

DOD

April 10, 1997

Norm Steider, President
Memorial Hospital of Michigan City
Fifth and Pine Streets
Michigan City, IN 46360

SUBJECT: NOTICE OF VIOLATION DATED FEBRUARY 14, 1997

Dear Mr. Steider:

This acknowledges receipt of Dr. Richard S. Plank's letter dated March 10, 1997, in response to our letter dated February 14, 1997, transmitting a Notice of Violation (Notice).

Based on a telephone conference between Dr. Plank of your staff and Robert Gattone of my staff on April 7, 1997, it is our understanding that:

- The reason for Violation 1 of the Notice was that you were unaware of the requirement; and
- The reason for Violation 2 of the Notice was that you misinterpreted the requirement.

We have reviewed your corrective actions, which appear to be adequate, and have no further questions at this time. These corrective actions will be examined during a future inspection.

Sincerely,

Original Signed by Roy J. Caniano

Roy J. Caniano, Acting Director
Division of Nuclear Materials Safety

License No. 13-18847-01
Docket No. 030-14256

bcc w/ltr dtd 3/10/97: PUBLIC

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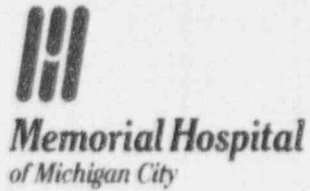
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March 10, 1997

U.S. Nuclear Regulatory Commission
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Reply to Notice of Violation

To Whom It May Concern:

In response to the violations identified during the NRC inspection conducted on January 15, 1997 at Memorial Hospital of Michigan City, License No. 13-18847-01 I am submitting the following information.

In response to the first violation of not following 10 CFR 35.61(b), specifically not labeling each radioactive vial as to its contents, corrective action has been taken to educate the technologist as to the importance of labeling each vial. The vials will now be labeled by the technologist. Full compliance was accomplished on January 29, 1997.

The second violation was in regard to testing of the dose calibrator for geometry dependence as required by 10 CFR 35.50(b)(4), specifically not performing syringe geometrical dependence testing on May 18, 1992. This test was completed by Memorial Hospital staff and a Nuclear Consultant in the manner requested by the NRC on January 29, 1997. Documentation of this test is enclosed. This variance test will continue to be performed in the manner recommended by the NRC with full compliance occurring immediately.

Sincerely,

A handwritten signature in dark ink, appearing to read 'R. Plank', with a long horizontal line extending to the right.

Richard S. Plank, M.D.
Radiation Safety Officer

cc: Regional Administrator
Regional III
801 Warrenville Road
Lisle, IL 60532-4351

Fifth and Pine Streets
Michigan City, Indiana 46360-3330
(219) 879-0202
Fax: (219) 873-2416

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GEOMETRICAL VARIATION CHECK ON DOSE CALIBRATOR

3cc Syringe

Hospital: Memorial Hospital Michigan City Date: 2/3/97
 Manufacturer: Cepinck/synack Model No: CRC.7 Serial No.: 703-5

Purpose: The purpose of this geometrical variation check is to determine the effect of sample volume on the accuracy of radioactivity measurements by the dose calibrator. This procedure is based on recommendations in NRC Regulatory Guide 10.8, Appendix D, Section 2.

Supplies Needed: 2 mCi of Tc-99m, 3cc syringe, ~~30-ml vial~~, butterfly scalp vein set, large syringe (preferably 20 to 30 ml), vent needle.

Procedure:

1. Place approximately 2 mCi of Tc-99m in a volume of 1 ml in a 3cc syringe ~~30-ml vial~~.
2. Insert a butterfly scalp vein set into the stopper of the vial. A vent needle must also be placed in the stopper to prevent a pressure build-up. The tips of the needles should just barely protrude through the stopper to prevent liquid from escaping during the dilution process.
3. Attach a large syringe containing water or saline (non-radioactive) to the butterfly tubing.
4. Place the vial in the dose calibrator chamber.
5. Inject appropriate quantities of water or saline into the vial so readings may be taken at 0.5, 1.0, 1.5, 2.0, 2.5, 3.0 ~~1-ml, 2-ml, 4-ml, 8-ml, 10-ml, 20-ml, and 25-ml~~. Use of the large syringe allows for rapid introduction of solution and recording of activity to minimize the effect of the Tc-99m decay. If the entire procedure can be carried out within two minutes, no decay corrections should be necessary.

Record the results below.

7. Calculate the % variance based on the 20 ml volume reading as follows:

$$\frac{(\text{Activity at 20 ml volume}) - (\text{Activity at other volume})}{\text{Activity at 20 ml volume}} (\times 100\%) = \% \text{ Variance}$$

8. Variances outside of $\pm 10\%$ indicate the need for preparation of correction factors.

<u>TIME</u>	<u>VOLUME</u>	<u>ACTIVITY</u>	<u>% VARIANCE</u>
<u>0809:30</u>	<u>.1</u>	<u>2.38</u>	<u>3.0%</u>
<u>0810</u>	<u>.5</u>	<u>2.32</u>	<u>1%</u>
<u>081020</u>	<u>1.0</u>	<u>2.30</u>	<u>0</u>
<u>081045</u>	<u>1.5</u>	<u>2.30</u>	<u>0</u>
<u>081105</u>	<u>2.0</u>	<u>2.29</u>	<u>0.3%</u>
<u>081130</u>	<u>2.5</u>	<u>2.30</u>	<u>0</u>
<u>081150</u>	<u>3.0</u>	<u>2.29</u>	<u>0.3%</u>

Signature: Eddie [Signature]

[Signature] 3-11-97