



Commonwealth Edison

Zion Generating Station
Shiloh Blvd. & Lake Michigan
Zion, Illinois 60099
Telephone 708 / 746-2084

May 28, 1991

U. S. Nuclear Regulatory Commission
Region III
Attn: Mr. A. Bert Davis
Regional Administrator
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Gentlemen:

This letter refers to Inspection Reports No. 50-295/90027(DRSS) and No. 50-304/90029(DRSS), specifically Open Items Nos. 50-295/90027-01 and 50-304/90029-01; which were the result of a routine inspection conducted by Dr. R. B. Holtzman of the USNRC Region III from October 22 to October 26, 1990.

The Open Items were a result of the need for analysis to be performed by off-site vendors. Please find attached copies of the Simulated Lake Discharge (Spiked) sample analysis reports as prepared by TMA/Norcal.

Any additional information or further questions will gladly be addressed by J. A. Heaton, Zion Station.

Sincerely,

T. P. Joyce
Station Manager
Zion Station

TPJ/bh

cc w/attachment:

R. B. Holtzman (USNRC RIII)
Resident Inspector (USNRC RIII)
L. Bush (NLA)
R. Chrzanowski (Regulatory Assurance)
B. Schramer (Chemistry)
T. Saksefski (Regulatory Assurance)

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PDR

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TMA
Thermo Analytical Inc.

TMA/Norcal

2030 Wright Avenue

P.O. Box 4040

Birthington, CA 94804-0040

(415) 235-2633 Fax No. (415) 235-0438

May 18, 1991

SENT BY FAX TO (708)746-2084x2260

Ref: P.O. No. 323685, Release Not required
TMA/Norcal N1-03-208-4207

Mr. Phillip L. Gilman, Chemist
Commonwealth Edison
Zion Nuclear Power Station
101 Shiloh Blvd.
Zion, IL 60099

Subject: Radiological Analyses of NRC Simulated Liquid Waste Sample

Dear Mr. Gilman:

The subject sample was received in Shipment No. NRS-91020. The sample was analyzed in accordance with your letter dated 14 March 1991. The letter stated that no contract "release" number was required.

This report is sent by FAX today and the original will be mailed, for confirmation.

Sincerely yours,

Robert A. Wessman

Robert A. Wessman, Manager
Nuclear Projects

RAW/ss

Enclosure: Table 4207

cc: Mr. Richard Luczak (Chicago, IL)

TABLE 4183

RADIOLOGICAL RESULTS - NRC SIMULATED LIQUID WASTE SAMPLE
 STATION: Zion N.P.S. P.O. NO.: 323685 RELEASE NO.: Not Required

Sample I.D.	Ref. Time	Amount Sample Rec'd(d)	TMA/Norcal Series (4207)	Analysis	$\mu\text{Ci/cc}$ (\pm % error, 2σ)(a,b,c,e,f)
Simulated Liquid Waste	1200, 10/01/90	1 L pH \leq 1.	1	^3H ^{55}Fe ^{89}Sr ^{90}Sr	6.38 E-05 (10.) 4.82 E-05 (10.) 7.21 E-05 (12.) 2.79 E-06 (12.)

- (a) All results are decay corrected to the reference time, except for gross alpha, which is as of time of counting.
- (b) MDA - The result is less than or equal to the MDA for the specific analysis reported.
- (c) Error - The error term, 2σ is listed in parentheses after the number. The error for each result is an estimate of the significant random uncertainties incurred in the measurement process. These are propagated to each final result. They include the counting (Poisson) uncertainty, as well as those intrinsic errors due to carrier or tracer standardization, aliquoting, counter efficiencies, weights or volumes, etc. The estimated intrinsic errors are as follows:

Gross Alpha	$\pm 20\%$, 2σ
^3H	$\pm 10\%$, 2σ
^{55}Fe	$\pm 10\%$, 2σ
^{89}Sr	$\pm 10\%$, 2σ
^{90}Sr	$\pm 12\%$, 2σ
^{144}Ce	$\pm 10\%$, 2σ

- (d) Sample acidity: approximate test with pH paper.
- (e) Analysis aliquots were according to NRC instructions. Collected counts and/or counting times were according to TMA/Norcal counting room operational criteria.
- (f) Decay corrections made with the following constants:

^3H λ	= 5.643	E-02 y ⁻¹
^{55}Fe λ	= 6.8023	E-04 d ⁻¹
^{89}Sr λ	= 1.372	E-02 d ⁻¹
^{90}Sr λ	= 6.863	E-05 d ⁻¹

