



HARRISBURG HOSPITAL

SOUTH FRONT STREET
HARRISBURG, PENNSYLVANIA 17101-2099

DEPARTMENT OF RADIOLOGY AND DIAGNOSTIC IMAGING

Section of Nuclear Medicine
(717) 782-5390

George L. Jackson, M.D., Director

H. J. Bronfman, M.D.	D. W. Hottenstein, M.D.
J. S. Burkle, M.D.	B. K. Kunkel, M.D.
D. R. Buxton, M.D.	W. B. Miller, Jr., M.D.
J. R. Croteau, M.D.	P. V. Plourde, M.D.
G. S. Durisek, M.D.	H. S. Rabin, M.D.
H. E. Fink, Jr., M.D.	R. P. Stewart, M.D.
F. J. Gallia, M.D.	G. J. Triano, M.D.
B. B. Giuliani, M.D.	T. J. Zambarano, M.D.

April 5, 1988

Mr. Frank Costello
Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Dear Mr. Costello:

Thank you for your unscheduled inspection on 3-24-88. I regret that prior commitments prevented me from being present for the exit interview. The very capable people with whom I work have identified from that meeting two problems that need to be addressed and five suggestions for our consideration.

PROBLEMS:

1. We will order a high range survey meter so that we will have one on the premises at all times.
2. There are three lockable doors in our Radiochemistry area. It is our plan to lock the two interior doors leading to storage areas of radioactive materials when no one is present in that area. We would leave the exterior door unlocked during working hours to permit easy access to the records and to the dose calibrator so as not to create a hardship for our staff. This would accomplish your recommended goal.

SUGGESTIONS:

1. Regarding the calculations for disposal of radioactive iodine thru the sewer system, enclosed please find a letter which has been a part of the procedure and safety manuals for over a year. The personnel did not share this with you. As you can see, all the necessary calculations have already been performed.
2. We will submit a recommendation to the Radioisotope Committee Amendment to revise our Radiation Safety Program which states that syringe shields should be used at all times. We recommend that when the radiochemist aspirates the patient dose, a syringe shield is not required. From data previously collected, we know that the use of syringe shields does not permit us to aspirate the required dose of radioactive material with acceptable accuracy (because you can't see bubbles, etc.).

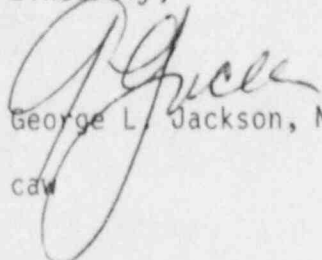
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3. For many years our Radiation Safety Program included the measurement of radiation levels in the patient rooms adjacent to the patient admitted for ablative radioactive therapy. During those years when the dose of radioiodine administered was generally greater than 150 mCi, we never observed radiation levels in adjacent patient rooms that would place the patient at risk. Because of that experience, since the dosage of radioactive iodine administered currently is significantly smaller, and because it heightens the uninvolved patient's anxiety (when someone comes into their room with a radiation monitor), we have elected to discontinue that practice.
4. It was noted that you thought the reports of our wipe tests should be expressed in units of disintegrations per second rather than counts per minute. As you probably know, our wipe tests are analyzed in a well counter using an automated sample changer set to record all events observed above a threshold of 30 kev. This procedure is utilized because we do not know specifically what radioactive element may be the offending agent. Because we do not know that element at the time of the initial analysis and because we therefore do not know the efficiency of the detector, we cannot assume that each count represents a single disintegration.
5. With regard to checking the performance of survey meters on a daily basis, you have recommended that not only is the battery check performed but also a daily check against the radioactive source. This can be done easily.

I trust this letter will be made a part of your report of the site visit.

Sincerely,


George L. Jackson, M.D.
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DEPARTMENT OF NUCLEAR MEDICINE
(717) 782-5390

January 7, 1987

Gan Kwee, M.D.
Chairman, Dept. of Pathology
Harrisburg Hospital
S. Front Street
Harrisburg, PA. 17101

Dear Dr. Kwee:

As per the request from the RadioIsotope Laboratory, review of the calculation of permissible levels of release of radioactive nuclides into the sanitary sewer system at the Harrisburg Hospital was performed.

Review of the applicable rules and regulations (Federal Register, Title X; 20.303) indicates that readily soluble or dispersable radioactive nuclides only can be released into the sewer. It further specifies that one should know the amount of flow in the sewer daily. Assuming a 475 bed facility and 1000 liters/bed/day, one would anticipate that 4.75×10^6 ml/day would approximate the average flow. Consultation with the appropriate table indicates that the maximum permissible concentration of 125-I in liquid form is 4×10^{-5} uCi/ml. Therefore, with the flow noted above, one could dispose of 19 mCi 125-I per day.

Review of the records of receipts of radioactive materials in the RadioIsotope Laboratory indicates that routine orders received by that laboratory equal approximately 1800 uCi 125-I yearly. Allowing for other emergency orders which would even double that would indicate that in one year receipt is considerably less than permitted releases into the sanitary sewer daily. Therefore, it is not logical to assume that there are any circumstances in which the RadioIsotope Laboratory would release more than the maximum permissible daily quantity. The same calculation was applied to the other isotopes (57-Co and 59-Fe).

Sincerely,

George L. Jackson, M.D.
Radiation Safety Officer