



DEPARTMENT OF THE ARMY
UNITED STATES ARMY RESEARCH LABORATORY
2800 POWDER MILL ROAD
ADELPHI, MARYLAND 20783-1197

REPLY TO
THE ATTENTION OF

February 19, 1997

Risk Management Division

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Dear Director:

This letter is being submitted in accordance with 10 CFR 36.83 to report a failure of our backup alarm system at our cobalt-60 facility irradiator, located in building 504 of the address indicated on the letterhead above. The irradiator is authorized by license 19-17250-05. A telephonic report was made at 1:49 PM on January 21, 1997, to Ms. Betsy Ulrich of Region I, and another on January 22, 1997, to the Operations Center.

On January 20, 1997, at approximately 6:00 PM, our facility supervisor found, upon visiting the facility, that the back-up alarm system was activated even though the facility was not being used at the time, and the cobalt-60 sources were stored safely at the bottom of the pool. On January 21, 1997, our chief operator inspected the system and determined that the semiconductor relay that activates the back-up alarm had failed. A replacement relay was therefore ordered. Use of the facility for in-air operations was suspended while awaiting arrival of the new relay. On February 4, 1997, the new relay arrived, was installed, and was found to be functioning correctly upon testing.

The relay that failed is manufactured by Crydom, model D1210S. The cause of the relay failure is unknown, but is believed to be due to normal wear, tear, and fatigue. In what we believe was an unrelated event, heat was lost to the mechanical room that services the cobalt-60 facility. As a result, a water pipe froze and broke in the mechanical room, and the room was flooded with water until it was noticed and repaired. A small amount of moisture made its way into the cable trench in the cobalt-60 facility control room, but the chief operator does not believe this was the cause for the failure of the back-up alarm relay. It was because of the water line break that the facility supervisor was visiting the facility on January 20, 1997, to assess any potential impact on facility function and safety.

Our license authorizes 60,000 curies of sealed cobalt-60, although the current inventory is only about 12,000 curies. No exposure was involved with this equipment failure or the corrective actions taken.

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If you have any further questions, please feel free to contact my Radiation Protection Officer, Mr. Michael Borisky, at (301) 394-2218.

Sincerely,


G. J. Williams
Colonel, U.S. Army
Chief of Staff

Copies Furnished:

U.S. Army Materiel Command Safety Office (Mr. John Manfre)

U.S. Nuclear Regulatory Commission, Region I, 475 Allendale Road
King of Prussia, Pennsylvania 19406-1415