

SEP 11 1959

Karvin M. Mann, Assistant Director
Division of Inspection, B1.

Robert C. Zirkman, Director
Inspection Division, 3700

TRANSMITTAL OF LICENSE COMPLIANCE INSPECTION REPORT 20 CFR 30

BY BELL INSURCO

Transmitted herewith is the following report of a reinspection and
inquiry into loss of licensed materials:

Kastman Kodak Company
Rochester, New York

License No. 31-341-10 w/suend. 4

The following item of noncompliance was noted during the course of
this inspection:

30.3

- In that individual tri-line-activated luminous signs contained
up to 100 mc each, while Item B-C of the License specified a
maximum of 20 mc R³ per sign (See Item 10 of report details.)

The above-mentioned item of noncompliance was brought to the attention
of Dr. Sutton, who expressed his company's willingness to comply with
the Federal Regulations and to take such corrective action as requested
by the Commission. It is felt there is no hazard involved in this
item and no follow-up inspection is recommended. It is recommended
that the licensee be notified and requested to take such action as
considered appropriate by the Commission.

The licensee appears to have taken reasonable precautions to ensure
the safekeeping of licensed materials. The additional precautions
which have been instituted as a result of the loss of 11 sources
appear to this office as having a high probability of ensuring such
loss will not occur again. No further action is recommended on
this matter.

Enclosure:

Div of Insp, Rq (4)

INSPECTION

CLEVELAND, OH KIRDMAN

ITEM # 11

BX 11

20

COMPLIANCE INSPECTION REPORT

1. Name and address of licensee

**Eastman Kodak Company
Rochester, New York**

2. Date of inspection

July 30, 1959

3. Type of inspection **Reinspection**

4. 10 CFR Part(s) applicable

20 - 30

5. License number(s), issue and expiration dates, scope and conditions (including amendments)

<u>License No.</u>	<u>Date</u>	<u>Exp. Date</u>
31-461-10	6/8/59	6/30/61

Amendment 4 (In accordance with application dated May 22, 1959, License 31-461-10 is amended in its entirety to read as follows:)

SCOPE: A. 400 sources of 60 mc each. Total 24 curies of H^3 as sealed sources (U. S. Radium Corp. Model No. LAB-252 B-1) for use in dark rooms as locators of dangerous areas and machine parts. B. 1500 sources of 1 mc each. Total 1.5 curies of H^3 as sealed sources (New England Nuclear Corp. Model No. NEP-1) for use in dark rooms as locators of dangerous areas and machine parts. C. 1500 sources of 20 mc each. Total 30 curies of H^3 as sealed sources (New England Corp. lucite engravings painted with tritium activated luminous paint) for use in dark rooms as locators of dangerous areas and machine parts.

CONDITIONS: ^{235}U -Byproduct material may also be used at the following Eastman Kodak Company Processing Laboratories: Chamblee (Atlanta), Georgia; Chicago, Illinois; Dallas, Texas; Fair Lawn, New Jersey; Findlay, Ohio; Flushing, New York; Los Angeles, California; Palo Alto, California; and Kodak Hawaii, Ltd., Hawaii (CONT'D)

6. Inspection findings (and items of noncompliance)

Several Thousand tritium-activated luminous buttons and signs have been procured under this license for use in Kodak Park darkrooms to mark equipment and obstacles. All Kodak radioisotope uses are under the supervision of the Kodak Park radiation committee. Dr. W. L. Sutton, Committee Secretary and a Physician in the Laboratory of Industrial Medicine, acts as RSO. Sutton personally reviews all procurements and uses. Uses of sealed sources of H^3 had been evaluated as involving negligible radiological hazard. Leak tests are performed upon receipt and on a yearly basis thereafter. Sources are mounted so as to make removal difficult. Stored sources are kept in a locked area. Sources are properly labeled. Records are maintained of procurements, inventories, and leak test results. The 11 sources lost in May 1959 have been abandoned as unrecoverable. Mounting methods have been improved, and personnel have been re-instructed concerning the licensed sources. The only item of noncompliance observed or noted during the course of the inspection is as set out below:

30.3 - in that individual tritium-activated luminous signs contained up to 100 mc each, while Item 8-C of the license specified a maximum of 20 mc H^3 per sign (See Item 10 of report details.)

