

# FRANKLIN & MARSHALL

August 24, 2007

Dr. Dennis R. Lawyer, Health Physicist  
Commercial and R&D Branch  
Division of Nuclear Materials Safety  
U. S. Nuclear Regulatory Commission  
Region 1  
475 Allendale Road  
King of Prussia, Pennsylvania 19406-1415

MS 16

J-6

License No.: 37-11185-04  
Docket No.: 03017052  
Control No.: 140753

Dear Dr. Lawyer:

I am writing in response to our telephone conversation on August 17, 2007, regarding my request to amend Nuclear Regulatory Commission License No. 37-11185-04. I am sorry that it has taken me so long to respond to your request for wipe tests of the floors in Packerhal 214, 304, and 306. I had to arrange to have the wipes counted at Millersville University. I have enclosed new copies of the schematics of the rooms showing where the floors were wiped. The wipes were counted using a Beckman LS 6000 SC (ID # 283981) scintillation counter. The counter was successfully calibrated on August 24, 2007 using calibration standards from Beckman Coulter, Inc. (C-14 standard: S/N COW2904, 98800 DPM, reference 11 DEC 06, expiration 11 DEC 11; H-3 standard: S/N HOW0412, 102000 DPM, reference 11 DEC 06, expiration 11 DEC 11). According to the manufacturer, the counter is 58% efficient for H-3 and 95% efficient for C-14.

Two vials were run for one minute with a piece of Kim-wipe and distilled water only as background samples. The average of the two was 17.5 CPM in the H-3 energy window and 10.5 CPM in the C-14 energy window. Since the samples were also run for one minute, the minimum detectable count rate (at 95% confidence) is:

$$MDCR(95\%) = 3.29 \sqrt{\frac{R_{background}}{t_{background}} + \frac{R_{background}}{t_{sample}}} = 4.65 \sqrt{R_{background}}$$

$$H-3: \quad MDCR(95\%) = 4.65 \sqrt{17.5} = 19 \text{ cpm above background}$$

$$C-14: \quad MDCR(95\%) = 4.65 \sqrt{10.5} = 15 \text{ cpm above background}$$

Since the counter is 58% efficient for H-3 and 95% efficient for C-14, the minimum detectable activities are 33 DPM for H-3 and 16 DPM for C-14.

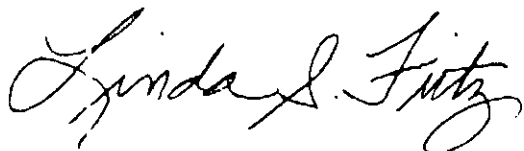
140753

NMSS/RGN1 MATERIALS-002

The wipes were all below background plus MDCR (37 CPM for H-3 and 26 for C-14). The raw counts ranged from 6 CPM to 19 CPM in the H-3 energy window and from 6 CPM and 14 CPM in the C-14 window.

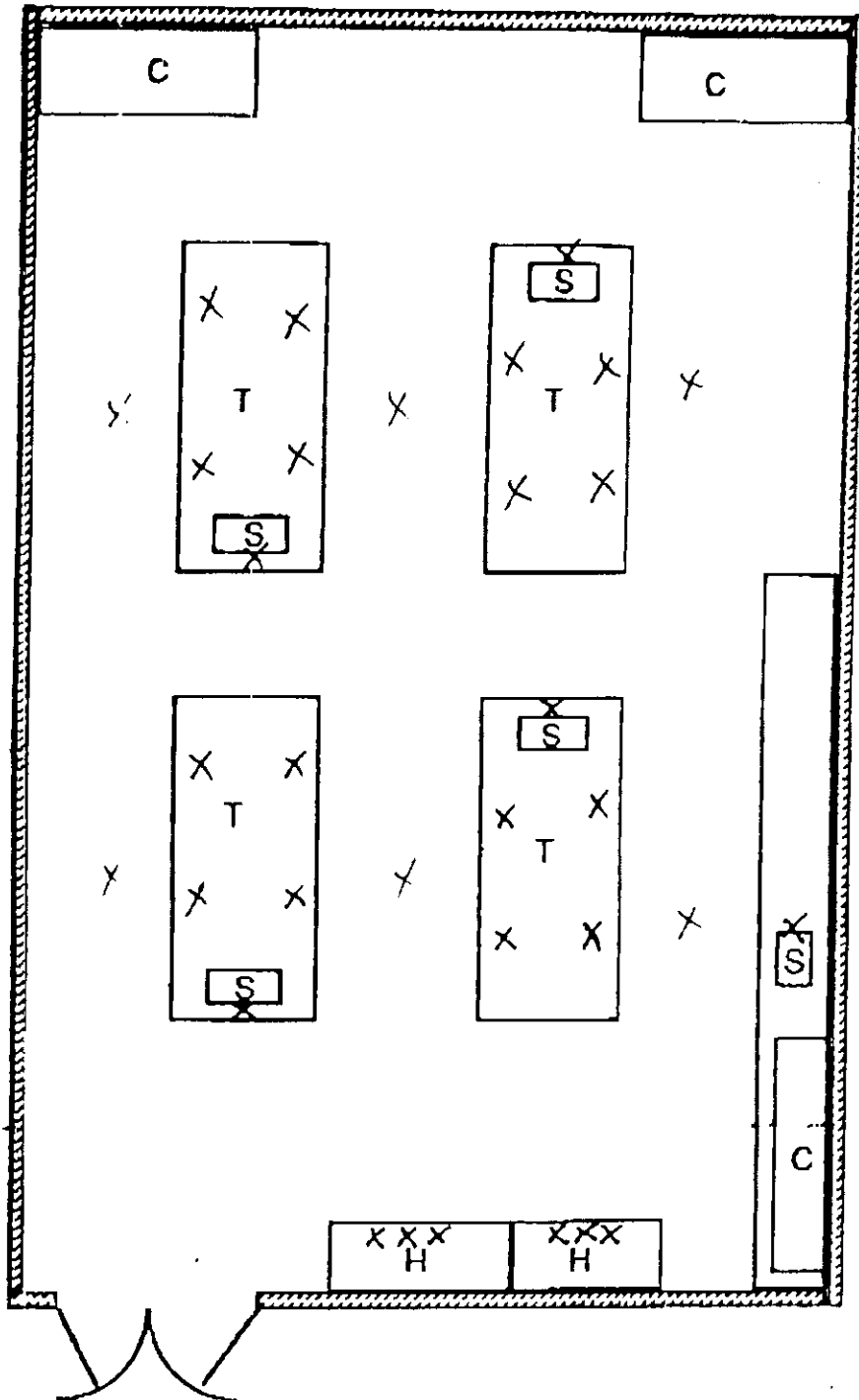
Thank you for your assistance in this matter.

