UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

October 23, 1978

LIS ORIGINAL

MEMORANDUM FOR: B. H. Grier, Director, Region I
J. P. O'Reilly, Director, Region II
J. G. Keppler, Director, Region III
K. V. Seyfrit, Director, Region IV
R. H. Engelken, Director, Region V

FROM: Leo B. Higginbotham, Acting Director, Division of Fuel Facilities and Materials Safety Inspection, IE

SUBJECT: IE BULLETIN NO. 78-13 - FAILURES IN SOURCE HEADS OF KAY-RAY, INC., GAUGES MODELS 7050, 7050B, 7051, 7051B, 7060, 7060B, 7061 AND 7061B

The subject IE Bulletin should be dispatched for action on October 27, 1978, to all general and specific licensees with the subject Kay-Ray, Inc. gauges.

The text of the Bulletin with enclosures, the draft letter to licensees, and the names and addresses of the licensees are enclosed for this purpose.

Leo B. Higginbotham, Acting Director
Division of Fuel Facilities and
Materials Safety Inspection
Office of Inspection and Enforcement

Enclosures:
1. Draft Transmittal Letter
2. IE Bulletin No. 78-13
with enclosures
3. Licensee List

CONTACT: E. D. Flack, IE
49-28188

KAY-RAY INC.

INDUSTRIAL PROCESS CONTROL EQUIPMENT

516 West Campus Drive • Arlington Heights, Illinois 60004 • (312) 259-5600 • TELEX: 281-085 • CABLE: KAYRAY

June 30, 1978

Dear Sir;

In follow-up to our letter of March 6, 1978, (copy attached) we wish to advise you of additional action taken by Kay-Ray concerning the referenced source head structural problem. These rare failures have not resulted in any definable radiation overexposure to plant personnel, but we believe that every reasonable precaution should be undertaken.

Kay-Ray has developed a support bracket that can be simply added by your maintenance people to your source heads which will prevent the dome from separating from the head if a weld fracture should occur. This bracket substantially reduces the possibility of a radiation hazard developing by keeping the lead dome attached to the source head independently of the welding. The attached drawing illustrates the brackets that have been designed to be compatible with the different variations of source heads in this family. The bracket can be easily added to your source head in less than fifteen minutes, while the head is in normal operation. No process downtime is required.

To encourage use of this safety feature, Kay-Ray will supply this bracket free of charge at your request. Please fill out the attached card to confirm the specific source heads presently installed at your facility so that the proper bracket and instructions can be sent.

In closing, we would like to emphasize the importance of this safety precaution. We hope to hear from your shortly.

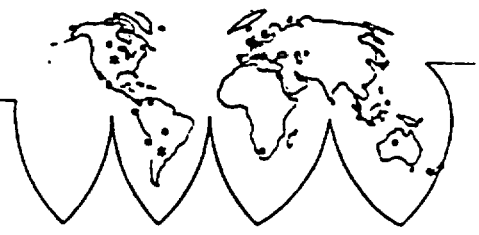
Sincerely,

KAY-RAY, INC.

C. Grabowski

C. Grabowski
National Service Management

CG/bt
encl.



(Draft Letter to All General and Specific Licensees with Kay-Ray Gauges Models 7050, 7050B, 7051, 7051B, 7060, 7060B, 7061, 7061B)

IE Bulletin No. 78-13

Gentlemen:

The enclosed Nuclear Regulatory Commission (NRC) IE Bulletin No. 78-13 requires action by you with respect to certain gauging devices in your possession. Records show that you have received one or more of these gauges which are manufactured by Kay-Ray, Incorporated. These gauges contain radioactive material regulated by the NRC. The possession and use of the radioactive material contained in the gauges is governed by either a specific NRC license issued to you or under the general license provisions of NRC regulation 10 CFR Part 31, Section 31.5. A copy of 10 CFR 31.5 is provided for your information. If you possess gauges under a general license, you should have received a copy of this regulation from the gauge vendor when you received the gauges.

