

Kirkville College of Osteopathic Medicine

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Basic Sciences Office
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816 626-2320

April 8, 1981

Emmett S. Manley, Jr., Ph.D.
Associate Dean for Basic Sciences
816 626-2323

D. G. Wiedeman, Acting Chief
Materials Radiation Protection Section
U.S. Nuclear Regulatory Commission,
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

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RE: License No. 24-17210-01

Dear Mr. Wiedeman:

With respect to your letter of March 23, 1981 relative to the inspection conducted by Mr. W.P. Reichhold the following is our reply:

1. Wipe test not performed:

Wipe test of laboratory areas have been performed and records have been established for recording the results of these tests. To avoid further non-compliance these records will be checked quarterly by a representative of the KCOM Biohazards Committee, and all laboratories will be required to submit copies of the results of these tests semi-annually. Full compliance was achieved April 7, 1981. *OK*

2. Survey Meter Calibration:

The two survey meters in question were picked up by our consulting physicist for calibration. These meters were calibrated on March 28, 1981 and returned to their respective laboratory areas. To avoid further non-compliance a representative of the KCOM Biohazards Committee will report on the status of the calibration of all survey meter equipment at the quarterly meeting. If calibration is due the meters will be returned to a licensed calibration facility. Full compliance was achieved March 28, 1981. *OK*

3. Based on the following formula the amount of 3-H which may be incinerated daily is 6530 uCi; however, not more than 1 curie or a combination of 1 curie of 3-H and 14-C will be incinerated per year with the exception that 3-H and 14-C will be disposed in accordance with Part 20.306 of 10 CFR when applicable.

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APR 10 1981

D.G. Wiedeman, Acting Chief
Page 2
April 8, 1981

Calculation for 3-H

Incinerator = 800 CFM air flow
10 CFR Appendix B Table 11-3H = 2×10^{-7} uCi/ml

$$A = CV \quad C = 2 \times 10^{-7} \text{ uCi/ml}$$
$$V = 800 \text{ ft}^3/\text{min} \times 1.699 \times 10^6 \frac{\text{ml/hr}}{\text{ft}^3/\text{min}} = 1.36 \times 10^9 \text{ ml/hr}$$

$$A = 2 \times 10^{-7} \text{ uCi/ml} \times 1.36 \times 10^9 \text{ ml/hr} \times 24 \text{ hr/day} = 6.53 \times 10^3 \text{ uCi/day}$$

All individuals incinerating 3-H have been instructed that the above stated limits apply to the amount of this material that may be disposed of in any one day by incineration. The results achieved are that no material has been incinerated which exceeds these amounts nor will they be.

To avoid further non-compliance a list has been supplied to the KCOM Biohazards Committee (Appendix A) which specifies the limits of 3-H and or 14-C, which may be incinerated in any one day instead of the amounts that may be incinerated per year. Full compliance was achieved April 7, 1981.

Although your letter of March 23, 1981 was addressed to the attention of James R. Stookey, D.O., Dean of KCOM, I (ESM) have prepared the reply to your letter. This reflects the fact that, as Chairman of the KCOM Biohazards Committee and Associate Dean for Basic Sciences (the College area in which the isotopes are used), I am the person directly responsible for compliance with the license provisions. The situation has been discussed with Dean Stookey, and he will countersign this letter of assurance.

Sincerely,

Emmett S. Manley Jr.

Emmett S. Manley, Jr., Ph.D.
Associate Dean for Basic Sciences
Chairman, KCOM Biohazards Committee

James R. Stookey D.O.
James R. Stookey, D.O.
Dean of the College

ESM:kcv

cc: Dean Stookey
Mr. Comer
KCOM Biohazards
Committee

State of Missouri
County of Adair

Subscribed and sworn to before me this 8th day of April 1981 by Emmett S. Manley, Jr. and James R. Stookey, D.O.

BILLIE R. ALLISON
NOTARY PUBLIC STATE OF MISSOURI
ADA MO CO
MY COMMISSION EXPIRES JUN. 12 1982
ISSUED THRU MISSOURI NOTARY ASSOC.

Billie R. Allison
Notary Public

APPENDIX A

Daily Disposal Limits for 3-H and 14-C by Incineration

10 CFR 20, Appendix B, Table II

$$3\text{-H C} = \frac{A}{V} \leq 2 \times 10^{-7} \text{ uCi/ml}$$

$$14\text{-cC} = \frac{A}{V} \leq 1 \times 10^{-7} \text{ uCi/ml}$$

14 - CARBON = 3.26 millicuries/day

3 - HYDROGEN = 6.53 millicuries/day

Except that not more than 1 curie of each or a combination of each may be incinerated in any one year.

$$(1) \frac{C-14}{1 \text{ curie}} + \frac{H-3}{1 \text{ curie}} = 1 \text{ curie}$$

$$(2) \text{ or } \frac{C-14}{3.26 \text{ mCi}} + \frac{H-3}{6.53 \text{ mCi}} = 1 \text{ in any one day.}$$