7. Date of last previous inspection

April 28, 1958

8. Is "Company Confidential" information contained in this report? Yes No

(Specify page(s) and paragraph(s))

DISTRIBUTION:

4 cys - Div of Insp. H₃
2 cys - NYOO

Approved by:

Richard S. Cleveland
(Inspector)

Robert W. Kirkman, Director
New York

(Operations office)

September 22, 1959

(Date report prepared)

If additional space is required for any numbered item above, the continuation may be extended to the reverse of this form using foot to head format, leaving sufficient margin at top for binding, identifying each item by number and noting "Continued" on the face of form under appropriate item.

ITEM 5 CONT'D

CONDITIONS: #12-Compliance with Part 20. #13-Byproduct material shall be used by, or under the direct supervision of, William L. Sutton. #14-Byproduct material as sealed sources shall not be opened by the licensee.

PART 30 INSPECTION

Eastman Kodak Company
Rochester, New York

Date of Inspection: July 30, 1959 (Preannounced)

Persons Accompanying Inspectors:

None (N. Y. State Dept. of Labor notified, but local representative was reported as on vacation with no alternate available)

Persons Contacted:

Dr. William L. Sutton, Secretary, Kodak Park Radiation Committee

Mr. J. C. Golem, Manager, Motion Picture and Sheet Film Division

DETAILS

9. Organization and Administration

Little change has occurred in the organizational setup of the Eastman Kodak Company with respect to control of the use of licensed materials at Kodak Park since the previous inspection. All uses of radioisotopes are under the supervision of the Kodak Park Radiation Committee. One change in the committee membership has occurred since the previous inspection. Dr. E. K. Carver, since deceased, has been replaced by Dr. Charles Fordyce as technical advisor to the manager of Kodak Park and as management representative on the Committee. Dr. Sutton, Committee Secretary and a physician in the Laboratory of Industrial Medicine, acts as RSO. He is assisted in surveying and record keeping activities by several of the industrial hygienists in this Laboratory. Sutton personally reviews all procurements and uses of radioactive materials and is in a position of general supervisory control over all such use.

10. Uses of Byproduct Materials

Several thousand licensed luminous buttons and signs have been procured for use in Kodak Park darkrooms to mark equipment and obstacles. Licensed materials currently on hand include approximately 1500 luminous buttons manufactured by New England Nuclear Corp. (NENC) and each containing 1 mc of H^3 ; approximately 400 luminous buttons manufactured by U. S. Radium Corp., each containing 60 mc of H^3 ; and 747 NENC engraved lucite signs painted with tritium-activated paint. Approximately 2000 luminous buttons and signs using radium-activated luminous phosphor are also in use.

The engraved lucite signs painted with NENC "Safeglow" paint were described by Sutton as containing from 1 to 100 mc H^3 each. The total activity of any given sign was dependent on the number and size of letters in the sign. The average activity contained in the engraved lucite signs was about 20 mc. It was noted that the applications for Amendment 2 and 4 of license 31-461-10 stated that the activity in the engraved lucite luminous signs would vary from as much as 4 to 30 mc H^3 , depending on the number and size of the letters, and that the average activity per sign would be about 20 mc.

