

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 70-7/82-01

Docket No. 70-7

License No. SNM-6

Licensee: Nuclear Science Division

International Chemical and Nuclear Corporation (ICN)

Pittsburgh, Pennsylvania

Facility Name: ICN Nuclear Science Division
Skyview Terrace, Route 885
Holmstead, Pennsylvania

Inquiry Conducted: May 5 - June 5, 1982

Inspector: Jenny M. Johansen
Jenny M. Johansen, Radiation Specialist

8/2/82
date

Approved by: John D. Kinneman
John D. Kinneman, Chief, Materials Program
Section No. 1

8/2/82
date

Inquiry Summary:

This inquiry consisted of telephone discussions and review of records provided by ICN and NMSS to determine whether the facility at Homestead, Pennsylvania formerly authorized for experimental use of special nuclear materials meets current criteria for unrestricted use.

Results: It appears that the facility was properly decontaminated, surveyed and closed-out when AEC License No. 37-00345-03 was terminated. The facility meets current criteria for release for unrestricted use.

DETAILS

1. Persons Contacted

- A. Albert L. Baietti, Radiological Control Director, ICN
- B. James G. Yusko, Western Area Health Physicist, Commonwealth of Pennsylvania

2. Background

ICN, Nuclear Science Division, was authorized under License No. SNM-6 to possess and use plutonium (100 gms as metal foil or oxide, 160 gms as encapsulated PuBe sources and 10 gms associated with byproduct materials), uranium enriched in U-235 (25 grams in any form), and byproduct material (produced by irradiation of uranium covered by this license and that produced by irradiation of less than one (1) gram quantities of source material). Research with these licensed materials was supported by AEC contracts AT (30-1)-3049 and AT (30-1)-3201. The license was first issued on August 10, 1955, amended in 1956 and 1965, renewed on October 20, 1967 and terminated on February 12, 1969. License No. SNM-6 gave the place of use as the licensee's facilities at Skyview Terrace, Route 885, Homestead, Pennsylvania.

Byproduct Material License No. 37-00345-03 was also issued to ICN, Nuclear Science Division, listing a place of use at 430 Lebanon Road, West Mifflin, Pennsylvania. This license was terminated some time after a close-out survey completed by Region I on June 17, 1969. This close-out survey indicated that the licensee's facility met the release criteria set forth in DML's letter of April 7, 1969, except for packaged waste onsite, a small contaminated area in the basement of Building No. 1, a lack of survey prior to installation of new roofing and contamination within subsurface drain lines.

3. Telephone Discussions with Individuals

Individual A searched ICN corporate files and provided a letter from the AEC to ICN dated February 12, 1969 which terminated License No. SNM-6 and a letter from ICN to the AEC dated January 29, 1969 which stated that physical transfer of all material held under SNM-6 had been completed (see Enclosures A and B); however, the Form AEC-388 which was enclosed with the January 29, 1969 letter indicating to whom and where the materials were transferred was not found.

Individual A stated that more information regarding the facility meeting criteria for unrestricted use would be in a close-out survey performed in 1969 by the AEC of License No. 37-00345-03 since the facilities named on that license and SNM-6 were the same.

The inspector reviewed a map of the Pittsburgh, Pennsylvania area and found that Route 885, Homestead, Pennsylvania, is also labelled Lebanon

Road. Discussion with Individual B, who stated he was very familiar with the area, confirmed that Lebanon Road (Route 885) could have either a Homestead or West Mifflin address. He later verified that Skyview Terrace, Route 885, Homestead, Pennsylvania and 430 Lebanon Road, West Mifflin, Pennsylvania were the same site.

4. Review of Records

Review of the letters (Enclosures A and B) provided by Individual A indicate that all materials authorized by License No. SNM-6 were physically transferred from the facility prior to January 29, 1969 and that the license was terminated by the AEC on February 12, 1969. The Form(s) AEC-388 covering these transfers was not available for review so it could not be determined to whom or where these materials were transferred.

A copy (see Enclosure C) of the June 17, 1969 AEC close-out survey report of the facilities authorized by License No. 37-00345-03 was obtained from NMSS docket files and compared to available documents concerning License No. SNM-6. It appears that the buildings described as Building No. 1 and Building No. 2 in the close-out survey and the diagrams of Buildings 1 and 2 attached to a June 29, 1965 letter concerning SNM-6 are similar, but there is no reference to SNM-6 licensed material in the close-out survey.

The report states that radiation levels in Buildings 1, 2 and 4 were measured using an Eberline model E-120 thin end window (7 mg/cm²) GM survey meter having a minimum sensitivity of 0.05 mrad/hr.