Should you have any questions regarding this Bulletin or the actions required of you, please contact this office.

Sincerely,

Signature
(Regional Director)

Enclosures:
1. IE Bulletin No. 78-13
2. List of IE Bulletins Issued in 1978

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C., 20555

October 27, 1978

IE Bulletin No. 78-13

FAILURE IN SOURCE HEADS OF KAY-RAY, INC., GAUGES MODELS 7050, 7050B, 7051, 7051B, 7060, 7060B, 7061, AND 7061B

Description of Circumstances:

The U.S. Nuclear Regulatory Commission (NRC) has received information that on three occasions in the past year fractures have occurred at the weld between the dome and the box of source heads used in the subject gauges manufactured by Kay-Ray, Inc. These gauges contain radioactive material regulated by the NRC. The possession and use of the radioactive material in the gauges is governed by either a specific NRC license or under the general license provisions of NRC regulation 10 CFR 31, Section 31.5. A copy of 10 CFR 31.5 is enclosed.

These incidents of weld fractures in the gauges have caused the dome to separate from the box, exposing the 500 millicurie cesium-137 sealed source. In one case, the radioactive source itself fell loose from the dome and was completely exposed. The separation of the dome from the box could result in a radiation overexposure if an individual actually handled the radioactive source or worked in close proximity to a gauge where the lead dome had separated from the box.

In order to correct this potential radiation hazard, Kay-Ray has developed a support bracket which they will supply free of charge to prevent the dome separation if a fracture does occur. In a June 30, 1978 letter (copy enclosed) Kay-Ray advised you of the availability of the support bracket and requested you to return a card confirming the specific source heads in your possession. A number of companies have not returned a card to Kay-Ray, Inc.

In order to assure correction of this potential hazard, you should complete the following actions.

Actions to be taken by you as a licensee of the NRC:

1. On the enclosed form, enter your company's name, address and telephone number, complete the other actions according to the instructions, and sign the preaddressed form and return it to the NRC after completing all the required actions.

If you have transferred or otherwise disposed of any Kay-Ray gauges, take the action in item number 2, following:

2. Complete item 1 of the enclosed form, and (a) if you possessed the gauge under a general license of 10 CFR 31.5 include with the form a statement of how you have complied, or information which does comply, with the requirements of 10 CFR 31.5(c)(8) or (9) and provide the name and address of the persons or organizations to whom the gauge was transferred, or (b) if you possessed the gauge under a specific license include with the form a statement of how you complied with the requirements of 10 CFR 30.41 and provide the name and address of the persons or organizations to whom the gauge was transferred.

If you have any of the specified Kay-Ray gauges in your possession, take the actions in item numbers 3 through 5, following:

3. Within two (2) days of receipt of this Bulletin, visually inspect the source head on models 7050, 7050B, 7051, 7051B, 7060, 7060B, 7061, and 7061B of Kay-Ray gauges in your possession for evidence of weld cracks between the dome and box. If cracks are found, take the following actions: (a) contact Kay-Ray immediately at (312) 259-9244 and inform them, and (b) file a report with this office as required by 10 CFR 31.5(a)(5). (A copy of 10 CFR 31.5 is enclosed.)

4. Within ten (10) days after receiving the support bracket(s) from Kay-Ray, install a support bracket on each Kay-Ray gauge model (identified in item 3 above) in your possession.

5. Within twelve (12) days after receiving the support bracket(s) from Kay-Ray, report the completion of the above actions to this office. The report should be submitted by completing and returning the enclosed preprinted, preaddressed form to the NRC.

In addition to the above specific actions, we recommend that you read and become thoroughly familiar with the conditions of either the specific NRC license or the general license of 10 CFR 31.5 whichever authorizes your use and possession of the gauge devices.

Approved by GAO, B180225 (R0072); clearance expires 7-31-80. Approval was given under a blanket clearance specifically for identified generic problems.

