West Jersey Health System

Kevin M. Manley
Executive Director
Garden State Community Hospital

April 9, 1985

John E. Glenn, Ph.D.
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, Pa. 19406

Re: Docket No. 030-09466
License No. 29-15615-01

Dear Dr. Glenn:

In response to the January 14, 1985 NRC Inspection (Report No. 30-09466/85-01), please see the attached report of our Radiation Safety Officer, Mary E. Moore. I support the corrective action described in her report.

If any additional information or clarification is required, please contact her directly.

Sincerely,

Kevin M. Manley
Executive Director

KMM/sld

CC: Barry Shurman, M.D.
Seymour Piwoz, M.D.
Mary E. Moore, M.S.
Joyce Zimmerman, C.N.M.T.

Route 73 & Brick Road, Marlton, NJ 08053 • (609) 596-3700

Mary E. Moore
Radiological and Health Physics Consultant
58 Red Leaf Road
Moorestown, NJ 08057

April 4, 1985

Kevin Manley
Executive Director
Garden State Community Hospital
Route 73 & Brick Road
Marlton, NJ 08053

Dear Mr. Manley,

The following is in reply to the Nuclear Regulatory Commission's January 14, 1985 inspection report (NO. 30-09466/85-01).

VIOLATION A:

1) It is true that the Linearity test was not performed during the Second Quarter of 1982. When this was discovered, I instructed the technician to immediately perform the Linearity Test, but not to back date the report. We used this as our new starting date and have performed the Linearities every three months since then.

2) Contrary to the inspection report, the Linearity Test of the dose calibrator was performed during the First Quarter of 1984. The specific dates were from February 21 -23, 1984.

The technicians are to be commended because they performed this and other tests during the time the entire Nuclear Medicine area was rearranged: The old rectilinear scanner was removed, a new gamma camera and computer were installed, the RIA equipment, files, storage cabinets, and office equipment were relocated during February and March, 1984. The post-move transition and re-organization lasted well into the Fall. Concurrently, the patient load increased while the two technicians were learning how to use the computer and perform new studies. As a result of this, the February, 1984 Linearity Test report was misfiled. Following the NRC inspection, the Nuclear Medicine Supervisor found the missing report. It is now correctly filed with the other Linearity Test reports in the Nuclear Medicine Office.

All test results were within the required +/-5%, which we knew but could not prove without a copy of the test results.

3) The August 6, 1984 Linearity Test was performed and evaluated. The problem was that the rough data had not been

completely transferred to the final report form. This gave the appearance of non-evaluation. The rough data sheet has been lost. The only proof we have of evaluating the performance of the dose calibrator is Item #4.5 of the September 26, 1984 Radiation Safety Committee Meeting Minutes. The dose calibrator was not sent for service at that time because the Lineary Test results were within the required +/-5%.

CORRECTIVE ACTION:

1) We will continue writing reminders on the department calender at the beginning of each month the Linearity Test is due.

2) We have changed the filing system for the Linearity Test reports. This change has already provided better control of the reports. Also, the rough data sheet is now being stapled to the final report form.

VIOLATION B: THIS IS AN ERROR. THE ITEMS LISTED WERE NOT VIOLATIONS FOR THE FOLLOWING REASONS:

1) The October, 1984 Linearity Test results showed that the smallest measured activity level did exceed +/-5%. Contrary to the NRC inspection report, this was noted during the audit on November 27, and the Linearity Test was repeated on December 5, 1984. At that time all the measured activities were within the required +/-5%, so no service was required. Copies of these reports are attached.

2) Contrary to the NRC inspection report, all the measured activity levels were within the required +/-5% for the May 7, 1984 Linearity Test results.

The problem was not with the dose calibrator but with the method of calculation given in NRC Regulatory Guide 10.8. (This is the method used by the technician.) This method depends on the measured activity for the 30 Hour decay value. If this MEASURED value exceeds +/-5%, then the CALCULATED activity values will exceed the allowed limits. In our case, the 30 hour decay MEASURED activity was at the -5% limit. This caused the CALCULATED activity for the original 62.5 millicuries to be 57.6 millicuries instead of 62.5 millicuries. This is a difference of 7.8%. Therefore, the dose calibrator erroneously appeared to be operating incorrectly.

When I check the Linearity Test results I do not use the calculation method given in Regulatory Guide 10.8. I calculate the activities using the decay factor for Technetium-99m and the decay time involved. Then I compare the measured with my calculated activities. These values are written in red on the attached form, and show the agreement between the measured and the calculated activities. The technician will use these decay factors instead of those in Regulatory Guide 10.8 for future Linearity Tests.

The inspector could have easily misread the calculated +/-5% values, because the technician inadvertently reversed the sequence of the +5% values with the -5% values.

Since the dose calibrator was operating properly and the department was still in transition, I did not ask the the technician to rewrite her calculations.

CORRECTIVE ACTION: NONE REQUIRED SINCE THERE WAS NO VIOLATION.

If you have any questions concerning the above, please do not hesitate to call me at 342-2308.

Sincerely,

Mary E. Moore

Mary E. Moore
Certified Radiological Physicist

Enclosure

cc Barry Shurman, M.D.
Seymour Piwoz, M.D.
Joyce Zimmerman, C.N.M.T.