

UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE
REGION I
970 BROAD STREET
NEWARK, NEW JERSEY 07102

201 645- 3962

December 16, 1969

Paul R. Nelson
Paul R. Nelson, Senior Radiation Specialist
Region I, Division of Compliance

Inspector Evaluation of
Beryllium Dorporation
Hazelton, Pennsylvania 18201
License Number 37-07676-01

Currently, the only use under this license is 250 mc Sb-124 source contained in beryllium analyzer. Normally, only one technician uses this instrument. Use involves exposure to modest levels of radiation for brief periods of time while inserting or removing samples. Film badge exposures have been minimal,

Surveys are conducted routinely at monthly intervals, and on appropriate occasions. Radiation levels around facility are minimal.

Leak tests of Sb-124 sources performed as required. However, three-year leak test on Cs-137 source installed in gauge which has been in storage for past 1¹/₂ years was overdue by almost one year at time of inspection. Purchase requisition has been issued for another leak test to be performed.

This license has been classified as E III, but should be changed to E (2)IV. Since, in the judgment of the inspector, there were no significant potential health and safety hazards, it is recommended that the time for reinspection be extended by eighteen months to April, 1974.

Charles F. Stearns
Radiation Specialist

REGION I, DIVISION OF COMPLIANCE
NEWARK, NEW JERSEY

SPECIAL LIMITED INSPECTION

1. Name and address of licensee:

Beryllium Corporation
Hazelton, Pennsylvania 18201

2. Date of Inspection: 10/14/69

3. Type of Inspection: ann'c'd/reinsp.

4. License number(s), docket number(s), number and date of last amendment for each license. Category and Priority of each license:

37-97676-01 ---- Amend. No. 05, issued 9/8/67 --- E (2)IV

5. Date of previous inspection: None

6. Is "Company Confidential", or proprietary, or classified information contained in report?

Yes _____ No X

(Specify paragraphs)

7. Scope of inspection:

Ref. memo from Low dated 4/3/68

8. Charles F. Stearns

Charles F. Stearns

12/16/69

Baul B. Wilson

2/24/70

Licensee: Beryllium Corp

Summary

Normally used by only one technician, and use routinely consists of only being in vicinity of unit where radiation levels are modest for brief periods of time, in order to insert or withdraw samples. Film badge exposures reported as zero or almost zero. Routine surveys monthly, ~~and when~~ and when appropriate, and records maintained. Leak tests of Sb-124 and Cs-137 sources performed as required, except that three-year leak test on Cs-137 source installed in gauge, which has been stored only since 1 1/2 years prior to inspection, was almost a year overdue at time of inspection.

Noncompliance and Safety Items

Form AEC-3 not posted,

Unusual Occurrences

none

Status of Previously Reported Noncompliance or Safety Items

Room in which beryllium analyzer, containing Sb-124, was installed not posted CMA.
Current status: --- now properly posted.

Record of certificate of leak test prior to receipt of Cs-137 source, presumably provided with gauge containing Cs-137 by Industrial Nucleonics not available for inspection.

Current status: Certificates of prior leak test for all sealed sources received since last inspection were available for review.

Management Interview

Discussed results of inspection with W. S. Shaw, Plant Manager. The inspector issued a clear 591 .

Licensee: Beryllium Corporation

DETAILS

A. Participants

Paul C. Kempchinsky, Supervisor, Analytical & Testing Labs
Wilfrid L. Atwood, Engineering Manager (contacted only by telephone on 10/17/69.

Pennsylvania Health Dep't. notified, but no one attended.

B. Scope of Licensee Program

Currently only use is Sb-124 source (250 mc at 8.69) contained in Boulder Scientific Company beryllium analyzer, as per license.

Previously, also Cs-137 sealed source in Industrial Nucleonics Corp level gauge, as per license ---- (see paragraphs 5, 13, and 14 of previous report dated 7/22/66).

This gauge was put in storage with shutter locked in closed position, and Atwood does not anticipate that it will ever be used again.

** approx 1 1/2 years prior to inspection.*

C. Organization

W. S. Shaw, Plant Mgr

↑

William Franon, Mgr. Quality Assurance

↑

Kempchinsky (v.s.)

According to Kempchinsky, since the time of the last inspection, there has been a merger between Beryllium Corp. and Kawecki Chemical Corp: new name of company resulting from merger is Kawecki-Berylco, and inspector reviewed partially completed Form AEC-313 notifying Commission of this change.

D. Administrative Control

As indicated by license applications, it was originally intended that Atwood act as RSO for portion of program involving use of Cs-137 ; and Kempchinsky for use of Sb-124. However, it was subsequently mutually agreed upon that it would be simpler for Kempchinsky to assume responsibility for all use of byproduct material under this license, and that is the current status. Kempchinsky stated that he has complete authority to enforce the radiological safety procedures that have been drawn up.

Licensee: Beryllium Corporation

E. Use of Material

See Section B, Scope, ~~above~~.

Currently possessed Sb-124 source ~~wasxxxxxxixxi~~ was shipped 7/29/69, and its activity was 250 mc on 8/69. Kempchinsky stated that unit is used continually throughout each eight-hour day; each sample remains in the analyzer a minimum of 5 minutes, and a maximum of 10 minutes.

