March 14, 2005

Mr. J. A. Stall
Senior Vice President, Nuclear and
Chief Nuclear Officer
Florida Power and Light Company
P.O. Box 14000
Juno Beach, Florida 33408-0420

SUBJECT: ST. LUCIE UNIT 2 - CORRECTION TO NRC SAFETY EVALUATION FOR ISSUANCE OF AMENDMENT NO. 138 REGARDING CHANGE IN METHODOLOGY AND INCREASE IN STEAM GENERATOR TUBE PLUGGING LIMIT (TAC NO. MC1566)

Dear Mr. Stall:

By letter dated January 31, 2005, the U.S. Nuclear Regulatory Commission (NRC) issued Amendment No. 138 to Renewed Operating License No. NPF-16. This amendment consists of changes to the Technical Specifications to permit operation with a reduced reactor coolant system flow corresponding to a steam generator tube plugging level of 30 percent per steam generator. The analysis performed to support this change utilized the Westinghouse Reload Safety Evaluation Methodology (WCAP-9272). This amendment also includes the transition to WCAP-9272 as the reload analysis methodology for St. Lucie Unit 2.

The Florida Power & Light Company staff informed the NRC staff of inaccuracies regarding the discussion of the control room ventilation system operation in the isolation mode and the need for editorial corrections in Tables 1 and 2 to the safety evaluation (SE) supporting the amendment. We have resolved this by revising the appropriate wording in the SE and correcting the tables. The corrected SE page and Tables 1 and 2 are included as an enclosure to this letter. Revisions are identified by lines in the margin. This letter, with its enclosure, should be attached to the subject SE to document the resolution of the issue.

If you or your staff have any questions concerning the resolution of this matter, please contact me at 301-415-3974.

Sincerely,

/RA/
Brendan T. Moroney, Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-389

Enclosure: As stated

cc w/enclosure: See next page

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The licensee assumed the control room is isolated 30 seconds after the LOOP. The licensee also assumed the operators act to un-isolate the control room and initiate filtered air makeup 90 minutes after the start of the event in order to maintain positive pressure and air quality within the control room. By observing the radiation monitors located in the outside air intake ducts, the licensee stated that operators are assumed to be able to identify and open the outside air intake with the lesser amount of radiation. The licensee assessed the dose from the filtered makeup contribution using the dispersion factors for the more favorable air intake location throughout the rest of the 30-day duration of the dose calculation.

In Question 19 of the RAI letter dated July 9, 2004, the staff asked how the operators would be able to continuously observe radiation monitor levels at each intake throughout the 30-day event period to ensure that the less contaminated intake is always being used to pressure the control room during wind shifts and changing release rates from multiple release pathways. In its RAI response to the staff dated September 21, 2004, the licensee committed to revising plant procedures to identify the need for operators to be aware of changing meteorological conditions and how such changes may affect which outside air intake path provides the lower radiation levels.

During the entire course of the event, the licensee assumed unfiltered inleakage enters the control room. At the beginning of the event, prior to control room isolation, the licensee modeled unfiltered inleakage using the dispersion factors associated with the less favorable control room intake location. Following control room isolation, when both control room intakes are closed, the licensee used a dispersion factor corresponding to the midpoint between both control room intake locations (for closest MSSV/ADV releases). At the time when the operators are assumed to un-isolate the control room by opening the more favorable air intake, the licensee used the dispersion factor for the more favorable control room intake location.

In Question 23 of the RAI letter dated July 9, 2004, the staff inquired why the licensee did not model the unfiltered inleakage pathway using the most limiting dispersion factors associated with the bounding potential unfiltered inleakage pathway for the duration of the event. In its RAI response to the staff dated September 21, 2004, the licensee stated that Unit 2 unfiltered inleakage testing demonstrated that a large portion of the control room unfiltered inleakage comes from the B switchgear room which is fed from fans that take suction in the vicinity of the south control room intake. Since the atmospheric dispersion factors for the south control room intake are lower than the other possible receptor points, assigning the unfiltered inleakage to other possible receptor points is conservative.

Staff qualitatively reviewed the inputs to the ARCON96 computer runs and found them generally consistent with site configuration drawings and staff practice. The two potential release pathways (i.e., the condenser and the closest MSSV/ADV) were modeled as ground-level point sources with the difference in heights between the release point and receptor taken into consideration. The building area used to model building wake effects was conservatively set equal to zero. The staff made an independent evaluation of the resulting atmospheric dispersion estimates by running the ARCON96 computer model and obtained similar results.

TABLE 1

SGTR DBA ANALYSIS ASSUMPTIONS (CONTINUED)

Pre-incident iodine spike activity (60 µCi/gm dose equivalent I-131)		Reference 7, Table 2.4-3
Coincident spike appearance rate, based on		Reference 7, Table 2.4-5
RCS letdown flow rate (120F, 2250 psia), gpm		150.0
RCS letdown demineralizer efficiency		4
RCS mass, lbm		452,000
RCS leakage, gpm		11
Coincident spike multiplier		335
Release duration, hrs		
Ruptured SG		8
Unaffected SG		8
Liquid Masses, lbm		
RCS	475,385	(pre-incident spike)
RCS	452,000	(Coincident spike)
SG	105,000	(minimum)
SGTR integrated mass releases		Reference 7, Table 2.4-2
Break Flow Flash Fraction, %		
Pre-trip (up to 379.2 sec)		17.19
Post-trip		6.6
Primary-to-secondary leakage		
Ruptured SG, gpm		.15
To unaffected SG, gpd		.15
Duration, hours		12
Chemical form release fractions		
Elemental		0.97
Organic		0.03
Steam partition coefficient in SGs		
Ruptured SG (flashed flow)		1.0
Ruptured (non-flashed flow)		100
Intact SG		100

Table 2

St. Lucie Unit 2 Control Room Relative Concentration (X/Q) Values
Steam Generator Tube Rupture Accident

		X/Q VALUES (sec/m^3)				
TIME FRAME	RELEASE POINT	0 TO 2 HOURS	2 TO 8 HOURS	8 TO 24 HOURS	1 TO 4 DAYS	4 TO 30 DAYS
Prior to CR Isolation	Condenser[a]	2.47×10^{-3}	-	-	-	-
	Closest MSSV/ADV[a]	6.69×10^{-3}	-	-	-	-
During CR Isolation	Closest MSSV/ADV[b]	3.11×10^{-3}	-	-	-	-
After Initiation of Filtered Make-up	Closest MSSV/ADV[c]	1.88×10^{-3}	1.46×10^{-3}	5.98×10^{-4}	4.23×10^{-4}	3.19×10^{-4}

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a The receptor is assumed to be the north CR intake

b The receptor is assumed to be the midpoint between the CR intakes

c The receptor is assumed to be the south CR intake