Sincerely,

A handwritten signature in cursive script that reads "Linda S. Fritz". The signature is written in black ink and is positioned above the typed name and title.

Linda S. Fritz, PhD  
Radiation Safety Officer  
Franklin & Marshall College

ATTACHMENT #4

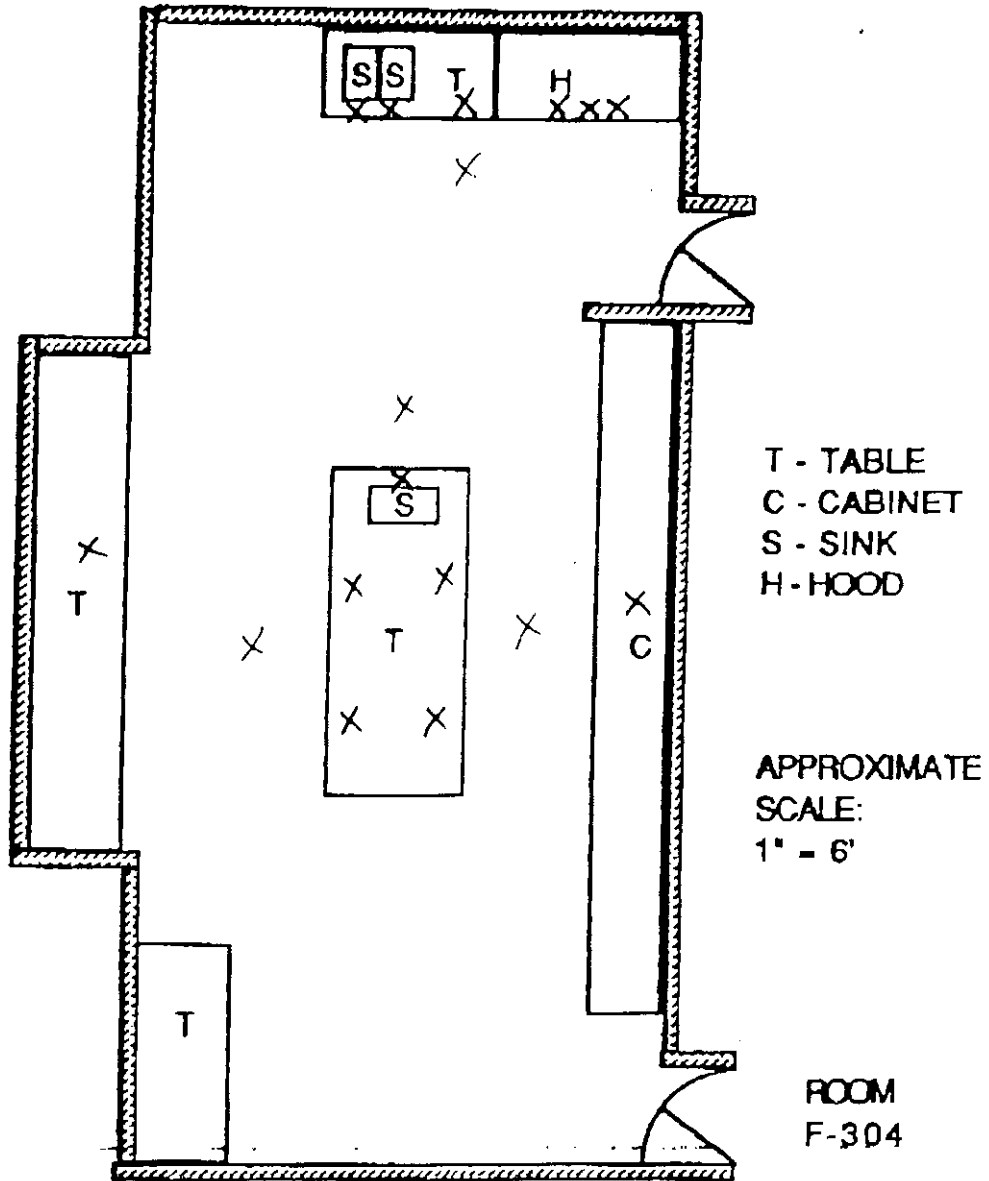


ROOM  
F-214

- T - TABLE
- C - CABINET
- S - SINK
- H - HOOD

APPROXIMATE  
SCALE:  
1" = 6'

ATTACHMENT #5



ATTACHMENT #6