11. Radiological Safety Precautions and Procedures

The tritium-activated luminous sources have been evaluated as presenting no radiological health hazard. All of these sources, however, are leak tested on receipt to guard against contamination of sensitive film processing areas. Personnel frequenting areas of use of the luminous sources are instructed as to their nature and that they are not to be

tampered with. Incoming sources that have not yet been installed are stored in the basement stock room of Building 12, which houses the Motion Picture and Sheet Film Division. Stored sources are kept in a locked safe under the supervision of Mr. Richard Deane. Several of the stored sources were examined and found to be labeled as required by Part 20 to indicate their contents. Detailed records are maintained in this stock room of all receipts of luminous buttons and signs and the exact location of all signs in use. Older sources were not individually identified by the manufacturer by use of serial numbers, but more recently procured sources are so identified and due note is made in the inventory records of these serial numbers. Periodic inventories are taken of mounted luminous sources. The current Kodak specifications and inspection procedures for tritium luminous sources are attached to this report as Exhibit "B".

12. Loss of Sources and Corrective Action

On 6/25/59 this inspection office received a letter from Dr. Sutton reporting the loss of 11 luminous markers, each of which contained approximately 60 mc of tritium. A copy of this letter and the attachment which accompanied it is appended to this report as Exhibit "A". This office contacted Sutton by telephone on 6/30/59, and the circumstances of the loss were confirmed to be as reported, with no recovery having been accomplished or anticipated. This office subsequently scheduled a reinspection of this license for 7/30/59, at which time the circumstances of the loss and the corrective action taken were to be reviewed in detail.

The inspector met with Dr. Sutton and Mr. Golem, Manager of the Motion Picture and Sheet Film Division, and several of the latter's staff assistants. The circumstances of the loss and corrective action were reviewed and confirmed to have been as previously reported. In summary, construction work had been conducted in darkrooms where luminous buttons and signs were employed. These darkrooms were located in Building 12. This building is occupied by the Motion Picture and Sheet Division, which employs more than 1,000 persons. Construction was performed by outside workers. The work was performed during the first three week-ends in May 1959. On the first Monday following completion of this work it was found that 11 of the U. S. Radium Corp. Model LAB-252 B-1 sources were missing from the laboratory carts used and kept in these areas. Small luminous sources had been firmly attached to mounting brackets, which were in turn attached to the carts. Effort had been made to secure the markers in place so that it would be quite difficult to remove them. However, the brackets holding the sources which were lost had been attached to the carts by screws which were easily unfastened. The entire units of sources and mounting brackets had been taken.

In previous years occasional loss of radium-activated luminous buttons had not been unusual. Such sources made attractive souvenirs and had been known to be utilized in employees' homes to mark light switches. Tight controls and close inventory keeping procedures were instituted with commencement of use of licensed byproduct materials. The only other known loss of tritium-activated sources occurred about one year ago when two markers were removed from a supervisor's desk. Then, as now, all personnel with access to the areas in which loss occurred were contacted. Opportunity was presented for return of the markers without prejudice to or identification of the taker. The sources lost in the previous occurrence were recovered within two days. No recovery of the 11 sources lost this year has been effected. Sutton and Golem believe that these sources were taken as souvenirs by the outside construction workers, who were sufficiently concerned about current construction unemployment in the Rochester area so that promise of no reprisal was insufficient to induce them to return the sources. They surmise that the takers permanently disposed of the sources upon discovery of the efforts to recover them.

Corrective action taken included conducting new discussions with personnel frequenting areas of use of the luminous sources to re-emphasize that they were subject to controls imposed by the AEC and that they were not to be tampered with. The method of installation of the tritium-activated markers was reviewed, and all markers were remounted in a manner designed to foil all but the most determined taker. A darkroom area which currently was open in Building 12 was visited by the inspector. Typical installations of sources in pipes and on partitions and laboratory carts were observed. This inspection included the examination of the revised mounting techniques employed on the laboratory carts of the type from which the lost sources were taken.

