



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TEXAS 76012

April 14, 1980

"PDR HQ"

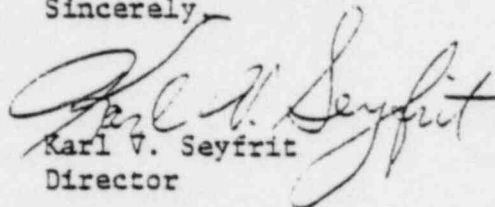
AIR FORCE, DEPARTMENT OF THE
USAF SCHOOL OF AEROSPACE MEDICINE
BROOKS AFB TX 78235
NRC LIC. #: 42-05834-02

Gentlemen:

The enclosed IE Circular No. 80-06 is forwarded to you for information.

If there are any questions related to your understanding of the suggested actions,
please contact this office.

Sincerely,


Karl V. Seyfrit
Director

Enclosures:

1. IE Circular No. 80-06
2. List of IE Circulars
Recently Issued

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

SSINS No.: 6830
Accession No.:
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April 14, 1980

IE Circular No. 80-06

CONTROL AND ACCOUNTABILITY SYSTEMS FOR IMPLANT THERAPY SOURCES

Several incidents have been reported to the Nuclear Regulatory Commission (NRC) during the past two years regarding inadequate control of sealed radiation therapy sources which contain NRC-licensed byproduct materials. These incidents were the result of poor licensee management and failure to comply with the NRC Regulations. All individuals in your institution involved in the use of such sealed sources, as well as the management, should review the contents of this Circular.

DESCRIPTION OF SEVERAL INCIDENTS REPORTED TO THE NRC:

- 1.(a) 20 ribbons containing 135 Ir-192 seeds were implanted in a patient. The radiation therapist removed twelve ribbons in the patient's room but did not count the seeds. The removed seeds were left in a lead container in the patient's room until two days later when the remaining seeds were removed. When the seeds from both removals were counted, it was determined that some seeds were missing. Subsequent surveys have not found all of the missing seeds.
- (b) 182 Ir-192 seeds were removed from a patient and placed in a lead container which was located on a hospital cart. A ten seed ribbon later became displaced from the container, fell to the floor and was swept up by a vacuum cleaner. One seed was ripped out of the ribbon by a rotating brush of the vacuum cleaner and became lodged in the mechanism. The remaining nine seeds were found intact in the ribbon outside of the hospital near where the contents of the vacuum bag are normally emptied.

The above licensees were in violation of 10 CFR 20.207(a) and (b) which require that licensed material stored in an unrestricted area be secured from unauthorized removal from the place of storage, and if not in storage, be under the constant surveillance and immediate control of the licensee.

2. A patient had twelve Ir-192 seeds 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 these seeds were still in the patient.

This is in violation of 10 CFR Part 35.14 (vii) which requires that implant patients remain hospitalized until a source count and a radiation survey confirm that all implants have been removed.

3. An applicator containing two 79 mCi Cs-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 was missing. The hospital was unable to either locate the missing source or determine who had disassembled the applicator.
4. One hospital reported that a 40 mCi Cs-137 uterine implant was dislodged from a patient and only after an extensive search was it found in a laundry room floor drain trench.

NOTICE TO LICENSEES

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.

Review the adequacy of your procedures for the use and control of sealed therapy sources. Such procedures should include:

- a. Written instructions covering all phases of use and control. These instructions should be readily available to all individuals involved with the use of sealed therapy sources. In addition all users should be trained in the implementation of these procedures.
- b. Establishment and maintenance of a source inventory log book. This should contain a running inventory of all sources, based on physical counting, as they are received from the supplier, removed from storage for use in patients, and placed back into storage. The inventory records should clearly indicate the total number of sources in storage at all times.
- c. Verification, by physical counting, the number of sources used in a treatment before they are implanted and immediately after their removal from a patient.
- d. Written instructions for survey of patients by a qualified person using proper radiation detection instruments. This radiation survey should be performed as soon as practicable after the source removal, but in any case before the patient is released from the hospital. In addition, the patient's room, all linen, clothing and other materials should be surveyed prior to removal from the room and upon termination of treatment to determine if any sources may have become dislodged.
- e. Requirement for frequent management audit of source inventory records for completeness and accuracy.

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.

IE Circular No. 80-06
April 14, 1980

Enclosure

RECENTLY ISSUED
IE CIRCULARS

Circular No.	Subject	Date of Issue	Issued to
80-05	Emergency Diesel-Generator Lubricating Oil Addition and Onsite Supply	4/1/80	All holders of a power reactor OL or CP
80-04	Securing of Threaded Locking Devices on Safety-Related Equipment	3/14/80	All holders of a power reactor OL or CP
80-03	Protection from Toxic Gas Hazards	3/6/80	All holders of a power reactor OL
80-02	Nuclear Power Plant Staff Work Hours	2/1/80	All holders of Reactor OLs, including research and test reactors, and CPs
80-01	Service Advice for GE Induction Disc Relays	1/17/80	All licensees of nuclear power reactor operating facilities and holders of nuclear power reactor CPs
79-25	Shock Arrestor Strut Assembly Interference	12/20/79	All licensees and holders of power reactor CPs
79-24	Proper Installation and Calibration of Core Spray Pipe Break Detection Equipment on BWRs.	11/26/79	All Holders of a Power Reactor OL or CP
79-23	Motor Starters and Contactors Failed to Operate	11/26/79	All Power Reactor Operating Facilities and Holders of Reactor CPs
79-22	Stroke Times for Power Operated Relief Valves	11/16/79	All Power Reactor Operating Facilities and all Utilities having a CP
79-21	Prevention of Unplanned Releases of Radioactivity	10/19/79	All holders of Power Reactor OLs and CPs