



INGHAM
MEDICAL
CENTER

JOHN C. SODERHOLM, MHA
Executive Vice-President

401 WEST GREENLAWN, LANSING, MICHIGAN 48909 (517) 374-2261

April 6, 1981

D. J. Sreniawski
Acting Chief, Materials Radiation Protection
Section 2
United States Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Mr. Sreniawski:

This correspondence is provided in response to your letter of March 16, 1981, concerning the Notice of Violation resulting from the safety inspection survey conducted at Ingham Medical Center on February 24, 1981. Two Severity Level V (Supplement VII) violations were identified.

In accordance with the requirements of 10 CFR 2.201, and for your convenience, the specific violations are addressed below:

1. 10 CFR 35.14 (e)(1)(i) requires that sealed calibration or reference sources possessed pursuant to 10 CFR 35.14(d) be tested for leakage and/or contamination at intervals not to exceed six months.

Response - Contrary to this requirement, the last documented Cs-137 calibration source leak test was performed on November 24, 1976. A wipe test was performed on March 27, 1981 with the following result: 114 cpm background, 106 cpm wipe with a difference of 8 cpm. To assure compliance with 10 CFR 35.14, Ingham Medical Center procedure 15.14.34 (copy appended) has been approved and implemented.

2. Condition No. 16 of your license states the dose calibrator shall be calibrated in accordance with the procedures described in Appendix D, Section 2, NUREG-0338, Revision 1, dated November 1, 1977. Appendix D, Section 2 requires a quarterly linearity calibration of the dose calibrator.

Response - Contrary to this requirement, the last documented calibration was performed on May 5, 1980. In an effort to rectify this violation, a linearity test was performed on March 30, 1981 (documentation appended). Additionally, to insure continued compliance with Condition No. 16, Ingham Medical Center Procedure 15.14.35 (copy appended) has been approved and implemented.

APR 13 1981

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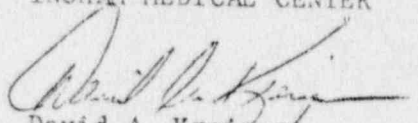
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The raw data and calculations for both the Cs-137 leak test and linearity test is being reviewed currently by the Physicist, with a final written report expected prior to May 1, 1981.

By my signature, I hereby certify that the above information is true and correct to the best of my knowledge and belief.

Sincerely,

INGHAM MEDICAL CENTER



David A. Kreiger
Assistant Vice President

DAK/kb

encl:

cc: Mr. Henry Orth

Signed before me this 7th day of April, 1981


M. Kathleen Bonneau
Notary Public, Ingham County
Commission Expires May 18, 1983



PROCEDURE

RADIOLOGY - NUCLEAR MEDICINE		PROCEDURE	
SUBJECT: DOSE CALIBRATOR CALIBRATION		15.14.35	
SCOPE: ALL NUCLEAR PERSONNEL		PAGE 1 OF 1	
		REF. POLICY:	
		ISSUED BY: H. Orth, R.T. (R)	
EFFECTIVE 25MAY81	REVIEWED:	REVISED:	APPROVED BY: D. Kreiger <i>[Signature]</i>

Purpose: To be in compliance with condition #16 of the IMC license with the NRC which states the dose calibrator shall be calibrated in accordance with the procedures described in Appendix D, Section 2 NNUREG-0338, Revision 1, dated November 1, 1977.

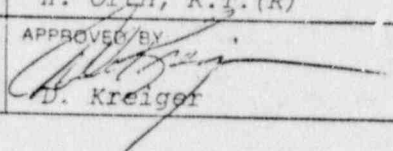
- I. To assure accurate operation of the dose calibrator, the following method will be implemented.
 - A. Test for the following:
 - 1. Instrument constancy (daily)
 - 2. Instrument accuracy (at installation and annually thereafter)
 - 3. Instrument linearity (at installation and quarterly thereafter)
 - 4. Geometrical variation (at installation)
 - B. The actual testing of the dose calibrator will be performed by the radiation physicist and th supervisor as outlined in Appendix D, method for calibration of dose calibrator section 2, procedure 10.8-27 in the U.S. Nuclear Regulatory Commission Regulatory Guide Office of Standard Development.
- II. Documentation of the dose calibrator Linearity test will be kept on file with the Manager of the Department of Radiology

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Ingham Medical Center



PROCEDURE

SUBJECT: RADIOLOGY - NUCLEAR MEDICINE Cs-137 CALIBRATION SOURCE LEAK TEST - CONTAMINATION			PROCEDURE PAGE <u>1</u> OF <u>1</u> REF. POLICY:
SCOPE: ALL NUCLEAR PERSONNEL			ISSUED BY: H. Orth, R.T. (R)
EFFECTIVE: 25MAR81	REVIEWED:	REVISED:	APPROVED BY:  U. Kreiger

PURPOSE: To be in compliance with NRC regulation 10 CFR 35.14 which requires that sealed calibration or reference sources possessed pursuant to 10CFR 35.14 (d) be tested for leakage and/or contamination at intervals not to exceed six months.