All licensed tritium-activated luminous sources were reported to have been remounted in the same manner. The luminous button was mounted in a counter-sunk hole in a wooden block. A lucite cover plate was fastened over the face of this block to protect the source. The heads of the screws holding this lucite cover in place were filed flat so that they could not be removed. The wooden block in which the source was mounted was firmly attached to the cart or other object by glue and hidden screws. The screws were placed in counter sunk holes and the holes were then filled flush to the outer surface of the blocks with wooden plugs, which were glued in place. It appeared that the source-holding brackets could be removed from their locations only by determined use of a hammer and chisel or by some other equally aggressive and destructive attack.

EASTMAN KODAK COMPANY

ROCHESTER 4, N.Y.

1959

TELEPHONE
CONGRESS 6-2500

PLEASE ADDRESS REPLY TO
KODAK PARK WORKS

June 12, 1959

Atomic Energy Commission
New York Operations Office
70 Columbus Avenue
New York 23, New York

Gentlemen:

Subject: Luminous Markers Containing Tritium

Reference: AEC License #31-461-10 (F61)

CFR Title 10, Chapter 1, Part 20, Section 20.403 C

The Radiation Committee at Kodak Park, Eastman Kodak Company, Rochester, New York holds the above license for use of sealed luminous markers containing tritium. Our control procedures are essentially those described in my letter of January 14, 1958 to J. W. Hitch, Division of Licensing, a copy of which is attached. Particular attention has been paid to maintaining control inventories and informing operating personnel of the controls on the use of these small sealed sources. This was emphasized since prior to the introduction of these tritium activated markers, the radium activated ones that had been used for many years were less rigidly controlled.

Our main purpose in changing to tritium was to substitute an intrinsically safer material. In this case the substitution eliminates an external radiation exposure.

The first lot of markers that we purchased were sealed sources from U. S. Radium Corporation, Model No. LAB-252 B-1 containing approximately 60 millicuries of tritium (each) on "tritiated foil." They are well-sealed as described in the U. S. Radium Corporation's plans filed with the Atomic Energy Commission.

In the course of routine inventory it was discovered that eleven (11) such markers had been removed from equipment in one building at Kodak Park, Rochester, New York. An investigation has revealed the following: The markers were probably removed on three separate occasions in different areas sometime early in May 1959. Two of these episodes occurred during weekend maintenance operations. A large but fairly definite number of persons had access to the areas. There was no evidence that any marker was broken or (would have to be broken) during removal.

ACTION	SIGNATURE	DATE
INS		

Exh. B. 1 A - 31



June 12, 1959

All personnel with access to these areas have been contacted. The situation has been explained to them and opportunity has been presented for return of the markers without prejudice to or identification of the taker. Since two weeks have elapsed without return of these items, it appears improbable that they will be returned.

Our current plans are (1) to extend our educational activity to all persons who might enter a department where these or similar markers are used and (2) to review all installations to see that easy removal is discouraged by the installation method.

Our interpretation of section 20.403 C of the Standards For Radiation Protection is that a 30-day report is required whenever an incident is likely to have resulted in exposure to any individual in excess of any of the limits in Part 20. In this case there would be no exposure if, as is probable, the markers are not deliberately broken open. If a marker were broken open, only a fraction of the tritium present could be released and absorbed. We cannot accurately judge the amount that might be absorbed but we believe it would be small.

Your comments on this "incident" would be appreciated.

Yours very truly,

William L. Sutton, M.D.

William L. Sutton, M. D.
Secretary Kodak Park Radiation Committee
Laboratory of Industrial Medicine

WLS:mb

Enclosure

January 14, 1958

William D. Miller
Special License, Bureau of Radiation
Division of Health, U.S. Department
of Health, Education and Welfare

Attention: William D. Miller

Re: LEGARS (8142)

Subject: Application for extension of license 31-461-10 and amendment No. 2 thereof issued August 19, 1957 to Eastman Kodak Company, Kodak Park Works.

Dear Mr. Miller:

This is in reference to your letter of December 30, 1957 concerning our application for extension of our license for markers painted with New England Nuclear Corporation's "Safeglow" paint containing hydrogen 3.

