

MAR 06 1984

Docket: 50-285

Omaha Public Power District
 ATTN: W. C. Jones, Division Manager
 Production Operations
 1623 Harney Street
 Omaha, Nebraska 68102

Gentlemen:

This refers to the results of confirmatory measurements performed by your radiochemistry laboratory on a liquid "unknown" sample supplied upon request with known isotopic activities by the NRC's reference laboratory, Radiological and Environmental Sciences Laboratory (RESL) in Idaho Falls, Idaho. The sample was sent to your laboratory in conjunction with an NRC confirmatory measurements inspection conducted in August 1983. The isotopic activities used by RESL in the preparation of the liquid sample were traceable to the National Bureau of Standards radioactivity measurements systems by laboratory intercomparisons. The comparative analysis results are tabulated below for your review. These results will appear in the next NRC confirmatory measurements inspection report.

Attachment 1 explains the criteria used to compare results.

RESL Unknown Liquid Sample
 (Standardized 12:00 MDT, August 16, 1983)

Nuclide	OPPD Result ($\mu\text{Ci/ml}$)	NRC Result ^{1/} ($\mu\text{Ci/ml}$)	OPPD/NRC Ratio	Comparison Decision
tritium	1.95 \pm 0.004E-02	2.06 \pm 0.05E-02	0.95	Agreement
⁶⁰ Co	1.55 \pm 0.03E-03	1.45 \pm 0.03E-03	1.07	Agreement
¹³⁷ Cs	1.16 \pm 0.02E-03	1.11 \pm 0.03E-03	1.05	Agreement
¹⁴⁴ Ce	1.23 \pm 0.04E-03	8.81 \pm 0.16E-04	1.40	Disagreement

^{1/} NRC results were taken from the standard certificate supplied to the Region IV office as prepared by RESL and traceable to the National Bureau of Standards.

FRPS
 BNicholas/lk
 2/29/84

FRPS
 BMurray
 2/29/84

TPB
 RHall
 2/29/84

RPSC
 CWJohnson
 3/2/84

RPB2
 JGagilardo
 3/1/84

DTP
 RLBangart
 2/29/84

3403120147 840306
 PDR ADOCK 05000285
 G PDR

1/1 (IE06)

Should you have any questions concerning these results, we will be pleased to discuss them with you.

Sincerely,

Original Signed By

J. E. Gagliardo, Acting Chief
Reactor Project Branch 2

Attachment:

As stated

cc w/attachment:

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bcc to DMB (IE01)

bcc distrib. by RIV:

RPB2	Resident Inspector
TPB	Section Chief (RPS-C)
RIV File	R. Denise, DRRP&EP
J. Collins, RA	J. B. Nicholas
MIS SYSTEM	
KANSAS STATE DEPT. HEALTH	
NEBRASKA STATE DEPT. HEALTH	

ATTACHMENT NO. 1

Criteria for Comparing Analytical Measurements

The following are the criteria used in comparing the results of capability tests and verification measurements. The criteria are based on an empirical relationship established through prior experience and this program's analytical requirements.

In these criteria, the judgement limits vary in relation to the comparison of the resolution.

$$\text{Resolution} = \frac{\text{NRC VALUE}}{\text{NRC UNCERTAINTY}}$$

$$\text{Ratio} = \frac{\text{LICENSEE VALUE}}{\text{NRC VALUE}}$$

Comparisons are made by first determining the resolution and then reading across the same line to the corresponding ratio. The following table shows the acceptance values.

RESOLUTION	AGREEMENT RATIO
<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

The above criteria are applied to the following analyses:

- (1) Gamma Spectrometry.
- (2) Tritium analyses of liquid samples.
- (3) Iodine on adsorbers.
- (4) ^{89}Sr and ^{90}Sr determinations.
- (5) Gross Beta where samples are counted on the same date using the same reference nuclide.