



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TEXAS 76011

June 14, 1978

Department of the Army
Fitzsimons Army Medical Center
Denver, Colorado 80240

Gentlemen:

The enclosed Circular 78-10, is forwarded to you for information. If there are any questions related to your understanding of the suggested actions, please contact this office.

Sincerely,

K. V. Seyfrit
K. V. Seyfrit
Director

Enclosure:

1. IE Circular No. 78-10
2. List of IE Circular
Issued in 1978

AMH

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D. C. 20555

IE Circular No. 78-10
Date: June 14, 1978
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CONTROL OF SEALED SOURCES USED IN RADIATION THERAPY

Over the past several months various incidents have been reported to the Nuclear Regulatory Commission (NRC) which involved the inadequate control and accounting of NRC-licensed byproduct material used in the topical, interstitial or intracavitary treatment of cancer. We request that you inform all individuals in your organization involved with the use of sealed sources of byproduct material for therapy about this circular. Following are examples of incidents reported to the NRC:

- . A patient while undergoing radiation therapy for cancer had twelve iridium-192 seeds containing approximately 0.5 mCi each implanted but only eight removed at the desired time. The remaining four iridium seeds were noticed missing about three months later. Licensee follow-up revealed that the remaining four iridium seeds were still in the patient.
- . A patient receiving radiation therapy for cervical cancer had two radium applicators implanted. Although both were scheduled to be removed two days later, only one was removed at that time. The second applicator was noticed missing about one month later. Licensee follow-up revealed that the radium loaded applicator was still in the patient.
- . An applicator containing two 79 mCi cesium-137 sources was removed from a patient and returned to the storage room, but not immediately dismantled. A routine inventory two weeks later revealed that one of the two sources had been returned to its proper storage place but the other was missing. The hospital was unable to locate the missing source or determine who had disassembled the applicator.
- . Another hospital reported that a 40 mCi cesium-137 uterine implant was dislodged from a patient and only after an extensive search was it found in a laundry room floor drain trench.

NRC recommends that the following actions be considered by each licensee authorized to use sealed sources in topical, interstitial or intracavitary

treatment of cancer. These recommended actions may already be a part of your program and may be conditions of your license. If you change any procedures which are conditions of your license, you must notify the Radioisotope Licensing Branch of NRC so that your license may be amended.

1. Review the adequacy of your procedures for the use and control of sealed sources in therapy. Such procedures should include:
 - a. Written instructions covering all phases of use and control. These instructions should be posted and/or distributed to all individuals involved with the use of therapeutic sources.
 - b. Establishment and maintenance of a log containing the physical location of each source. This log should contain a record by date of sources received, removed from storage, in use, and removed from patients. For sources being used in patients, the log should state the name of the responsible physician and the patient. When sources are removed from a patient, the sources should be immediately counted and a comparison made with the log entry when the sources were removed from storage to assure that all sources are accounted for.
 - c. Requirements for survey of each patient using proper radiation detection instrumentation when radioactive sources are implanted and removed. In addition, the patient's room, the linen, and material leaving the room should be surveyed during treatment for sources that may become dislodged.
 - d. Requirements for the performance of periodic inventories of all sealed radioactive sources. These inventories should be performed on a schedule to assure control of the sealed sources but on a schedule no less than that required by your license and/or 10 CFR Part 35.14(b)(5)(v).
 - e. Suitable control and restriction of access to, and provisions for security of, radioactive sources.
2. Assure that periodic audits or other management controls are exercised to ensure that procedures are followed.

No written response to this circular is required. If you require additional information regarding this matter, contact the Fuel Facility and Materials Safety Branch of the appropriate NRC Regional Office.

LISTING OF IE CIRCULARS ISSUED IN 1978

Circular No.	Subject	First Date Of Issue	Issued To
78-01	Loss of Well Logging Source	4/5/78	All Holders of Well Logging Source Licenses
78-02	Proper Lubricating Oil for Terry Turbines	4/20/78	All Holders of Reactor Operating Licenses (OL) or Construction Permits (CP)
78-03	Packaging Greater Than Type A Quantities of Low Specific Activity Radioactive Material for Transport	5/12/78	All Holders of Reactor Operator Licenses (OL), Construction Permits (CP), Fuel Cycle, Priority 1 Material and Waste Disposal Licenses
78-04	Installation Error That Could Prevent Closing of Fire Doors	5/15/78	All Holders of Reactor Operating Licenses (OL) or Construction Permits (CP)
78-05	Inadvertent Safety Injection During Cooldown	5/23/78	All Holders of Reactor Operating Licenses (OL) or Construction Permits (CP)
78-06	Potential Common Mode Flooding of ECCS Equipment Rooms at BWR Facilities	5/25/78	All Holders of Reactor Operating Licenses (OL) or Construction Permits (CP)
78-07	Damaged Components On a Bergen-Paterson Series 25000 Hydraulic Test Stand	5/31/78	All Holders of Reactor Operating Licenses (OL) or Construction Permits (CP)

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Circular No.	Subject	First Date Of Issue	Issued To
78-08	Environmental Quali- fication of Safety- Related Equipment at Nuclear Power Plants	5/31/78	All Holders of Reactor Operating Licenses (OL) or Construction Permits (CP)
78-09	Arcing of General Electric Company Size 2 Contactors	6/5/78	All Holders of Reactor Operating Licenses (OL) or Construction Permits (CP)

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