In consideration of this license, please refer to our previous applications for license No. 31-461-10 and its amendment and letters of April 5, 1957 and October 29, 1957 to Mr. Paul C. Aebersold.

Attention is directed to the fact that our application of 11/27/57 for extension of license 31-461-10 involves three considerations. (1) Extension of maximum millicuries allowed under license to an additional 8 curies in 600 sources. (2) To include any Eastman Kodak Company department or plant in the United States or its territories and (3) approval for lucite engravings to be painted with "Safeglow" - plans and description of which are attached to the application.

To answer your questions:

1. Please refer to letter of James W. Hitch, Assistant Chief of your division dated November 19, 1957, item 2, in which he states that "any object painted with tritium in quantities greater than that stated in section 20.203 shall be labeled with at least the following: standard radiation symbol, "Caution" or "Danger" - "Radioactive Materials" - "Tritium." All engravings and all dark room locators (tritium buttons) from New England Nuclear Corporation to which this application applies will be marked with such a label. A duplicate of this label is attached.

COPY

William O. Miller

Page 2

January 14, 1958

2. All dark room locators and painted engravings will be received at a central point at Kodak Park (Finished Film Supplies). There, accurate records will be maintained on intake, storage and department or plant and department to which the locator or engraving is sent. Each department using such locators or engravings will maintain its own records as to intake and location within the department of these objects. The Laboratory of Industrial Medicine will review these practices and the inventories and maintain summaries, thereof on an annual basis.

3. Lucite engravings painted with "Safeglow", described in application of 11/27/57: 95% or more of these will be used in one department in Kodak Park, Rochester, New York. Dark room locators model NEP-1 containing 8 millicuries H_3 ; the majority of these locators will be used in several departments at Kodak Park, the minority of them in other plants. A list of these plants follows:

Kodak Park Works, Rochester, New York

Eastman Kodak Company Processing Laboratories: Chamblee, Atlanta, Georgia; Chicago, Illinois; Dallas, Texas; Fair Lawn, New Jersey; Findlay, Ohio; Flushing, New York; Los Angeles, California; Palo Alto, California; and Kodak Hawaii, Ltd., Hawaii.

4. Storage of appreciable quantities of tritium containing sources (both dark room locators and engravings) will be prohibited in operating departments or plants. The dark room locators stored in Kodak Park central distributing center (Finished Film Supplies) will be kept to a minimum - the maximum amount not to exceed 250 markers (8 millicuries locator or equivalent of 2 curies of tritium). The spare lucite engravings will be stored in the department using the majority of the engravings. A maximum of 100 such engravings will be stored at one time or the equivalent of about 2 curies of tritium. Both of these buildings are film manufacturing buildings in which there are the usual stringent precautions against fire, including automatic sprinkler systems, and in which there is good general ventilation. It is not our intention to install local exhaust ventilation in either area. In both storage areas, the containers will be non-combustable and clearly marked as to their content and the presence of radioactive material. It should be noted that our Fire Department will be aware of the location of these areas and also that our fire control practices are such that no one would enter this area after a fire has started without air supplied respirators.

I hope this information will be adequate to allow you to continue to process our application. I would like to point out that, we feel that tritium offers advantages as a luminous paint activator in that it is intrinsically less hazardous than radium.

COPY

January 14, 1958

James W. Hitch, Assistant Chief
Byproduct Licensing Isotopes Extension
Division of Licensing and Regulation
United States Atomic Energy Commission

Attention: William C. Miller

Re: IEB:NB (8142)

Subject: Application for extension of license 31-461-10 and amendment No. 1 thereof issued August 19, 1957 to Eastman Kodak Company, Kodak Park Works.

Dear Mr. Miller:

This is in reference to your letter of December 30, 1957 concerning our application for extension of our license for markers painted with New England Nuclear Corporation's "Safeglow" paint containing hydrogen 3.

