

January 26, 2011

Mr. Michael LaFranzo Health Physicist U.S. Nuclear Regulatory Commission Region III Division of Nuclear Materials Safety 2443 Warrenville Rd., Ste. 210 Lisle, IL 60532-4352

Dear. Mr. LaFranzo;

The electron capture detector that was not listed on the Ni-63 sealed source inventory at the time of your inspection is actually a Varian Aerograph Model 96-92 scandium tritide ECD dated 2/1976. That would explain why it was not on the Ni-63 inventory list. The current activity of this detector is less than 139 mCi. We wipe tested the ECD for tritium contamination to check for evidence of leakage. The results are attached. Due to the age of this ECD we are looking at options of either returning it to Varian or disposal as radioactive waste.

We have also wipe tested the waste PPE found in the locked cabinet where the Ni-63 cabinets were stored. The results will be forwarded to you when we received them from the Radiation Detection Company.

If you have any questions, please contact me at 816-360-5338 or Eric Jeppesen at 816-360-5378.

Sincerely;

James M. McHugh, RSO

Senior Advisor

Environmental Safety & Health Office

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## **Survey of GCS Detector:**

Serial # F547 Model # 96-92 Date: 2/76

Perkin Elmer TriCarb Liquid Scintillation Analyzer, MRI#: 013179, Serial No.: 433509

Reagents: Ultima Gold Scintillation Cocktail Lot 77-091201, Exp. Date: 07/1/2011

## Procedure:

The wipe sampling survey was conducted in accordance with RSP-18, Contamination Surveys, Revision 4. The wipe samples were collected using Whatman filter disks in the general vicinity listed on the survey forms and shown on the laboratory diagrams. Areas of approximately 100 cm<sup>2</sup> were wiped with the filter papers, which were placed into labeled scintillation vials. Five milliliters of scintillation cocktail was added to each vial before being placed on the counter for analysis.

## Results:

The results of the analysis of the filter wipes by liquid scintillation are presented below. Contamination levels are in units of disintegrations per minute in a wiped area of approximately 100 cm<sup>2</sup>. The results were not blank corrected.

				<sup>14</sup> C		
Area	Loc	Description	DPM	DPM	Notes	
Blank	1	Clean wipe in scintillation liquid.	23	30		
	2	Round piece with dual connectors.	60	46		
	3	Single piece number (AMPHENOL) 31-2301.	15	22		
	4	Single piece number (74868 UG-10947U)	21	30		
	5	Top of base.	23	20		
	6	Bottom of base.	146	48		

1/25/2011 2:43:51 PM QuantaSmart (TM) - 2.03 - Serial# 433509

Protocol# 15 - 3h 14c dpm.lsa

Page # 1 User: 69Fairlane

Assay Definition-

Assay Description: Basic dual DPM assay

Assay Type: DPM (Dual)

Report Name: GCS detector; Serial # F547, Model # 96-92, Date 2-76

Output Data Path: C:\Packard\Tricarb\Results\69Fairlane\3h 14c dpm\20110125 1433

Raw Results Path: C:\Packard\Tricarb\Results\69Fairlane\3h\_14c\_dpm\20110125\_1433\20110125\_

1433.results

Assay File Name: C:\Packard\TriCarb\Assays\3h 14c dpm.lsa

Count Conditions-

Nuclide: 3H-14C

Quench Indicator: tSIE

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H
Mid Energy: 14C
Count Time (min): 1.00
Count Mode: Normal

Assay Count Cycles: 1 Repeat Sample Count: 1 #Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: Off Low CPM Threshold: Off 2 Sigma % Terminator: Off

Regions	LL	UL
A	0.0	12.0
В	12.0	156.0
C	0.0	0.0

Count Corrections-

Static Controller: On Luminescence Correction: Off Colored Samples: Off Heterogeneity Monitor: n/a Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

C

Half Life Correction: Off

Regions Half Life Units Reference Date Reference Time A B

Cycle 1 Results

JACTE	TICSUICS							
S#	Count Time	CPMA	CPMB	DPM1	DPM2	SIS	tSIE	MESSAGES
1	1.00	19	23	23	30	93.55	633.80	
2	1.00	43	35	60	46	64.34	605.88	
3	1.00	13	17	15	22	80.30	623.51	
4	1.00	18	23	21	30	93.50	604.82	
5	1.00	17	15	23	20	58.18	584.37	
6	1.00	92	37	146	48	38.74	607.93	