

official

SEP 16 1988

Mr. S. A. White
Senior Vice President, Nuclear Power
Tennessee Valley Authority
6N 38A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Dear Mr. White:

SUBJECT: DOCKET NOS. 50-327 AND 50-328, CONFIRMATORY MEASUREMENT RESULTS
SUPPLEMENT TO INSPECTION REPORT NOS. 50-327/88-38 AND 50-328/88-38

As part of the NRC Confirmatory Measurements Program, spiked liquid samples were sent on June 2, 1988 to your Sequoyah facility for selected radiochemical analyses. We are in receipt of your analytical results transmitted to us by your letter dated August 18, 1988, and subsequent to verification of your values as per our conversation by telephone on August 24, 1988, 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.

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

Sincerely,

Frank R. McCoy, Assistant Director
for TVA Inspection Programs
TVA Projects Division
Office of Special Projects

Enclosures:

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

cc w/encl: (See page 2)

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- J. A. Kirkebo, Vice President,
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ENCLOSURE 1

CONFIRMATORY MEASUREMENT COMPARISONS OF H-3, FE-55, SR-89, SR-90 ANALYSES
FOR SEQUOYAH NUCLEAR PLANT ON AUGUST 18, 1988

Isotope	Licensee [uCi/ml]	NRC [uCi/ml]	Resolution	Ratio [Licensee/NRC]	Comparison
H-3	2.14E-05	(2.34±0.05) E-05	47	0.91	Agreement
Fe-55	2.12E-05	(2.30±0.05) E-05	46	0.92	Agreement
Sr-89	1.36E-04	(1.76±0.05) E-04	35	0.77	Agreement
Sr-90	8.03E-06	(1.06±0.04) E-05	27	0.76	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 judgment 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 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 nuclide 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