In consideration of this license, please refer to our previous applications for license No. 31-461-10 and its amendment and letters of April 5, 1957 and October 29, 1957 to Mr. Paul C. Aebersold.

Attention is directed to the fact that our application of 11/27/57 for extension of license 31-461-10 involves three considerations. (1) Extension of maximum millicuries allowed under license to an additional 8 curies in 600 sources. (2) To include any Eastman Kodak Company department or plant in the United States or its territories and (3) approval for lucite engravings to be painted with "Safeglow" - plans and description of which are attached to the application.

To answer your questions:

1. Please refer to letter of James W. Hitch, Assistant Chief of your division dated November 19, 1957, item 2, in which he states that "any object painted with tritium in quantities greater than that stated in section 20.203 shall be labeled with at least the following: standard radiation symbol, "Caution" or "Danger" - "Radioactive Materials" - "Tritium." All engravings and all dark room locators (tritium buttons) from New England Nuclear Corporation to which this application applies will be marked with such a label. A duplicate of this label is attached.

COPY

William O. Miller

page 3

January 14, 1958

On the other hand, its acceptance as a useful material for this purpose by industry and operating departments is discouraged both by its expense as compared to radium and by the possibility that its ease of use may be complicated too much (as compared to radium) by restrictive requirements concerning health protection. We would, therefore, like a decision from you about this application as soon as possible.

Yours very truly,

William L. Sutton, M. D.
Secretary, Radiation Committee
Eastman Kodak Company
Kodak Park Works

WLS:mb
Enclosure

RECEIVED

JAN 15 1958

EASTMAN KODAK COMPANY

RECEIVED
JAN 15 1958
RADIATION COMMITTEE
EASTMAN KODAK COMPANY
KODAK PARK WORKS
ROCHESTER, N. Y.

EASTMAN KODAK CO.

SPECIFICATION

RADIOACTIVE LUMINOUS MARKERS

Number EK 6540-1
Date July 1959

Supersedes New Specification
Revisions:

A. SCOPE

A-1. This specification covers two categories of radioactive luminous low afterglow markers, namely luminous buttons and luminous signs, labels and others.

B. APPLICABLE SPECIFICATIONS

B-1. The following specifications of the issue in effect relate to this specification where applicable:

Atomic Energy Commission By-Product Material License No. 31-461-10 with amendments
Atomic Energy Commission Re-negotiation Act of 1951
Code of the Federal Register, Title 10, Chapter 1, Part 20, Standards for Protection Against Radiation
Interstate Commerce Commission, Tariff No. 10, Section 73.391 to 73.396
State of New York, Industrial Code, Rule No. 38, Radiation Protection

Kodak References:

ECM&U Practice Standards, Section B-53
Film Manufacturing Division, Standard Routine Test Method MPS-29-01
Kodak Park Waste Disposal Directory
Purchasing Division Manual, Section 3, page 300

C. REQUIREMENTS

- | | |
|--------------------------------|---|
| C-1. <u>Radioactive Source</u> | Tritium (H3) dispersed in paint |
| C-2. <u>Color</u> | White (daylight) Luminescent, low or no afterglow |
| C-3. <u>Intensity</u> | Range 0.080 to 0.125 microcandle-power. Luminous area for buttons shall be approximately 1/4 in. diam. |
| C-4. <u>Construction</u> | Markers shall be constructed in accordance with drawings shown in this specification or attached to the purchase order. |

SPECIFICATION

Each button shall be sealed so that radioactive material can escape.

Markers shall not have removable radioactive contamination on the outside surfaces above 50 counts per minute per group of 10 buttons (Section D-6).

Each marker shall be labeled in accordance with CFR Part 20, Part 20.203 as follows - Buttons shall be labeled on the back or on the front of a 1/2-inch diam metal disk with the number; HG pt, standard radiation symbol, model number, date and manufacturer's name.

