

OCT 07 1988

Official

System Energy Resources, Inc.
✓ ATTN: Mr. O. D. Kingsley, Jr.
Vice President, Nuclear Operations
P. O. Box 23054
Jackson, MS 39205

Gentlemen:

SUBJECT: DOCKET NO. 50-416, CONFIRMATORY MEASUREMENT RESULTS, SUPPLEMENT TO
INSPECTION REPORT NO 50-416/88-05

As part of the NRC Confirmatory Measurements Program, spiked liquid samples were sent on June 2, 1988, to your Grand Gulf Facility for selected radiochemical analyses. We are in receipt of your analytical results transmitted to us by your letter dated August 2, 1988, and the 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 and Fe-55 analyses and disagreement for Sr-89 and Sr-90 analyses. These results were discussed with Mr. J. Lassiter of your Grand Gulf facility by telephone conversation on September 8, 1988. Mr. Lassiter requested that an additional liquid sample spiked with Sr-89 and Sr-90 be sent to your facility for reanalysis. The additional spiked sample is due to be shipped to your facility within the next 30 days and we request that the analyses be completed as soon as practicable but no later than 60 days from receipt of the sample. Results should be sent to: U.S. Nuclear Regulatory Commission, Attn: Mr. J. B. Kahle.

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

Sincerely,

Thomas R. Decker, Acting 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)

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✓ cc w/encls:

- ✓ T. H. Cloninger, Vice President, Nuclear Engineering and Support
- ✓ W. T. Cottle, GGNS Site Director
- ✓ C. R. Hutchinson, GGNS General Manager
- ✓ J. G. Cesare, Director, Nuclear Licensing
- ✓ R. T. Lally, Manager of Quality Assurance Middle South Services, Inc.
- ✓ R. B. McGehee, Esquire
Wise, Carter, Child, Steen and Caraway
- ✓ N. S. Reynolds, Esquire
Bishop, Cook, Purcell & Reynolds
- ✓ R. W. Jackson, Project Engineer
State of Mississippi

✓ bcc w/encls:

- ✓ NRC Resident Inspector
- ✓ DRS, Technical Assistant
- ✓ L. Kintner, NRR
Document Control Desk

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SAdamovitz
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JKahle
10/15/88

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ENCLOSURE 1

CONFIRMATORY MEASUREMENT COMPARISONS OF H-3, Fe-55, Sr-89, AND Sr-90 ANALYSES
FOR GRAND GULF NUCLEAR PLANT ON AUGUST 2, 1988

<u>Isotope</u>	<u>Licensee (uCi/ml)</u>	<u>NRC (uCi/ml)</u>	<u>Resolution</u>	<u>Ratio (Licensee/NRC)</u>	<u>Comparison</u>
H-3	1.92E-5	1.80±0.04E-5	45	1.07	Agreement
Fe-55	1.77E-5	1.77±0.04E-5	44	1.00	Agreement
Sr-89	7.78E-5	1.36±0.04E-6	34	0.57	Disagreement
Sr-90	5.28E-6	8.19±0.33E-6	25	0.64	Disagreement

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 agreements of 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