## MEMORIAL HOSPITAL

June 28, 1988

Mr. John D. Kinneman, Chiei Nuclear Materials Safety Section B Division of Radiation Safety and Safeguards United States Nuclear Regulatory Commission Region I 475 Allendale Road King of Prussia, PA 19406

RE: Reply to your letter (dated May 17, 1988) Docket #030-01299 License #06-13664-01

Dear Mr. Kinneman:

Concerning "a" of Appendix A of your letter, the linearity test that you refer to was a linearity test conducted by our nuclear medicine technologis\* and parallel to the cest being performed by our consultant physicist and since it was her first linearity test, it was employed as a learning experience for her. A perusal of the two sets of test results (both dated October, 1987) demonstrated to Marlene (the technologist) that placing an active source quite close to the well counter when assaying another source can lead to erroreous results. Marlene was preparing a radionuclide administration at the same time she was assaying the linearity test source at the 6-hour post initial assay. Her results compared to the physicist's at the time of the test and the results were employed in selecting the "unit dose" method in our facility. Copies of the tests are enclosed with this letter.

In reference to "b" of Appendix A of your letter, we will prepare a graph on semi-log paper similar to the method described in Item C.4 of Appendix D, Section 2. A graph will be prepared and employed in the daily constancy testing as of June 27, 1988.

The chief administrator of the World War II Veterans' Memorial Hospital will be a member of the Radiation Safety Committee forthwith (formerly known as the Radioisctope Committee).

If you have any further questions concerning this matter, please contact Mr. Robert Haydon in the Department of Radiology (203-237-5531).

Sincerely

Martha L. Fordiani Acting Administrator

/mt Enclosure

10

883 Paddock Avenue, Meriden, CT 06450 (203) 237-5531

A community general hospital dedicated to those who gave their lives for their country during World War II. An affiliate of Yale-New Haven Health Services Corporation.

## EDWARD V. KENNELLY, M.S.

RADIOLOGICAL PHYSICIST CERTIFIED BY THE AMERICAN BOARD OF RADIOLOGY 310 GLENWOOD DRIVE GUILFORD, CONNECTICUT 06437 TELEPHONE 203 / 453-4120

World War II Veteran's Memorial Hospital Meriden, Connecticut

Third Quarter Linearity Test on the Dose Calibrator Date: October 3 - 6, 1987

Using a calibrated unit dose of Tc-99m pertechnetate supplied by Syncor, I obtained assay values over a 82 hour period and compared these results with activity values obtained by radioactive decay (normalized to the assayed activity obtained at 30.58 hours post initial assay). The results are given below:

Time Post Initial Assay	Net Assayed Activity	Activity by Decay	Decay/Assay
0.00 hrs 4.49	56.8 mCi 31.9	56.6 mCi	0.996
9.46	17.34	31.6 17.30	0.991
20.54 30.58	4.59	4.57	0.996
40.04	0.485	1.442 0.485	1.000
51.58	136.3 uCi	135.3 uCi	0.993
61.38 72.09	43.9	42.7	0.973 0.924
82.20	3.9	3.8	0.974

The assayed activities were within +/- 7.7% of the activities by decay over the 82 hour period. A plot on semi-log graph paper demonstrates the same agreement with linearity.

Er Kennelly

Linearity OCT # 1987 I October! 5, 1987 Assay time Net Activity. 33.6 mCi! 24.9 mCi <--6 2.12 mCi 24 1.04 mC, 30 .48 · 133 mCi 54 1066 mCi 72 1000 uCi Time Correction factor Predicted 32 33,28mC 16 16.64 mCi 24 2.08 mCi 2 A 30 1.04 mC: 48 ,125 1130mCi ,062 1064 mC: 1007 1007 uC1