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SAINT MARY'S
HEALTH SERVICES

200 Jefferson S.E.
Grand Rapids
Michigan 49503
616 774-6000

November 22, 1993

ATTN: Mark Mitchell
Nuclear Materials Inspection, Section 2
U. S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

Re: Radioactivity found in our refuse container
License No. 21-01078-01

Dear Mr. Mitchell:

This letter is being written to officially inform the NRC of the incident involving a small amount of radioactive material that was discovered in our normal (non-radioactive) trash container on November 2, 1993. Your recommendations, as discussed during our telephone conversation on November 3, were to:
1. Locate the radioactive trash and return it to our radioactive storage room, or
2. Label the container with a "Caution, Radioactive Material" sign, and return the trash container to St. Mary's Hospital for short-term storage.
The recommendation was also made that I accompany the trash container when it was returned to the Incineration facility for disposal and, even though a report is not required by NRC regulations, that we file a report to keep your office informed.

November 2 The hospital was notified by Ogden Martin Systems of Kent, Inc. (the company that manages the local trash incineration facility) that our trash container had exceeded their radiation survey trigger levels. The sealed source inventories, for Radiation Oncology and Nuclear Medicine, were checked and we confirmed that no sealed sources were missing. Several people, including myself, went to the Incineration facility to make our own measurements and to discuss the issue with the management of Ogden Martin Systems. We measured 0.13 mR/hr at the surface of the trash container.

I secured the door to the trash container with a padlocked chain and labeled it with a "Caution, Radioactive Material" sign. To insure that no significant personnel were exposed or contaminated, I surveyed Kim Venema (housekeeper for Nuclear Medicine) and found no evidence of contamination. The Michigan Department of Public Health (Don Perry) was informed of the incident by telephone.

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November 3 I discussed this issue with Mark Mitchell and Jack Robe of the NRC.

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November 4 — The trash container was returned to St. Mary's Hospital so that we could be sure that we maintained control of the radioactive material.

November 16 — The incident was discussed at our Radiation Safety Committee meeting. The committee decided to implement the following corrective actions: 1. Review with the Nuclear Medicine staff the proper procedure for surveying trash; 2. Purchase a more sensitive radiation survey meter; and 3. Lower our trigger level for trash from 0.05 mR/hr to 0.02 mR/hr.

November 22 — The trash container was returned to the Incineration facility and accepted for disposal (exposure = bkg. [≤0.02 mR/hr]).

Several factors lead us to the conclusion that the source of the contamination was trash from an I-131 thyroid ablation treatment. First, we released an I-131 therapy patient on Friday, October 29. The results of the room survey and the survey of the trash showed that both were at background levels for radioactivity. Some of the patient's linen was found to be contaminated so these articles were placed in a plastic bag, labeled and sent to our long term storage room. It is possible that very low level amounts of radioactivity were present in the trash but missed detection because of the limits in sensitivity for our survey meter (Eberline model E-120, lowest scale is 0-0.5 mR/hr) or perhaps due to the relatively long response time. Second, using measured exposure values, it was confirmed that the radioactive material has a half-life of approximately 8 days.

The planned corrective actions are listed below.

1. Review with the Nuclear Medicine staff the proper procedure for surveying trash. This training was performed at the Nuclear Medicine departmental meeting held on November 18.
2. Purchase a more sensitive radiation survey meter. We are in the process of evaluating meters to select a unit that is both sensitive (μR/hr) and has a short response time.
3. Lower our trigger level for trash from 0.05 mR/hr to 0.02 mR/hr.

If you have any questions or concerns, I can be contacted at (616) 732-3017.

Sincerely,

Dale J. Schippers

Dale J. Schippers
Radiological Physicist / RSO

cc: Larry Genzink, Radiology Manager
John Schwartz, Risk Manager