During the June 17, 1969 survey the inspector found that surface radiation levels in Building No. 1 ranged from 0.05 to 0.06 mrad/hr except for a 2' x 2' floor surface area which also had removable beta-gamma activity of 345 dpm/100 cm². Other floor and wall areas had removable contamination of less than 50 dpm/100 cm², with 90% of the areas having 5 dpm or less removable contamination. Building No. 2 had surface radiation levels of 0.08 mrad/hr or less with no removable contamination in excess of 5 dpm/100 cm². Building No. 4 had surface radiation levels of less than 0.05 mrad/hr with no removable contamination in excess of 20 dpm/100 cm². The report states that the licensee agreed to decontaminate the 2' x 2' floor area found in Building No. 1, but does not provide any information on whether this was done.

Current NRC guidelines for decontamination of facilities prior to release for unrestricted use allow average surface contamination levels for U-nat, U-235, U-238 and associated decay products of up to 5000 dpm/100 cm² and up to 1000 dpm/100cm² for most beta-gamma emitters. The removable contamination levels found during the June 17, 1969 close-out survey are well within these guidelines.

5. Conclusions

The facilities identified as Skyview Terrace, Route 885, Homestead, Pennsylvania on License No. SNM-6 and as 430 Lebanon Road, West Mifflin, Pennsylvania on License No. 37-00345-03 are the same site. All materials authorized by SNM-6 were transferred from the facility prior to January 29, 1969 and before a close-out survey on June 17, 1969 of License No. 37-00345-03. This survey indicated that the facility met current NRC criteria for release for unrestricted use. Therefore, it appears that the facility meets current criteria for release for unrestricted use.

W. L. Baietti
Enclosure A Region I Report
70-7/82-01

23-4
cuts 2/3

January 29, 1969

Division of Material Licensing
United States Atomic Energy Commission
Washington, D. C. 20545

Re: SNM-6.
DML 70-7

Gentlemen:

This is to request the termination of Special Material License No. SNM-6. Enclosed is a copy of signed Form AEC-388 (Rev. 1/60) establishing the physical transfer of all of the material held under the subject license.

We believe we have satisfied all requirements in an appropriate manner and that SNM-6 termination can be satisfactorily realized.

Should any additional information be required in connection with this request, please do not hesitate to call upon us.

Sincerely,

Robert L. Bogner, Ph. D.
Chairman
Radiation Safety Committee,

rs
Enclosure

bcc: R. Greenwood
R. Fallis
A. L. Baietti

RECEIVED
FEB 3 1969

a.



Enclosure B Regim I Report
70-7182-01

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

FEB 12 1969



ICN Pharmaceuticals, Inc.
Chemical & Radioisotope Division

ALBERT L. BAIETTI

2727 CAMPUS DRIVE
IRVINE, CALIFORNIA 92715
RADIOLOGICAL CONTROL DIRECTOR TEL. (714) 833-2500

DML:RLL
10-7

International Chemical and
Nuclear Corporation
Nuclear Science Division
P. O. Box 10901
Pittsburgh, Pennsylvania 15236

Attention: Dr. Robert L. Bogner
Chairman, Radiation Safety
Committee

Gentlemen:

In accordance with your application dated January 29, 1969;

AEC Material License No. SNM-6 is hereby terminated.

FOR THE ATOMIC ENERGY COMMISSION

Robert L. Layfield
Robert L. Layfield
Source & Special Nuclear
Materials Branch
Division of Materials Licensing

D
Q
DML
Enclosure C Region I Report
70-7/82-01

3962

AUG 5 1969

Jack R. Roeder, Chief, Material Inspection
and Enforcement Branch, HQ

COMPLIANCE SURVEY REPORT
NUCLEAR SCIENCE & ENGINEERING CORPORATION
DIVISION OF INTERNATIONAL CHEMICAL & NUCLEAR CORP.
P.O. BOX 1091
PITTSBURGH, PENNSYLVANIA 15236
LICENSE NO. 37-00345-03

Transmitted herewith for information is the report of a close-out survey of the subject licensee's facilities at Pittsburgh.

Our close-out survey indicated that the licensee met the release criteria set forth in DML's letter of April 17, 1969, except for the discrepancies discussed with Gen Roy by telephone regarding (1) packaged waste on the premises; (2) a small contaminated area in the basement of Building No. 1; (3) lack of a survey prior to installation of new roofing; and (4) contamination within subsurface drain lines.

