

Appendix

NOTICE OF VIOLATION

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Tel-Farmbrook Radiology

License No. 21-20152-01

As a result of the inspection conducted on January 7, 1983, and in accordance with the NRC Enforcement Policy, 47 FR 9987 (March 9, 1982), the following violation was identified:

License Condition No. 18 requires that licensed material be possessed and used in accordance with statements, representations and procedures contained in application dated April 28, 1981 and letter dated July 2, 1981.

The above referenced documents state that the procedures described in Appendix D, Section 2, of the NRC Medical Licensing Guide 10.8, will be followed for calibration of the dose calibrator. Appendix D requires that daily constancy, quarterly linearity, annual accuracy and geometrical variation checks of the dose calibrator be performed and recorded. Constancy and accuracy checks varying greater than  $\pm 5$  percent from the predicted activities indicate that the instrument should be repaired or adjusted.

Contrary to these requirements, linearity and geometrical variation checks have not been performed on your dose calibrator. Also, daily constancy and annual accuracy checks varied greater than 5 percent from predicted activities. Such variances existed for a period of approximately one year before the dose calibrator was repaired and the daily constancy checks continue to vary greater than 5 percent, on the Ba-133 setting, after repairs were performed in September 1982. Some examples of this are noted below:

\*Co-57 half life=271 days  
Product Code: CTR.568  
Source No. 4087MA  
5.4 mCi on December 1, 1980

\*Ba-133 half life=10.8 years  
Product Code: BDR.562  
Source No. 2040MA  
250.7  $\mu$ Ci on August 1, 1980

\*Cs-137 half life=30.17 years  
Product Code: CDR.562  
Source No. 3039MA  
332.6  $\mu$ Ci on August 1, 1980

\*Information taken from the reference source certificate of measurement, supplied by the manufacturer.

Co-57 (dose calibrator setting 199)

<u>Date</u>	<u>NRC Calculated Activity (mCi)</u>	<u>Licensee Measured Activity (mCi)</u>	<u>Approx. Decay time (days)</u>	<u>% Variance</u>
01/82	1.97	1.41	395	28
03/82	1.67	1.32	455	21
06/82	1.34	1.05	545	22
09/82	1.06	0.81	635	23
12/82	0.83	0.79	730	<5
01/83	0.77	0.75	760	<5

Cs-137 (dose calibrator setting 111)

<u>Date</u>	<u>NRC Calculated Activity (μCi)</u>	<u>Licensee Measured Activity (μCi)</u>	<u>Approx. Decay time (years)</u>	<u>% Variance</u>
01/82	322	250	1.42	22
03/82	321	242	1.58	25
06/82	319	237	1.84	26
09/82	317	240	2.08	24
12/82	315	297	2.33	6
01/83	315	315	2.42	<5

Ba-133 (dose calibrator setting 148)

<u>Date</u>	<u>NRC Calculated Activity (μCi)</u>	<u>Licensee Measured Activity (μCi)</u>	<u>Approx. Decay time (years)</u>	<u>% Variance</u>
01/82	229	225	1.42	<5
03/82	226	225	1.58	<5
06/82	222	220	1.84	<5
09/82	219	210	2.08	<5
12/82	216	252	2.33	14
01/83	214	254	2.42	16

Accuracy checks performed by your consultant using the three reference standards noted above resulted in the following:

Co-57

<u>Date</u>	<u>NRC Calculated Activity (mCi)</u>	<u>Consultant Measured Activity (mCi)</u>	<u>% Variance</u>
12/81	2.12	1.61	24
03/82	1.68	1.33	21
08/82	1.1	0.83	24

Cs-137

<u>Date</u>	<u>NRC Calculated Activity (μCi)</u>	<u>Consultant Measured Activity (μCi)</u>	<u>% Variance</u>
12/81	322	240	25
03/82	321	246	23
08/82	318	245	23

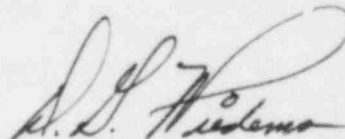
Ba-133

<u>Date</u>	<u>NRC Calculated Activity (μCi)</u>	<u>Consultant Measured Activity (μCi)</u>	<u>% Variance</u>
12/81	230	225	<5
03/82	226	215	<5
08/82	220	203	8

This is a Severity Level IV violation (Supplement VI).

Pursuant to the provisions of 10 CFR 2.201, you are required to submit to this office within thirty days of the date of this Notice a written statement or explanation in reply, including for each item of noncompliance: (1) corrective action taken and the results achieved; (2) corrective action to be taken to avoid further noncompliance; and (3) the date when full compliance will be achieved. Consideration may be given to extending your response time for good cause shown.

1-20-83  
Dated

  
D. J. Sreniawski, Chief *for*  
Materials Radiation Protection  
Section 2