a better representation of the local conditions needed to estimate the χ/Q for any site. In the case of St. Lucie the year selected was clearly conservative for selecting the 95% confidence level (5% exceedance level). For 1996 the calculated 95% level was slightly greater than 1E-4, whereas the five year average in the FSAR was 8.55E-5. Thus, the selected year was conservative by 15%. As a result of this question we also reviewed the last five years of meteorological data to determine the frequency of the most restrictive stability classes, G and F. We found that the frequency for Class G and F (fraction of time percentage) was lower for all years than the selected year 1995. The selected year of 1995 is the only one where the total fraction of G and F exceed 5%. Thus, the selected year produces the most conservative χ/Q on a yearly basis for the purpose of the calculations.

Table 1 Review of meteorological data for St. Lucie

Year		%Class F	%Class G
1991	(ave by quarter)	3.509	0.771
1992		3.470	1.153
1993		3.448	0.952
1994	(ave by quarter)	2.72	0.45
1995	(used in analysis)	4.785	2.484
	Five Year Average	3.386	0.962

NRC Question 3

The manner in which the control room engineered safety feature system was described as operating is different than that described in NUREG/CR 4191, "Survey of Licensee Control Room Habitability Practices." It is not clear whether the control room was incorrectly modeled or the manner of operation was changed. Please explain.

FPL Response 3

The control room at St. Lucie Unit 1 meets the objectives in the check list items in NUREG/CR 4191. Periodic scheduled testing indicates that an air exchange rate of less than 0.25 volume/hour during an isolated condition produces a control room pressure of 1/8 inches water.

For the reference probabilistic assessment calculation a model was used which lumped all inputs and outputs into single parameters. The tails of the distribution were taken as large enough to cover variation in timing. The probabilistic assessment used realistic design values for the parameters and then assigned ranges to assess variations in the values.

Data for the realistic operation are not necessarily the same as the conservative values used for accident analysis assumptions in Chapter 15 where the loss-of-coolant-accident (LOCA) source term is expected to bound other accident doses for the control room. Hence, the simplified probabilistic modeling approach shows significant margin over the assumptions used in the SRP type analysis which accounts for control room features using accident bounding assumptions.