Enclosed is a letter dated July 9, 1969 from A. L. Baietti to Gerusky. Please note the discrepancies between his written information to Gerusky and his oral information supplied to the inspector regarding the conversion from c/m to dose rate and the radiation levels noted on the sections of drain lines removed.

Paul R. Nelson
Senior Radiation Specialist

Enclosure:
Survey Report (Orig & lcy)
Ltr dtd 7/9/69

CONFIDENTIAL
DO NOT DISSEMINATE

1969 AUG 8 11 15 SA

RECEIVED

CLOSE OUT SURVEY REPORT

NUCLEAR SCIENCE & ENGINEERING CORPORATION
DIVISION OF INTERNATIONAL CHEMICAL & NUCLEAR CORPORATION
P.O. BOX 10901
PITTSBURGH, PENNSYLVANIA 15236
LICENSE NO. 37-00345-03

FACILITIES LOCATED: 430 LEBANON ROAD
WEST MIFFLIN, PENNSYLVANIA

INSPECTOR: Eugene Epstein

DATE OF VISIT: June 17, 1969

Accompanied by

Mr. Stuart Levin, State of Pennsylvania Health Department

Persons Contacted

Mr. A. Baietti, Corporate Radiological Control Director

DETAILS

1. A close out survey was conducted June 17, 1969 at the West Mifflin, Pa. facility to determine the effectiveness of the licensee's decontamination effort using the criteria set forth in D.L.R. letter dated April 17, 1969 signed by J. A. McBride.
2. Major activities which could evolve or result in the presence of contamination both fixed and removable have been conducted in the following locations for the past five years, according to Baietti and past inspection history.

Building #1 basement

- a. Repackaging of I-129-131
- b. Dissolving of accelerator targets and wet chemistry operations to separate and purify desired activity for production of Mossbauer Effect Sources.
- c. A dispensing hood where radionuclides I-129-131 and other radioactive liquids were packaged for shipment.
- d. A lead brick storage area for bulk storage of radionuclides.

Building #4 1st floor

A laboratory where final preparation of Mossbauer Effect Sources took place, electroplating, precipitation and baking.

A shed in the rear of Bldg. 4 where a type A incident involving a Sr-90 spill had occurred in 1962.

Building #2 1st floor

A laboratory which had been used to cut Co-60 flux wires received from reactor sites. The cut Co-60 wires were evaluated at ICN for induced activity. The cutting and evaluation had been performed continuously for the past 10 years.

3. All other areas, according to inspection reports, and A. Baietti were unrestricted or low level counting laboratories and offices where little or no likelihood of contamination would exist.

4. Baietti reported that the primary and major decontamination effort of those areas where high level activity had existed was performed between April 17, 1969 and May 15, 1969 by three ICH personnel, Regis Greenwood, site ESO, Richard March, Production Manager, and John Hipas, a technician. These persons according to Baietti, did the heavy decontamination such as washing floors, walls and surfaces, decontaminating process hoods both inside and out and removing ductwork. Secondary low level decontamination has been performed by temporary personnel from "Manpower" Pittsburgh, Pa.
5. Records showing the extent of contamination existing prior to the decontamination effort and at various stages during the decontamination were not maintained according to Baietti. Records of personnel monitoring results, air survey results were not available to the inspector. Baietti stated these records were removed to ICH at 2727 Campus Drive, Irvine, California 92664.
6. Final survey results attached as Exhibit A were mailed to DML by letter of June 17, 1969 and also submitted to the inspector at the time of the inspection by Baietti. It was noted that the radiation levels in the exhibit are expressed in cps. rather than in mrad/hr. Baietti explained that he had determined that 500 cps was equivalent to 0.1 mrad/hr. He also stated the readings expressed in the report were obtained by using a 1.2 mg/cm² thin window FUG-1 Technical Associates GM Survey Meter with the window one centimeter distance from surfaces.
7. Smear results, according to Baietti, are expressed as dpm/100 cm². He stated that the smears were taken by rubbing surfaces with Whatman 41 filter paper. The surfaces including floors, walls ceilings table tops and roofs. The filter paper smears were counted in a thin window gas flow counter with a Baird Atomics Scaler having an efficiency of 33% for beta-gamma. Baietti stated all removable atoms which had surface radiation readings greater than 0.1 mrad/hr was disposed to hot waste.
8. Building #1 basement in which high level activity had been conducted has four floor drains and one corner sink drain. Baietti stated the radioactive soluble waste had been disposed to these drains during operations. The inspector noted that vertical pipe sections leading to subsurface traps and drain lines had been removed. Baietti stated that these pipe sections were replaced by new 5' long sections and drain covers. In addition he stated the inner surfaces of the removed pipe sections had surface readings inside of approximately 0.2 mrad/hr. He stated also that no smears were taken and no evaluation was made to determine the extent of removable contamination existing in these sections to determine the extent of removable contamination remaining in sub-surface traps and drain lines.
9. The inspector also noted that new roofs were being installed on all buildings. Baietti stated the old roofs were removed and disposed to radioactive waste and that he did not know whether or not contamination existed on roof surfaces prior to their removal and resurfacing. Baietti stated the roofing was replaced at the insistence and agreement with the owner of the buildings Mr. W. Alberts. Paragraph #4 of the DLR letter dated April 17, 1969 states "Radioactivity on equipment or surfaces shall not be covered by paint, plating or other covering material except as approved by the Atomic Energy Commission. The inspector could not make any surveys because of the presence of hot tar on the roof.