- I. The 1mCi Cs-137 calibration source leak test will be performed quarterly.
 - A. The test for leakage and/or contamination will be performed by our radiation physicist.
 - B. Documentation of the leakage and/or contamination test will be kept on file with the Manager of the Department of Radiology

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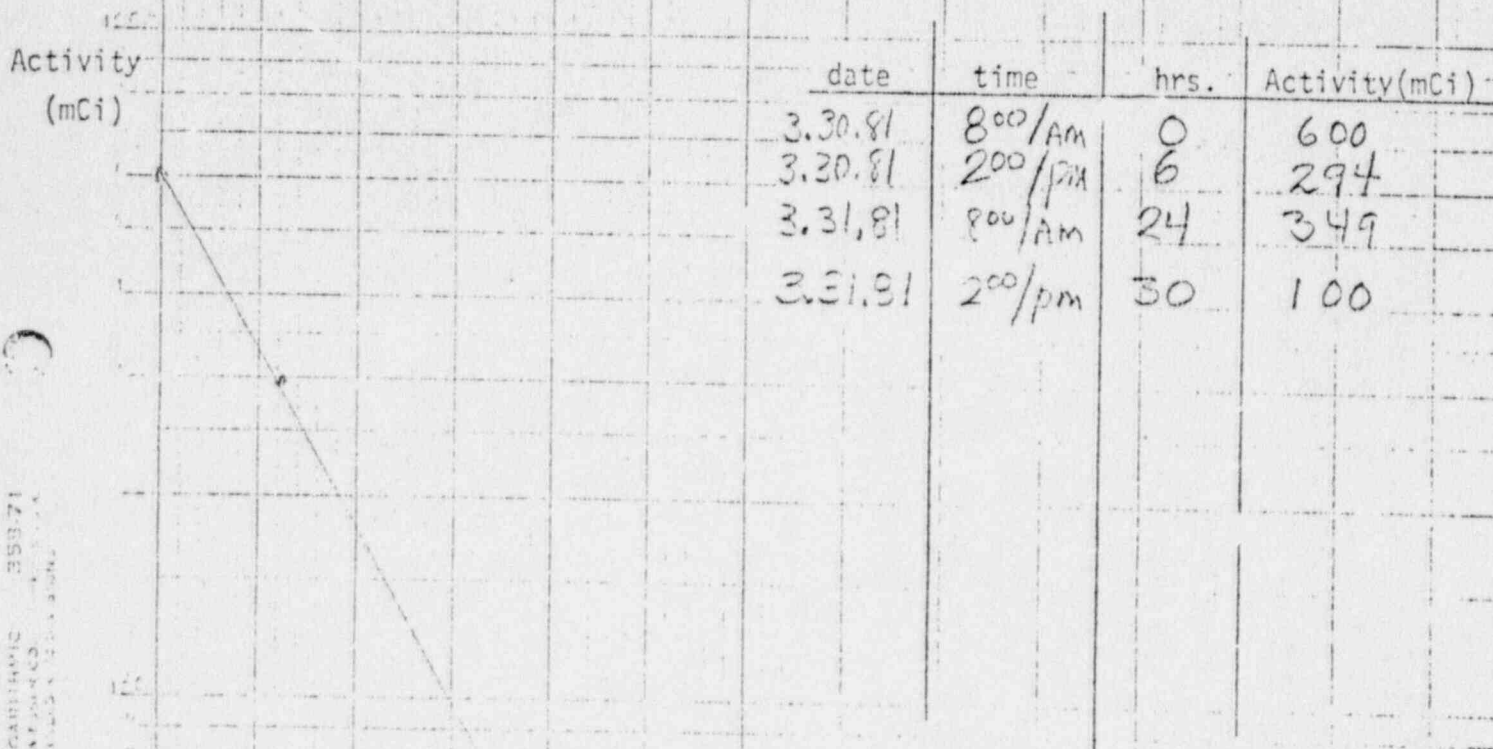
DOSE CALIBRA OR LINEARITY TEST

Facility: Ingram Medical Center

Dose Calibrator: CRC 17

Date: 3.30.81 Radionuclide: ^{99m}Tc

Performed By: Gil Jessen



$$A = A_0 e^{(-\lambda t)}$$

POOR ORIGINAL