Michael Stefanick normally operates the beryllium analyzer under the supervision of Kempchinsky, who stated that he trained him in radiological safety, as well as in the mechanics of operating the unit. (See Items 3 & 9, attached to current license application for training and experience of Kempchinsky (and Atwood). In the absence of Stefanick, Elmer Posdie substitutes for him.

See paragraphs 6, 8, 9, of report dated 7/22/66 for description of use of analyzer.

F. Facilities

See paragraph # 10 of report dated 7/22/66 for description of facility where beryllium analyzer is used. Kempchinsky stated that this facility is restricted; it is kept locked except while being used. The only occasion for occupancy above the facility would be in order to perform maintenance on pipes which run in the space between the ceiling of the facility and the ("high") ceiling of the building, in which case such work would have to be coordinated with Kempchinsky, according to Kempchinsky.

(All statements in this report should be attributed to Kempchinsky, unless otherwise noted.)

Licensee: Beryllium Corporation

G. Equipment

Victoreen Model 592 --- calibrated annually, previously by Foster Wheeler, but currently by Applied Health Physics.

H. Radiological Safety Procedures

See Administrative instructions attached to current license application dated 8/16/67; Kempchinsky stated that these procedures are followed, except that surveys are only once per month, and lead plug may not be put into position until end of the working day when ~~XXXXXXXXXX~~ unit is used repeatedly throughout the day.

Licensee: Beryllium Corporation

I. Personnel Monitoring and Exposure to External Radiation

Landauer --- monthly.

Reviewed exposure reports: ---

Exposures almost always reported as "M" --- i.e. minimal exposures. E.g., total exposures for year 1968 for Stefanick and Kempchinsky, respectively, were noted to be 21 mrem and 15 mrem. Totals for 1967 were 0.

J. Exposure of Employees to Concentrations of Radioactive Materials

no problem

K. Effluents to Unrestricted Areas

no problem

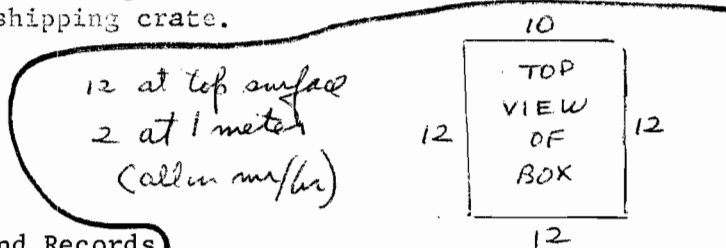
Licensee: Beryllium Corp.

C

L. Disposals

Each Sb-124 source is returned to supplier for replacement after possessing it less than six months.* The entire unit is returned, and Boulder Scientific performs the exchange of sources. In order to prepare unit for shipment, sample holder is replaced by dummy, and lead plug inserted. The shielding built into the instrument is supplemented by the "distance" provided by shipping crate.

* Approx every four months.



M. Miscellaneous Surveys, Evaluations and Records

Routine direct reading surveys on monthly basis. Also, always survey around shipping crate before shipping unit for source replacement. See diagram for typical results --- (readings are for current unit when received -- put in use 8/4/69):
ALSO SEE EXHIBIT A FOR ROUTINE SURVEY RESULTS,

Leak Tests : ---

Inspector reviewed certificates of prior leak test received with each replacement source . As stated in Section L, above, each source is returned for replacement in less than six months so that no subsequent leak test is required. Regarding the Cs-137 source, Kempchinsky stated that the gauge containing the Cs-137 had been in storage for more than a year, and he did not know when leak tests had been performed. Atwood, the user ~~for~~ of the gauge containing cesium, was not available for questioning at the time of inspection; therefore the inspector contacted him by telephone 10/17/69, when Atwood made the following statements: ---

N. Special License Conditions

(cont'd. over)

No noncompliance with license conditions noted, except in regard to leak tests of Cs-137 source --- (see Section M, above.).

Licensee: Beryllium Corporation

O. Posting and Labeling

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*
CRM and CRA posted, but not Form AEC-3. Kempchinsky stated that AEC-3 form must have been posted, but "someone must have taken it down".

* Had standard symbols and colors.

P. Independent Measurements

Direct reading survey using Eberline Model E-120, Ser. No. 1276 GM survey meter, calibrated on 8/12/60. No cap placed over end window. The following are some of the readings obtained in mrad/hr: (readings taken with dummy sample in unit)

Approx three inches in front of port	-----	→ 3
Near top surface of stool where technician sits while inserting or withdrawing sample	-----	< 0.5
At closed entrance door to analyzer room (at waist)	-----	< 0.15
" " " " " " " " (at chest)	-----	0.2-0.3
Along outside wall (18 inches from outside surface	-----	< 0.1

Approx background readings (i.e. < 0.05 mrad/hr) in adjacent rooms at either side of beryllium analyzer room.

Q. Operations Observed

None

Licensee: Beryllium Corp

R. Incidents, Overexposures, Theft or Loss, Equipment Malfunction

none

S. Other information or continuation from previous paragraphs.