Labels and signs shall also be provided and in addition, the number of millicuries of source material used shall be shown as well as the phrase "Caution - Radioactive Materials".

D. METHODS OF TEST

D-3. Intensity - Determine the luminous intensity of a sample of radioactive buttons representative of the shipment consisting of 10 percent of the entire shipment. Position each button sampled in a holder opposite the measuring photocell. Measure the intensity using a calibrated Photovolt photometer Model 520M. If any one button is outside of specification limits for intensity, check the entire shipment and separate all buttons that are outside of the specification. Report in microcandlepower to the nearest 0.001 unit, the intensity and serial number of each button measured.

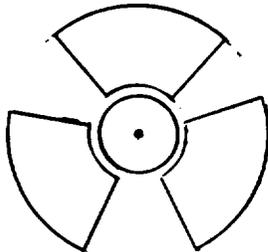
D-5 & D-6. Leakage and Contamination - Determine whether or not source material is on the outside surfaces of each button by wiping in groups of 10 buttons per tissue or by wiping a maximum of 5 signs or labels depending on size with a 2-inch square tissue such as lens tissue. Count the beta radioactivity of each tissue in a suitable proportional counter for 10 minutes and deduct the known background radiation level shown by the instrument. If the activity is more than 50 counts per minute, clean, store for not less than one week, rewipe with a separate tissue each button in groups of 10 buttons that showed contamination or each sign or label and count the beta radioactivity of the tissue as before. Separate from the lot each marker or group of markers which show leakage. Report in counts per minute the surface radioactivity of each sample tested and the serial number of each marker which shows leakage.

E. PACKAGING AND MARKING

E-1. Packaging - Markers shall be packaged in such a manner that rough shipment will not cause markers to develop leaks.

E-2. Marking - Each shipment shall include a report as to the number of milligrams of radioactive source material used for each marker. Shipping containers shall be marked with the name of the material, quantity, specification number and the standard radiation warning symbol.

The following radiation symbol shall apply:



Symbol Color: Radiation Purple
Background Color: High Visibility Yellow

F. SAMPLING AND INSPECTION

F-1. Sampling - Samples shall be taken by the purchaser consisting of a 100 percent sampling of each shipment of radioactive buttons, signs, labels, etc.

F-2. Inspection - Samples shall be inspected for contamination, leakage and intensity.

G. NOTES

G-1. None.

EASTMAN KODAK CO.

KODAK PARK INSPECTION PROCEDURE

RADIOACTIVE LUMINOUS MARKERS

Number EK 6540
Date July 1959

ROUTINE TESTS

STORES DIVISION, RECEIVING DEPARTMENT

1. Do not open the shipping container.
2. Notify the Kodak Park Radiation Committee, Atten Dr. W. L. Sutton, Secretary, Laboratory of Industrial Medicine, Bldg 2 of the arrival of the shipment.
3. Forward the unopened shipment for contamination tests to the Manufacturing Experiments Division, Atten Mr. W. J. Lees, Bldg 14.

MANUFACTURING EXPERIMENTS DIVISION

1. Check the shipment for:
Quantity
Condition
2. Check 100 percent of a lot of buttons in groups of 10 or each sign and label for:
Labeling
Contamination
Leakage
3. Separate from the lot those markers that show leakage.
4. Send the vendor's report of the number of millicuries of source material used to the Laboratory of Industrial Medicine, Atten Dr. W. L. Sutton, Bldg 2.
5. Send the vendor's packing list and quantity received on Form No. KP 48009 to the Stores Division, Receiving Department, Atten Mr. J. T. Murray, Bldg 211.
6. Send a copy of the test results to:
Laboratory of Industrial Medicine, Atten Dr. W. L. Sutton, Bldg 2
Ordering Department
Material Standards Department, Bldg 2
7. Check the contamination levels and obtain verbal permission to release the markers from the Secretary of the Kodak Park Radiation Committee, Dr. W. L. Sutton.

