

**KAISER
FOUNDATION**
HOSPITALS

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March 7, 1983

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Mr. James H. Myers
Materials Licensing Branch
Division of Fuel Cycle and Materials Safety
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Myers:

This is a response to your letter of February 8, 1983, Control No. 11678. To resolve the two items mentioned in your letter, the following actions have been taken:

1. Decha Intaraprasong, M.D. has been appointed the Radiation Safety Officer for Kaiser Foundation Hospital and will be directing the Radiation Safety Program. All matters concerning radiation safety will be brought to the attention of Dr. D. Intaraprasong who will investigate these matters and consult with management to ensure compliance of license conditions and federal regulations.

2. The second item refers to the calibration methods used by Gamma Corporation to calibrate our institution's radiation detection instruments. Attached to this letter you will find the Certification of Calibration of the sealed source that is used in the Victoreen Model 681 instrument calibrator. Additionally, you will find a copy of the documentation that is provided for each instrument that is calibrated. Please note that the source is of sufficient activity as to provide 687 mR/hr at 20 cm.

The radiation survey meters listed in our renewal application are used to measure radiation exposure rates in mR/hr (from 0.05 to 2000 mR/hr) and contamination levels in units of counts per minute. Survey meters that are used to measure exposure levels in units of mR/hr will be calibrated with the Victoreen 681 instrument calibrator as per Gamma Corporation's procedures. These survey meters will not be calibrated by the electronic method. A Victoreen 425 count rate meter and low energy scintillation detector is also listed in our application. It is not appropriate to attempt a source calibration on this type of instrument since it only reads out in units of counts per minute, and is intended as a monitor for contamination and the detection of the presence of low energy radiation.

We confirm that radiation survey meters used to perform daily, weekly and other radiation surveys (in units of mR/hr) will be calibrated by the source method.

I hope this information will resolve the two items in our renewal application.

Sincerely,

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REG5 LIC30
53-05379-01 PDR

Ronald J. Mikolajczyk
Ronald J. Mikolajczyk
Hospital Administrator

RJM:cg

Enclosures 2
c Pathology, Radiology, Nick Rinaldi

83 MAR 14 10:07

Standards Laboratory Report



Technical Operations, Incorporated

Radiation Products Division
Burlington, Massachusetts 01803

EXTERNAL CONTAMINATION OR LEAKAGE

DATE 8-30-77 MICROCURIES CS-137 BY J.R.

DATE 8-30-77 MICROCURIES CS-137 BY J.R.

TECHNICAL OPERATIONS INC.

GAMMA RAY SOURCE CALIBRATION

Isotope Cs¹³⁷ Test No. 0316 Date Measured 8-30-77

Source Identification S-244 Roentgens/Hr. at 1 Meter .0312 Curies .0925

Source decay correction factors

| Age In: | Cobalt-60 | | Iridium-192 | | Cesium-137 |
|------------------|-----------|-------|-------------|-------|------------|
| | years | mos | weeks | days | years |
| 0 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| 1 | .877 | .989 | .937 | .991 | .977 |
| 2 | .768 | .978 | .877 | .981 | .955 |
| 3 | .674 | .967 | .821 | .972 | .933 |
| 4 | .590 | .957 | .769 | .963 | .912 |
| 5 | .518 | .946 | .721 | .954 | .892 |
| 6 | .454 | .936 | .675 | .945 | .871 |
| 7 | .398 | .926 | .632 | .937 | .852 |
| 8 | .349 | .916 | .592 | | .832 |
| 9 | .306 | .905 | .554 | | .813 |
| 10 | .268 | .895 | .519 | | .795 |
| 11 | .235 | .886 | .486 | | .777 |
| 12 | .206 | .877 | .455 | | .759 |
| T _{1/2} | 5.26y | | 74.0d | | 30.2y |
| Rhm/cl | 1.30 | | 0.55 | | 0.32 |

The gamma-ray emission of the sealed source herein described was intercompared with the radiation from a reference standard cobalt-60 source whose intensity had been established relative to a National Bureau of Standards calibrated cobalt-60 source. Comparison was made either with an uncollimated plastic-lined ionization chamber encased in a 3-mm thick aluminum container sealed against atmospheric pressure, or with an NBS-calibrated Victoreen R-meter whose readings were compensated for atmospheric pressure and temperature. All readings were corrected for air scattering and absorption. The source was measured with its axis of symmetry parallel with/perpendicular to the line joining source and detector. The reported output is believed to be accurate within ± 3 percent, the stated uncertainty of the reference NBS sources. Precision is believed to be better than ± 1 percent.

Signed Paul J. Pendleton

Calibration performed for: Health Physics Assoc.

Mod. # 726 S/N 141

Wahiawa, Hawaii