Enclosures:
1. Report Form
2. 10 CFR 31 (extract)
3. Kay-Ray letter dtd 6/30/78
4. Kay-Ray Card

PERMIT NO 876
Arlington Heights
Illinois 60004

BUSINESS REPLY MAIL
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KAY-RAY INC.

INDUSTRIAL PROCESS CONTROL EQUIPMENT
516 West Campus Drive, Arlington Heights, Illinois 60004

KAY-RAY INC.

brackets listed below:

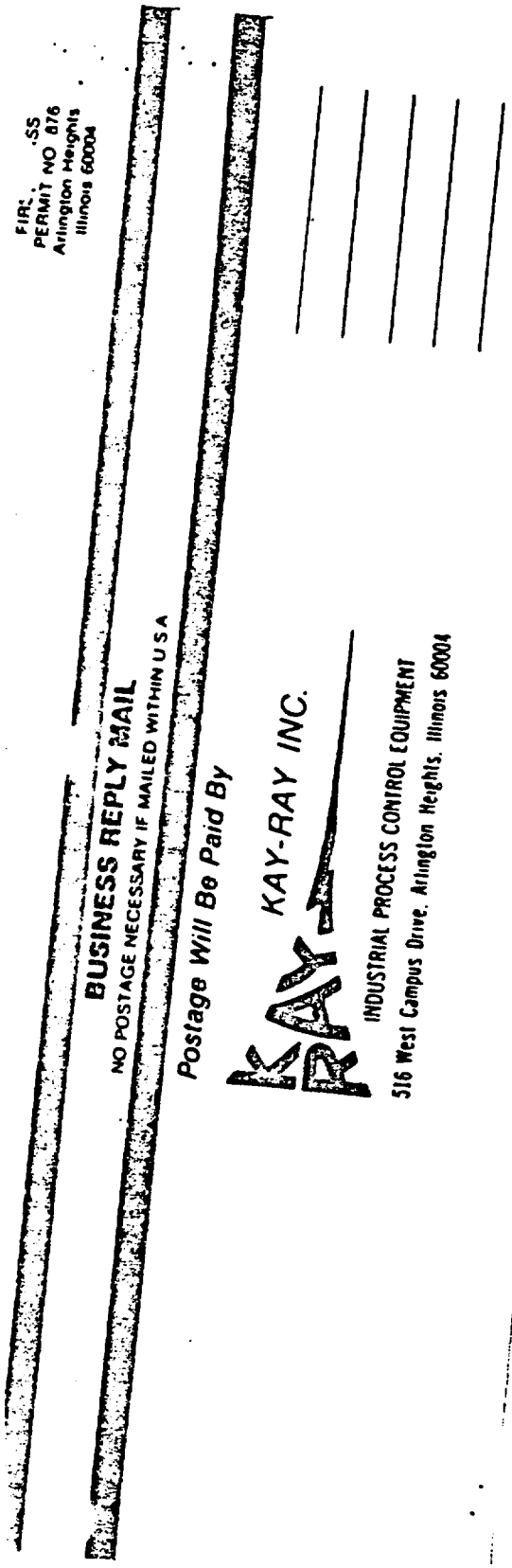
Shipping address:

Street:

City/State:

tions:

No.of Mds.



NG OF IE BULLETINS
ISSUED IN 1978

	Date Issued	Issued To
ct - n G.E.	1/16/78	All Power Reactor Facilities with an OL or CP
	1/30/78	All Power Reactor Facilities with an OL or CP
osive ccumula- ted with stem	2/8/78	All BWR Power Reactor Facilities with an OL or CP
Quali- Certain Limit ide ainment	2/21/78	All Power Reactor Facilities with an OL or CP
ing of aker ontact eneral iX	4/14/78	All Power Reactor Facilities with an OL or CP
Cutler- pe M Relays ils	5/31/78	All Power Reactor Facilities with an OL or CP
afforded e Respirators ied-Air Hoods	6/12/78	All Power Reactor Facilities with an OL, all class E and F Research Reactors with an OL, all Fuel Cycle Facilities with an OL, and all Priority 1 Material Licensees

