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INFORMATION NOTICE 03-01

GUIDELINES FOR KEEPING OCCUPATIONAL DOSES AND DOSES TO MEMBERS OF  
THE PUBLIC ALARA BY ADEQUATE RADIATION MONITORING IN MEDICAL  
FACILITIES

**Addressees**

All medical use licensees.

**Purpose**

The Radiation Control Program (the Agency) is issuing this information notice to remind licensees of their responsibility to perform radiation monitoring of treadmills and rooms following nuclear cardiac stress tests. It is expected that recipients will review the information for applicability to their facilities and consider appropriate actions. However, this information notice does not contain any new requirements; therefore, no specific action nor written response is required.

**Description of Circumstances**

It has come to the attention of the Agency that radiation monitoring of treadmills following nuclear cardiac stress tests is not being performed at frequencies sufficient to prevent contamination and to ensure that doses to workers and members of the public are as low as is reasonably achievable (ALARA).

Contamination surveys should be performed:

- a. Routinely, to evaluate radioactive contamination that could be present on surfaces of floors, walls, laboratory furniture, and equipment
- b. after any spill or contamination event

- c. when procedures or processes have changed

Contamination can occasionally occur during nuclear cardiac stress tests. Using radionuclides with a half-life of up to 74 hours, contaminated surfaces will remain contaminated for a relatively long time if not decontaminated. It is, therefore, important that medical facilities have appropriate radiation safety measures in place that will (1) quickly detect the presence of contamination and (2) prevent its spread.

## **Discussion**

Medical facilities must formulate their survey procedures to meet the requirements of 105 CMR 120.210(B), 105 CMR 120.225(B), and 105 CMR 120.526. In general, Agency inspection reports indicate that medical facilities do adhere to the survey requirements of 120.526, but frequently overlook the ALARA and preventative survey requirements of 105 CMR 120.210(B) and 120.225(A).

In general, 105 CMR 120.526 outlines the survey requirements that are required, at a minimum, to be recorded, for ambient radiation dose rate and contamination at medical facilities. More frequent surveys are expected - though not always recordable - as outlined in 105 CMR 120.210(B) and 105 CMR 120.225(A).

More specifically, 105 CMR 120.225(A)(1) requires that surveys must be performed to demonstrate compliance with all requirements of 105 CMR 120.200; and, 120.225(A)(2) requires surveys when it is reasonable under the circumstances to evaluate a radiological hazard that could be present. In other words, the determination of whether a licensee has or has not satisfied 105 CMR 120.200 requirements is not the primary function of the survey requirement. The principal role of the survey is prevention. Surveys performed to fulfill 120.225(A)(1) are recordable, while surveys to fulfill 120.225(A)(2) are not normally recordable.

Adequate survey procedures provide measurable protection for the health and safety of the worker and the public because they provide the information necessary for the establishment of adequate protective measures. The usefulness of this early warning system may be seriously reduced if licensees are not held responsible for failure to conduct any survey or for failure to conduct an adequate survey even though violations of other CMR 120.200 requirements have not occurred. Consequently, citations are appropriate against 105 CMR 225(A)(2) when no other specific CMR 120.200 limit or requirement is violated.

It is well known that patients injected with radioactive material occasionally spill radioactive material from their bodies and/or their IV. No more is this true than during nuclear cardiac tests, when an IV is attached to the patient for extended periods of time while they simultaneously perform a physically stressful exercise such as running/walking on a treadmill. The Agency believes that nuclear cardiac tests are circumstances wherein it is reasonable to perform a radiation survey to prevent contamination and unnecessary external and internal radiation doses to subsequent patients. These surveys are not required to be recorded.

Furthermore, the Agency believes that using treadmills not normally used for nuclear cardiac tests

(when authorized by license amendment) is a procedure change, and therefore is a circumstance wherein it is reasonable to perform a radiation survey to prevent contamination and unnecessary external and internal radiation doses to subsequent patients. Again, these surveys are not required to be recorded.

In conclusion, all of the above is consistent with the ALARA requirement of 105 CMR 120.210(B) whereby [survey] procedures shall be used to ensure that both occupational doses and doses to members of the public are as low as reasonably achievable. It is clear that patients are 'members of the public' when they are exposed to spills and contamination from previous nuclear medicine procedures, and therefore are subject to the ALARA considerations of 105 CMR 120.210(B).

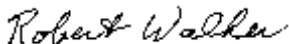
### **Requirements**

Survey procedures at medical facilities must follow the requirements of 105 CMR 120.225A and CMR 120.210, as well as 105 CMR 120.526. Surveys performed to fulfill 120.526 and 120.225(A)(1) are recordable, while surveys to fulfill 120.225(A)(2) are not normally recordable.

Since spills of radioactive material from patients undergoing diagnostic and therapeutic procedures can and do occur, it is reasonable that surveys of any floor surfaces, walls, laboratory furniture, and equipment these patients may have come in contact with will be performed prior to these areas and items being used again. This is especially true for patients undergoing nuclear cardiac stress tests where the probability of spillage of radioactive material is reasonably high.

The survey described above presumes the establishment of trigger limits, decontamination guidelines, and other corrective actions.

Our inspection staff will address this issue during future inspections. This information notice does not constitute any new requirements, therefore, no specific action nor written response is required. If you have questions about the information in this notice, please contact the Technical Contact listed below or the Officer of the Day at (617) 727-6214.

Sincerely,  ely,

Robert Walker, Director  
Massachusetts Radiation Control Program

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