Office Copy

SEP 27 1988

Virginia Electric and Power Company
ATTN: Mr. W. R. Cartwright, Vice President,
Nuclear Operations
P. O. Box 26666
Richmond, VA 23261

Gentlemen:

SUBJECT: DOCKET NOS. 50-338 AND 50-339, CONFIRMATORY MEASUREMENT RESULTS, SUPPLEMENT TO INSPECTION REPORT NOS. 50-338/88-09 AND 50-339/88-09

As part of the NRC Confirmatory Measurements Program, spiked liquid samples were sent on June 2, 1988, to your North Anna facility for selected radiochemical analyses. We are in receipt of your analytical results transmitted to us by your letter dated August 8, 1988, and the following comparisons 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 shall 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.

Mr. W. Barnes of your North Anna facility staff, was informally notified of these results by telephone conversation on September 20, 1988.

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

Sincerely,

Original Signed By
D. M. Collins

Douglas M. Collins, Chief
Emergency Preparedness and
Radiological Protection Branch
Division of Radiation Safety
and Safeguards

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

cc w/encls: (See page 2)

1/1

IE06

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RII	RII	RII
PStoddart	JKahle	FCantrell
9/21/88	9/21/88	9/26/88

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 agrement 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 = $\frac{\text{Licensee Value}}{\text{NRC Reference Value}}$

TABLE 1

Confirmatory Measurements Acceptance Criteria
Resolutions vs. Comparison Ratio

Resolution	Comparisons Ratio for Agreement
<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

ENCLOSURE 1

CONFIRMATORY MEASUREMENT COMPARISONS OF H-3, FE-55, SR-89
AND SR-90 ANALYSES FOR NORTH ANNA NUCLEAR PLANT

Isotope	Licensee (uCi/ml)	NRC (uCi/ml)	Resolution	Ratio (Licensee/NRC)	Comparison
H-3	2.39 E-05	2.10±0.04 E-05	53	1.14	Agreement
Fe-55	2.00 E-05	2.07±0.04 E-05	52	0.97	Agreement
Sr-89	1.60 E-04	1.59±0.05 E-04	32	1.01	Agreement
Sr-90	1.00 E-05	9.55±0.38 E-06	25	1.05	Agreement