Inspector's Measurements

10. The inspector, using an Eberline model E-120 thin end window GM survey meter with the end window covered with plastic to give an effective window of 7mg/cm² made direct radiation measurements throughout the licensee's facility. Smears were also taken by wiping floor and wall surfaces with filter paper and counting the

activity on the licensee's thin window gas flow proportional counter and scaler. The results of these surveys are included as Exhibit "B" (1)-(4). A summary of the survey results are as follows.

11. Building #1 basement had direct contact radiation levels ranging from 0.05 to 0.06 mrad/hr. (min smrt. 0.05 mrad/hr). Except for one floor surface area, 2' x 2' where a former isotope dispensing hood had been located. The floor area had radiation levels at 1cm. distance of 0.6 mrad/hr. A smear of this area disclosed removable beta gamma activity of 345 dpm/100 cm². Basement 1 had wall and floor removable contamination in other areas of less than 50 dpm/100 cm² with 90% of the areas having 5 dpm or less of removable contamination (sensitivity limit 5 dpm/100 cm²). Baietti stated that they would immediately decontaminate the 2' x 2' basement floor area.
12. Building #2 had surface radiation readings of up to 0.08 mrad/hr. in the rear of the building where Co-60 flux wires had been stored for disposal. This appeared to be fixed contamination as evidenced by rust spots absorbed into the asphalt. Surface removable contamination did not exceed 5 dpm/100 cm². Radiation surface readings inside Building #2 did not exceed 0.05 mrad/hr. and removable surface contamination did not exceed 5 dpm/100 cm².
13. Building #4 had surface radiation levels no greater than 0.05 mrad/hr. both inside and in a rear storage shed. Removable contamination did not exceed 20 dpm/100 cm². Approximately 130 radiation readings and smears were taken by the inspector.
14. The DLR letter of April 17, 1969 requires that removable contamination be less than 100 cpm/100 cm² as determined by an appropriate instrument of known efficiency. The licensee appears to have exceeded this limit with respect to one 2' x 2' floor area in the basement of Building #1 where a net count of 115 cpm was noted on an activity gathered by a smear using Whatman 41 filter paper and counted with a thin window gas flow proportional counter with 33.3% efficiency for beta activity. This resulted in removable activity of 345 dpm/100 cm². See paragraph 10 of this report and Exhibit "B(1)".
15. Paragraph 3 of the DLR letter of April 17, 1969 states "The radioactivity on the interior surfaces of pipes, drain lines, of ductwork shall be determined by making measurements of all traps and other appropriate access points to the interior of pipes drain lines or ductwork." Baietti reported that all surface pipes and ductwork have been removed and disposed to radioactive waste. The inspector noted the complete absence of exterior piping and all ductwork. The situation is different however with respect to subsurface drains in Building 1. Baietti stated that subsurface drains and traps in Building No. 1 could be contaminated because of liquid radioactive waste disposal for at least 10 years. As noted in paragraph 7 of this report, drain pipes extending to the first five feet below the ground surface were removed and replaced by new five foot sections. Baietti stated he did not have any records of the radiation readings on the removed five feet long pipe section but recalled that the radiation readings were 0.2 mr/hr. He also stated that no smears were taken to determine removable contamination. Baietti also stated he couldn't proceed below five feet with pipe removal because of the presence of ground water.
16. The inspector also noted the presence of 5 large plywood crates properly labeled for shipment which Baietti stated contained radioactive waste. Baietti stated the waste crates would be shipped to Nuclear Engineering Morehead, Ky. The crates were noted to have surface radiation levels of 5-10 mr/hr.