

BOX 10172 LAMBERT FIELD • ST LOUIS, MISSOURI 63145 • 314 AX 1-0540

February 4, 1974

Mr. F. E. Kruesi, Director
Regulatory Operations
U. S. Atomic Energy Commission
Washington, D. C. 20545

Reference: USAEC License
No. 24-04206-01

Gentlemen:

A production technician was found to have an elevated thyroid burden of Iodine - 131 on January 4, 1974, at 1600. The individual's average thyroid burden for seven consecutive days was 0.14 microcuries.

The calculated exposure to the gland is 5 percent of the permissible 8 Rems recommended by the ICRP, for thirteen consecutive weeks.

The individual's uptake correlated with high air concentrations. The high average air concentration over a 40 hour work week in the area in which the individual worked was 3.7×10^{-8} uCi/ml I-131 and 7.2×10^{-10} uCi/ml I-125 with no other detectable Isotope. The individual's occupancy time was approximately 10 hours during the period of elevated air concentrations.

The uptake resulted from the following operation:

Special resin columns are prepared to remove unbound Iodine in I.H.S.A. I.H.S.A. is passed through the columns to remove unbound Iodine from the product. The columns themselves are then handled and disposed of as radioactive waste.

Six or eight of these columns were placed in the bottom of a steel pail within a special heavy lead overpack. This partially filled overpack was transferred to another area for reception of additional radioactive waste.

9701280260 970123
PDR FOIA
FLOYD96-343 PDR

MALLINCKRODT CHEMICAL WORKS

9701280260

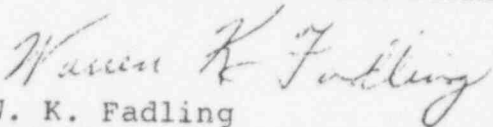
It was assumed by the supervisor in charge of the operation that the unbound Iodine was fixed to the resin in the columns and would not result in airborne concentrations, so the columns could be considered and handled as solid radioactive waste. However, this turned out to be a mistake in judgment and high airborne concentrations resulted.

Although, we had written instructions covering the handling of liquid radioactive waste they did not cover an exact situation of this type.

Since the incident the instructions have been modified to cover all radioactive waste, solid or liquid being removed from the Hot Cell. All Hot Cell Radioactive Waste is being immediately turned over to Health Physics, sealed and transferred directly to appropriate storage areas.

Sincerely yours,

MALLINCKRODT NUCLEAR
MALLINCKRODT CHEMICAL WORKS


W. K. Fadling
Radiological Protection Dept.

WKF:ja

Encl: (1)

cc: Mr. Boyce H. Grier, Director USAEC Region III

NAME

[REDACTED]

DATE OF BIRTH

[REDACTED]

SOCIAL SECURITY NUMBER

[REDACTED]

Exemption 6