MANUFACTURING EXPERIMENTS DIVISION (Cont'd)

8. When released, send the markers to the ordering department, if luminous buttons, to the Motion Picture and Sheet Film Division, Film Supplies Staff Dept, Atten Mr. R. H. Deane, Bldg 12.

9. Identify requisitions for radioactive markers with the name and location of the ordering department.

10. Upon receipt of the debit memorandum from the Purchasing Division, forward the labels, signs, etc manufactured within Kodak Park to the Distribution Center for shipment to the vendor for painting.

PURCHASING DIVISION

1. Send for approval all orders for the purchase of radioactive materials to the Laboratory of Industrial Medicine, Atten Dr. W. L. Sutton, Bldg 2.

2. Upon receipt of the approval, complete the debit memorandum for shipment of Kodak Park manufactured signs and labels to the vendor.

LABORATORY OF INDUSTRIAL MEDICINE

1. Examine for approval all orders for radioactive materials.

2. Maintain an inventory of all sources of potentially harmful radiation in Kodak Park.

3. Maintain the required Atomic Energy Commission licenses to cover this use of radioactive by-products.

4. Send approved orders for radioactive materials to the Purchasing Division, Atten Buyer 63, Bldg 26.

5. Send release notice after contamination and leakage tests to the Manufacturing Experiments Division, Atten Mr. W. J. Lees, Bldg 14.

FILM SUPPLIES STAFF DEPARTMENT

1. Upon receipt of the buttons from the Manufacturing Experiments Division, send all of the buttons from a shipment for intensity tests properly identified with the name, order number, specification number and standard radiation warning label along with a certification of decontamination to the Research Laboratory, Atten Mr. K. S. Weaver, Bldg 59.

FILM SUPPLIES STAFF DEPARTMENT (Cont'd)

2. Send for photographic effect tests 2 percent (minimum of 10) of the buttons which were selected at random properly identified to the Motion Picture and Sheet Film Quality Control Office, Atten Mr. E. F. Lalonde, Bldg 12.
3. Maintain an inventory of each button ordered and supplied to departments.

ORDERING DEPARTMENT

1. Send labels, signs, etc, manufactured within Kodak Park for tritium painting to the Manufacturing Experiments Division, Atten Mr. W. Richardson, Bldg 14.
2. Maintain an inventory of radioactive buttons, signs, labels, etc and information on their location.
3. Follow the Kodak Park Waste Disposal Directory for any disposal and maintain the proper records.

RESEARCH LABORATORY

1. Check buttons for:
Intensity
2. If any one button is outside of the limits for intensity, check all buttons and separate all buttons that are outside the intensity limits.
3. Send a copy of the test report to:
Film Supplies Staff Department, Atten Mr. R. H. Deane, Bldg 12
Ordering Department

MOTION PICTURE AND SHEET FILM QUALITY CONTROL OFFICE

1. Check 2 percent (minimum of 10) of the buttons which were selected at random for intensity (the 10 percent of the shipment) for:

Photographic effect: Store buttons for 24 hours in total darkness to eliminate after-glow effect. Place buttons a distance of 1 1/2 inches from the emulsion of Royal Blue X-ray Code 5522, Tri-X Code 6143, Royal Ortho Code 6144 and Infrared Aerographic Code H5424 films each for a period of 4 minutes. Process the films clear. Report for each serial numbered button tested the net density to the nearest 0.02 for each of the films.

MOTION PICTURE AND SHEET FILM QUALITY CONTROL OFFICE (Cont'd)

1. (Cont'd)

<u>Film Code</u>	<u>Net Fog Density</u>
H5424	0.00 max
5522	0.04 max
6143	0.40 max
6144	0.40 max

2. Send a copy of the release letter to the Film Supplies Staff Department,
Atten Mr. R. H. Deane, Bldg 12.