

Official

FEB 11 1986

Florida Power and Light Company
✓ATTN: Mr. C. O. Woody
Group Vice President
Nuclear Energy Department
P. O. Box 14000
Juno Beach, FL 33408

Gentlemen:

SUBJECT: CONFIRMATORY MEASUREMENTS RESULTS
DOCKET NOS. 50-335 AND 50-389

As part of the NRC Confirmatory Measurements Program, spiked liquid samples were sent on July 22, 1985, to your St. Lucie facility for selected radiochemical analyses. We are in receipt of your analytical results transmitted to us by your letters dated September 27, 1985, and January 10, 1986. Results were verified based on a telephone conversation on February 5, 1986. Comparison of your results to the known values are presented in Enclosure 1 for your information. The acceptance criteria for the comparisons are listed in Enclosure 2.

In our review of the data, comparative results were in agreement for H-3, Sr-89, and Sr-90 analyses and disagreement for Fe-55. This disagreement may be indicative of a programmatic weakness and therefore your attention is directed to determining the underlying cause for this disagreement. Furthermore, all data should be reviewed in greater detail by cognizant staff members for significant trends in the data among successive analyses.

These results and any results from previous years pertaining to these analyses will be discussed at future NRC inspections.

Sincerely,

*Original signed by
Roger D. Walker*

Roger D. Walker, Director
Division of Reactor Projects

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Enclosures:

1. Confirmatory Measurement Comparisons
2. Criteria for Comparing Analytical Measurements

cc w/encl:

- ✓K. N. Harris, Vice President
St. Lucie Nuclear Plant
- ✓D. A. Sager, Plant Manager
- ✓N. Weems, Site QA Superintendent

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ENCLOSURE 1

CONFIRMATORY MEASUREMENT COMPARISONS OF H-3, FE-55, SR-89, AND SR-90 ANALYSIS
FOR ST. LUCIE NUCLEAR PLANT ON SEPTEMBER 27, 1985

Isotope	Licensee (uCi/unit)	NRC (uCi/unit)	Resolution	Ratio (Licensee/NRC)	Comparison
H-3	4.00 E-5	3.11±0.06 E-5	52	1.29	Disagreement
H-3 (reanalysis)*	3.06 E-5	3.11±0.06 E-5	52	0.98	Agreement
Fe-55	2.94 E-5	1.09±0.02 E-5	55	2.70	Disagreement
Sr-89	1.43 E-4	1.31±0.04 E-4	33	1.09	Agreement
Sr-90	1.73 E-5	1.44±0.06 E-5	24	1.20	Agreement

* Second tritium analysis result transmitted by letter dated January 10, 1986. Licensee stated that cause of the first tritium result discrepancy could not be identified.

ENCLOSURE 2

CRITERIA FOR COMPARING ANALYTICAL MEASUREMENTS

This enclosure provides criteria for comparing results of capability tests and verification measurements. The criteria are based on an empirical relationship which combines prior experience and the accuracy needs of this program.

In this criteria, the judgement limits denoting agreement or disagreement between licensee and NRC results are variable. This variability is a function of the NRC's value relative to its associated uncertainty. As the ratio of the NRC value to its associated uncertainty, referred to in this program as "Resolution"¹ increases, the range of acceptable differences between the NRC and licensee values should be more restrictive. Conversely, poorer agreement between NRC and licensee values must be considered acceptable as the resolution decreases.

For comparison purposes, a ratio² of the licensee value to the NRC value for each individual nuclide is computed. This ratio is then evaluated for agreement based on the calculated resolution. The corresponding resolution and calculated ratios which denote agreement are listed in Table 1 below. Values outside of the agreement ratios for a selected nuclides are considered in disagreement.

$$^1 \text{ Resolution} = \frac{\text{NRC Reference Value for a Particular Nuclide}}{\text{Associated Uncertainty for the Value}}$$

$$^2 \text{ Comparison Ratio} = \frac{\text{Licensee Value}}{\text{NRC Reference Value}}$$

TABLE 1 - Confirmatory Measurements Acceptance Criteria
Resolutions vs. Comparison Ratio

<u>Resolution</u>	<u>Comparison Ratio for Agreement</u>
<4	0.4 - 2.5
4 - 7	0.5 - 2.0
8 - 15	0.6 - 1.66
16 - 50	0.75 - 1.33
51 - 200	0.80 - 1.25
>200	0.85 - 1.18