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STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : Hanson Blatz, Chief, Radiation Branch
Health & Safety Division

DATE: July 25, 1952

FROM : Eugene Barry, Radiation Branch *CVB*
Health & Safety Division

SUBJECT: VISIT TO CANADIAN RADIUM AND URANIUM CO, MT. KISCO, N. Y. -
MAY 28, 1952

SYMBOL: HSR:EVB:md

On May 28, a visit was made to the Canadian Radium and Uranium Co. of Mt. Kisco, New York, a manufacturer and distributor of radium and polonium products, for the purpose of assisting the New York State Department of Labor in making a contamination survey. The following types of samples were taken: 1 1/8" diameter Whatman #41 filter paper smear samples for measuring removable alpha contamination, general air and local air radon samples, air dust samples utilizing the Hudson air sampler with 1 1/8" diameter Whatman #41 filter papers, and room air dust samples utilizing a hand type (MSA Samplair) air sampler with 1 1/2" diameter Whatman #41 filter papers. Surface contamination was measured with a Juno SIC-17C and a Juno SIC-17D. The latter is a high range instrument, while the former is a low range instrument.

Removable Surface Contamination.

A total of 29 smears were taken. All of the smears except two covered an area of 100 cm². These two smears were taken on the ear pieces of telephones. The removable alpha contamination, as indicated by the smears, ranged from 750 d/m/100 cm² to 25,000,000 d/m/100 cm². The smears from the earpieces of the telephones showed removable alpha contamination of 3,800 d/m and 28,000 d/m. A smear taken in front of the first aid cabinet showed a removable alpha contamination of 500,000 d/m/100 cm². The highest removable alpha contamination was obtained from a laboratory table in one of the chemistry laboratories. Three of the smears were sent to the Analytical Laboratory of this office for determination of the polonium content. Two of these samples were so radioactive that they could not be counted on the scintillation counters. A Juno measurement of the two samples indicate alpha activities in the order of a million disintegrations per minute. The third sample was measured on June 13, and indicated a polonium activity of 18,000 d/m.

CLASSIFICATION CANCELLED
BY AUTHORITY OF DOE/DPC
M. I. RAY *MR*
REVIEWED BY DATE 8/21/81

~~SECRET~~

July 26, 1952

Total Surface Contamination.

The surface alpha contamination as indicated by the Juno ranged from 13,000 d/m/100 cm² to greater than 30,000,000 d/m/100 cm². (The upper limit on the Juno SIC-17D that was used in taking the measurements was 30,000,000 d/m/100 cm²). This reading was encountered on the top of a laboratory bench.

Gamma Radiation.

The gamma readings as indicated by the Junos ranged from 5 mr/hr., the background reading in the building to 2000 mr/hr., which was encountered on the top of an evaporating dish in one of the labs. The radiation from a safe located on the second floor was 400 mr/hr with the safe door closed and 1600 mr/hr with the safe door open.

Airborne Dust Samples.

Eight Hudson pump air samples were taken in specific areas. The highest airborne contamination obtained by this method was 540 d/m/m³. Of the 28 hand pump air samples, only three showed activity at the time of counting. The three samples read 9500 d/m/m³, 8300 d/m/m³ and 4600 d/m/m³. The highest value was obtained in the shower room. This same room contains the first aid cabinet.

Air radon varied from 0.04 X 10⁻¹⁰c/l in the street, to 8.0 X 10⁻¹⁰c/l in the general workroom. The air radon samples were taken in specific locations. During this visit we found most of the windows open. Breath radons taken at a later date (July 7, 1952 after a three day holiday weekend) showed a radon content as follows:

- Person A - 0.3 and 0.4 X 10⁻¹²c/l of expired air.
- Person B - 1.0 and 1.0 X 10⁻¹²c/l of expired air.
- Person C - 7.0 and 8.0 X 10⁻¹²c/l of expired air.

Summary.

MSA Samplair (Hand pump) - volume passed through filter was 6 liters.

Polonium lab	- 8300 d/m/m ³
Weighing room	- 4600 d/m/m ³ *
Men's shower room	- 9500 d/m/m ³

* The reason for the great difference between the results of two collection methods is not yet evident. The Samplair method is considered experimental in this application.

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Hudson pump low volume air sampler - volume passed through filter varied from 100 liters to 900 liters.

Highest (weighing room) - 540 d/m/m³ *
Lowest (finishing lab.) - 160 d/m/m³
Average (8 samples) - 320 d/m/m³

Air radon.

Highest (workroom on 1st fl.) - 8.0 X 10⁻¹²c/l
Lowest (in building) - 0.6 X 10⁻¹²c/l
Average (6 samples) - 3.4 X 10⁻¹²c/l
Street radon (10 ft. from bldg.) - 0.04 X 10⁻¹²c/l

Smears for measuring removable alpha contamination.

Highest (lab bench top) - 25,000,000 d/m/100cm²
Lowest (dressing room table) - 750 d/m/100cm²
Average (29 samples) - 920,000 d/m/100cm²

Surface alpha contamination as indicated by SIC-17C and SIC-17D.

Highest (lab bench top) - >30,000,000 d/m/100cm²
Lowest (dressing room table) - 13,000 d/m/100cm²
Average (24 measurements) - >4,200,000 d/m/100cm²

Although the AEC has no jurisdiction over this company, we are interested in the potential effect of contamination on the health of employees.

Accompanying E. V. Barry were William Harris of the Health and Safety Division of this office, and Saul Harris and Robert Crowley from the New York State Department of Labor, Industrial Hygiene Division.

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