LISTING OF IE BULLETINS ISSUED IN 1978

	Date Issued	Issued To
from nsfer	6/12/78	All Power and Research Reactor Facilities with a Fuel Element transfer tube and an OL.
kage d with ıell	6/14/78	All BWR Power Reactor Facilities with an OL or CP
ı k umulator	6/27/78	All BWR Power Reactor Facilities with an OL or CP
: Mark I ɔrus	7/21/78	BWR Power Reactor Facilities for action: Peach Bottom 2 and 3, Quad Cities 1 and 2, Hatch 1, Monticello and Vermont Yankee
d Material ressure	9/29/78	All Power Reactor Facilities with an OL or CP

FIRST CLASS
PERMIT NO 876
Arlington Heights
Illinois 60004

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NO POSTAGE NECESSARY IF MAILED WITHIN U.S.A.

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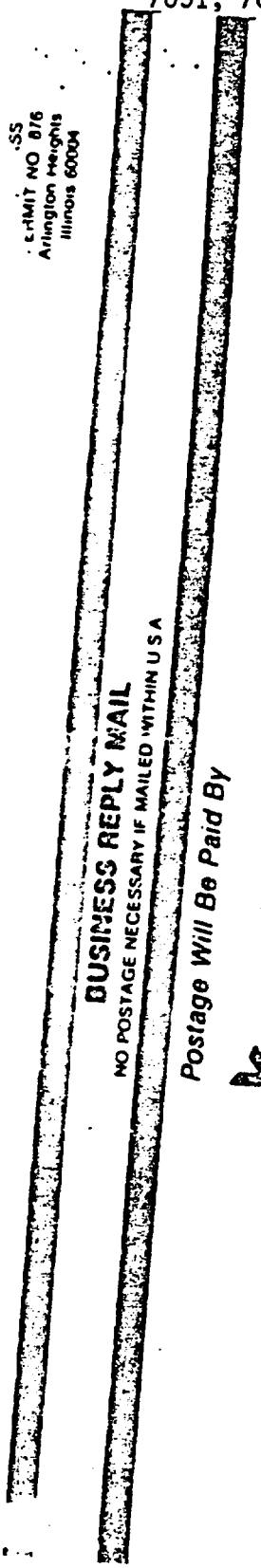
KAY-RAY INC.
INDUSTRIAL PROCESS CONTROL EQUIPMENT
516 West Campus Drive, Arlington Heights, Illinois 60004

October 23, 1978

IE Bulletin No. 78- 13
Failures in Source Heads of Kay-Ray, Inc., Gauges Models 7050, 7050B, 7051, 7051B, 7060, 7060B, 7061, and 7061B



	MAIL STOP
?A	MNBB-6209
	MNBB-8103
	MNBB-3709
	MNBB-12105
	NL-5650
	SS-958
	Phil-428
	Phil-268
	Phil-542
	Phil-216
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P:DOR:NRR	Phil-370
	Phil-202
	H-1016
A:SP	MNBB-7210A

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Dir., FFMSI:IE
sst. Dir., FFMSI:IE

ADM Phil-050

Director for
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and Environmental

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U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

Licensee Name: _____

Address: _____

_____

_____

Telephone: _____

If you possess the gauges under a specific NRC license, enter the license number: _____

1. If you have transferred or otherwise disposed of any Kay-Ray gauges, place a check or mark in the box and provide the information required by action item 2 in the Bulletin instructions. /___/

Complete the following for Kay-Ray gauges in your possession:

2. Date the card was mailed to Kay-Ray, Inc., confirming the specific source heads in your possession. _____ (date)

3. Number of source heads visually inspected for evidence of weld cracks between the dome and box on models 7050, 7050B, 7051, 7051B, 7060, 7060B, 7061, and 7061B. _____ (number)

4. Number of source heads inspected in the items above which had weld cracks. _____ (number)

5. Date support brackets were received from Kay-Ray. _____ (date)

6. Date installation of support brackets was completed. _____ (date)

_____

_____
Signature and printed name of responsible individual or Radiation Safety Officer.

After completing the above actions and entering the required information, sign the form, fold it so that the NRC return address is showing, tape or staple closed and place in the mail. No postage is required.

