UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30323

JUN 06 1990

Matilde Brenes Hospital
ATTN: Mr. Manuel Vazquez
Hospital Administrator
J.9 Betances Avenue
Bayamon, PR 00619

Gentlemen:

SUBJECT: NRC REPORT NO: 52-19112-01/90-01

Thank you for your responses of March 26 and May 29, 1990, to our Notice of Violation, issued on March 7, 1990, concerning activities conducted under NRC License No. 52-19112-01. We have evaluated your responses and found that they meet the requirements of 10 CFR 2.201. We will examine the implementation of your corrective actions during future inspections.

In your response of May 29, 1990, you stated that you intend to prepare and submit a license renewal application to reflect your current radiation safety program. However, you are required to conduct your program in accordance with your present license conditions until your license renewal is issued.

We appreciate your cooperation in this matter.

Sincerely,

for William E. Cline, Chief
Nuclear Materials Safety and
Safeguards Branch
Division of Radiation Safety
and Safeguards

Enclosure:
Regulatory Guide 10.8

cc w/o encl:
Commonwealth of Puerto Rico

ANNEX 1

PROCEDURE FOR DETERMINATION OF MINIMUM DETECTABLE ACTIVITY, MDA

LUDLUM -14 C - PROBE 44.7
S/N 5206

1. Obtain a known amount of activity for the radionuclide for which MDA is being computed (less than 10 nCi)

2. Calibrate the G.M. meter on the appropriate range with this sample. Record setting.

3. Set the LLD and window to the values used in the clinic for this radionuclide.

4. Obtain a 2 minute background count, then a 2 minute count of the sample radionuclide and then another 2 minute background count.

5. Calculate the detection limit L_D, using the following formula:

$$L_D = 2.32\sqrt{T} + 4.67\,(R_B/T)^{1/2}$$

where T= counting time in minutes, R_B=background count rate, CPM

For a 2 minute counting time

$$L_D = 1.36 + 3.30\,(R_B)^{1/2}$$

6. Calculate MDA for the radionuclide as follows:

$$MDA = L_D \left(\frac{\text{Activity of radionuclide standard}}{\text{Standard (CPM)} - \text{Background (CPM}} \right) = \frac{L_D}{E_{FF}}$$

Calculations (5/29/92): $R_B = 25$ cpm

$E_{FF} = 15\%$

$L_D = 1.36 + 3.3\,(25)^{1/2}$

$= 1.36 + 16.5$

$= 17.9$

$MDA = \frac{L_D}{E_{FF}} = \frac{17.9}{0.15} = 120$ dpm