Official

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Alabama ... er Company
ATTN: Mr. R. P. McDonald
Senior Vice President
P. O. Box 2641
Birmingham, AL 35291

Gentlemen:

SUBJECT: DOCKET NOS. 50-348 AND 50-364, CONFIRMATORY MEASUREMENT RESULTS
SUPPLEMENT TO INSPECTION REPORT NOS. 50-348/85-27 AND 50-364/85-27

As part of the NRC Confirmatory Measurements Program, spiked liquid samples were sent on September 22, 1986, to your facility for selected radiochemical analyses. We are in receipt of your analytical results transmitted to us by your letter dated November 11, 1986, and subsequent to verification of your values as per our conversation by telephone on December 10, 1986, the following 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 these data all comparative results were in agreement. These data should be reviewed in greater detail by cognizant staff members for any significant trends in the data among successive years in which samples have been analyzed by your facility. Any biases noted may be indicative of a programmatic weakness and your efforts should be expended in determining reasons for such biases.

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

Sincerely,

David M. Verrelli, Chief
Reactor Projects Branch 2
Division of Reactor Projects

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

cc w/encls: (See page 2)

1/1

IE01

cc w/encls:
W. O. Whitt, Executive Vice President
J. D. Woodard, General Manager - Nuclear Plant
W. G. Hairston, III, General Manager - Nuclear Support
J. W. McGowan, Manager-Safety Audit and Engineering Review
J. K. Osterholtz, Supervisor-Safety Audit and Engineering Review
D. E. Grissette, Counting Room Supervisor
W. R. Bayne, Chemistry and Environmental Supervisor

bcc w/encls:
NRC Resident Inspector
E. Reeves, Project Manager, NRR
Document Control Desk
State of Alabama

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~~12/12/86~~ 1-2-87	12/12/86 1/2/87	12/5/86	12/5/86 1/5/87

ENCLOSURE 1

CONFIRMATORY MEASUREMENT COMPARISONS OF FE-55 ANALYSIS
FOR FARLEY NUCLEAR PLANT ON SEPTEMBER 22, 1986

Sample ID	Licensee (uCi/unit)	NRC (uCi/unit)	Resolution	Ratio (Licensee/NRC)	Comparison
Farley A	4.57 E-5	3.72 ± .07 E-5	53	1.23	Agreement
Farley B	1.45 E-4	1.33 ± .03 E-4	44	1.09	Agreement

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 these 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, 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 ratio[2] 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 nuclide are considered in disagreement.

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

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

Confirmatory Measurements Acceptance Criteria
Resolutions vs. Comparison Ratio

Resolution	Comparison Ratio for Agreement
<4	0.4 - 2.5
4 - 7	0.5 - 0.2
8 - 15	0.6 - 1.66
16 - 50	0.75 - 1.33
51 - 200	0.80 - 1.25
>200	0.85 - 1.18