PART 31 GENERAL DOMESTIC LICENSES FOR BYPRODUCT MATERIAL†

Sec.

35 FR 6425

§ 31.1 Purpose and scope.

This part establishes general licenses for the possession and use of byproduct material contained in certain items and a general license for ownership of byproduct material. Part 30 of this chapter also contains provisions applicable to the subject matter of this part.

38 FR 2220

§ 31.2 Terms and conditions.

(a) The general licenses provided in this part are subject to the provision of §§ 30.14(d), 30.34(a) to (e), *30.41, 30.51 to 30.63 and Parts 19, 20, and 21† of this chapter[1] unless indicated otherwise in the language of the general license.

[1] Attention is directed particularly to the provisions of the regulations in Part 20 of this chapter which relate to the labeling of containers.

*Amended 38 FR 33968.

†Amended 43 FR 6915.

30 FR 8185

§ 31.3 Certain devices and equipment.

A general license is hereby issued to transfer receive, acquire, own, possess and use byproduct material incorporated in the following devices or equipment which have been manufactured, tested and labeled by the manufacturer in accordance with the specifications contained in a specific license issued to him by the Commission.

(a) *Static elimination device.* Devices designed for use as static eliminators which contain, as a sealed source or sources, byproduct material consisting of a total of not more than 500 microcuries of polonium-210 per device.

(b) [Deleted 34 FR 6651.]

(c) [Deleted 35 FR 3982.]

(d) *Ion generating tube.* Devices designed for ionization of air which contain, as a sealed source or sources, byproduct material consisting of a total of not more than 500 microcuries of polonium-210 per device or of a total of not more than 50 millicuries of hydrogen-3 (tritium) per device.

§ 31.4 [Deleted 36 FR 16898.]

39 FR 43531

§ 31.5 Certain measuring, gauging or controlling devices.[2]

(a) A general license is hereby issued to commercial and industrial firms and research, educational and medical institutions, individuals in the conduct of their business, and Federal, State or local government agencies to acquire, receive, possess, use or transfer, in accordance with the provisions of paragraphs (b), (c) and (d) of this section, byproduct material contained in devices designed and manufactured for the purpose of detecting, measuring, gauging or controlling thickness, density, level, interface location, radiation, leakage, or qualitative or quantitative chemical composition, or for producing light or an ionized atmosphere.

[2] Persons possessing byproduct material in devices under the general license in § 31.5 before Jan. 15, 1975 may continue to possess, use or transfer that material in accordance with the requirements of § 31.5 in effect on Jan. 14, 1975.

(b) The general license in paragraph (a) of this section applies only to byproduct material contained in devices which have been manufactured or initially transferred† and labeled in accordance with the specifications contained in a specific license issued pursuant to § 32.51 of this chapter or in accordance with the specifications contained in a specific license issued by an Agreement State which authorizes distribution of the devices to persons generally licensed by the Agreement State.

39 FR 43531

(c) Any person who acquires, receives, possesses, uses or transfers byproduct material in a device pursuant to the general license in paragraph (a) of this section:

(1) Shall assure that all labels affixed to the device at the time of receipt and bearing a statement that removal of the label is prohibited are maintained thereon and shall comply with all instructions and precautions provided by such labels;

(2) Shall assure that the device is tested for leakage of radioactive material and proper operation of the on-off mechanism and indicator, if any, at no longer than six-month intervals or at such other intervals as are specified in the label; however;

(i) devices containing only krypton need not be tested for leakage of radioactive material, and

(ii) devices containing only tritium or not more than 100 microcuries of other beta and/or gamma emitting material or