

SEP 19 1968

U. S. Radium Corporation
Post Office Box 246
Morristown, New Jersey 07960

Attention: Mr. R. C. Sorenson
President

Gentlemen:

This refers to the inspection conducted at Bloomsburg, Pennsylvania, during July 1968 of your activities authorized under AEC Byproduct Material License Nos. 37-30-2 and -7.

As a result of the inspection, it appears that certain of your activities were not conducted in full compliance with license conditions and the requirements of the AEC's "Standards for Protection Against Radiation," Part 20, Title 10, Code of Federal Regulations, in that:

LICENSE NO. 37-30-2

1. Contrary to 10 CFR 20.201(b), "Surveys," no surveys were conducted to determine compliance with 10 CFR 20.103 with respect to the airborne concentrations of tritium to which an employee was exposed in the restricted Tritium Building while preparing tritiated metal foil and titanium tritide.
2. Survey data indicated that the surfaces throughout your plant exceeded the contamination limits specified in your Standard Operating Procedure 27, contrary to License Condition No. 18G which incorporates the referenced document.

LICENSE NO. 37-30-7

3. Contrary to 10 CFR 20.201(b), "Surveys," no evaluation was made to determine compliance with 10 CFR 20.103 with respect to airborne concentrations of radon 222 to which employees were exposed during decontamination operations performed in the Radium Screening Facility.

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4. Survey data indicated that the surfaces throughout your plant exceeded the contamination limits specified in your Standard Operating Procedure 27, contrary to License Condition No. 17 which incorporates the referenced document.

This notice is sent to you pursuant to the provisions of Section 2.201 of the AEC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations. Section 2.201 requires you to submit to this office within twenty (20) days of your receipt of this notice, a written statement or explanation in reply including: (1) corrective steps which have been taken by you, and the results achieved; (2) corrective steps which will be taken to avoid further violations; and (3) the date when full compliance will be achieved.

In addition to the above items of noncompliance we wish to call your attention to the following matters which require your consideration:

- A. We understand that the roof area, and the areas to the north, west, and south of the company's facilities are unrestricted areas. Pursuant to 10 CFR 20.106(d), the use of diffusion calculations is not appropriate unless the stacks discharge within the restricted area. Further, it is noted that your evaluations used diffusion calculations based on assumptions concerning wind direction and velocity, with no meteorological data to support the assumptions. If you intend to use diffusion calculations to show compliance with 10 CFR 20.106, your program should be revised to assure that the stacks discharge within a clearly defined restricted area, and that valid meteorological parameters are used.
 - B. U. S. Radium Corporation did not adequately evaluate the total effluent released from all stacks to unrestricted areas. We note that each stack was considered individually by the company in its evaluation whereas U. S. Radium Corporation has a random array of stacks, all of which may be releasing radioactive material at any given time.
 - C. The techniques used by U. S. Radium Corporation in its tritium analysis of impinger water samples and urine samples were inaccurate in that the results were thirty percent below the actual concentrations.
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Please provide us with your comments on the matters discussed above with your reply to this letter.

Very truly yours,

Original signed *LD*

L. D. Low

Lawrence D. Low, Director
Division of Compliance

bec: CO:HQ
DEL:IB
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DATE ▶	9/13/68					

17-56-7

DIVISION OF COMPLIANCE MONTHLY REPORT, JULY 1968

U. S. Radium Corporation, Bloomsburg, Pennsylvania - A reinspection revealed improvements in equipment, supervision, and instrumentation.

Specifically, alterations had been made in the americium facility to facilitate the safe changing of filters and glove box gloves. Breathing zone samples indicated no employee was being exposed to average concentrations in excess of the Part 20 limit. Improved contamination control in the tritium hand paint facility has been achieved by using protective paper, changing it twice daily, altering the facility such that only one door is available for entrance and egress, and providing a person for continuous health physics surveillance. Tritium urinalyses of employees show generally low results.

Although the licensee has conducted a comprehensive survey of tritium stack effluents, the previous item of noncompliance for failure to evaluate tritium effluent concentrations to unrestricted areas still remains uncorrected. This is the result of the use of diffusion equations without prior meteorological data, improper evaluation of restricted-unrestricted areas, and use of analytical results which appear to be 30 percent too low.

Additional uncorrected items of noncompliance noted during the inspection were the failure to properly evaluate exposure to air concentrations of Rn-222 to persons who enter a highly contaminated former radium screening area and exceeding the contamination limits set forth in the license.

Because of the improvements noted in management's attitude, administrative controls, and supervision of employees, no serious hazard is believed to exist. Region I (Newark) plans to transmit the case to Headquarters for enforcement action.