UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

October 27, 1978

St. Regis Paper Co.
ATTN: Clarance Curtis
Bucksport, Maine 04416

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,

Robert T. Carlson for
Boyce H. Grier
Director

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

CONTACT: Robert O. McClintock
(215) 337-5206

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

IE Bulletin No. 78-13
Date: October 27, 1978

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 (RO072); 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 dated 6/30/78
4. Kay-Ray Card

LISTING OF IE BULLETINS ISSUED IN 1978

Bulletin No.	Subject	Date Issued	Issued To
78-01	Flammable Contact - Arm Retainers in G.E. CR120A Relays	1/16/78	All Power Reactor Facilities with an Operating License (OL) or Construction Permit (CP)
78-02	Terminal Block Qualification	1/30/78	All Power Reactor Facilities with an OL or CP
78-03	Potential Explosive Gas Mixture Accumulations Associated with BWR Offgas System Operations	2/8/78	All BWR Power Reactor Facilities with an OL or CP
78-04	Environmental Qualification of Certain Stem Mounted Limit Switches Inside Reactor Containment	2/21/78	All Power Reactor Facilities with an OL or CP
78-05	Malfunctioning of Circuit Breaker Auxiliary Contact Mechanism-General Model CR105X	4/14/78	All Power Reactor Facilities with an OL or CP
78-06	Defective Cutler-Hammer, Type M Relays With DC Coils	5/31/78	All Power Reactor Facilities with an OL or CP
78-07	Protection afforded by Air-Line Respirators and Supplied-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

Bulletin No.	Subject	Date Issued	Issued To
78-08	Radiation Levels from Fuel Element Transfer Tubes	6/12/78	All Power, Test, and Research Reactor Facilities with an OL having Fuel Element Transfer Tubes.
78-09	BWR Drywell Leakage Paths Associated with Inadequate Drywell Closures	6/14/78	All BWR Power Reactor Facilities with an OL (for action) or CP (for information).
78-10	Bergen-Paterson Hydraulic Shock Suppressor Accumulator Spring Coils	6/27/78	All Power Reactor Facilities with an OL or CP
78-11	Examination of Mark I Containment Torus Welds	7/21/78	BWR Power Reactor Facilities with an OL for action: Peach Bottom 2 and 3, Quad Cities 1 and 2, Hatch 1, Monticello and Vermont Yankee. All other BWR Power Reactor Facilities with an OL for information.
78-12	Atypical Weld Material in Reactor Pressure Vessel Welds	9/29/78	All Power Reactor Facilities with an OL or CP.

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.

UNITED STATES
NUCLEAR REGULATORY COMMISSION

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REGION I
631 PARK AVENUE
KING OF PRUSSIA, PA. 19406

PART 31 GENERAL DOMESTIC LICENSES FOR BYPRODUCT MATERIAL†

Sec.

35 FR 3425

§ 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 22220

§ 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.

(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

10 microcuries of alpha emitting material and devices held in storage in the original shipping container prior to initial installation need not be tested for any purpose;

(3) Shall assure that the tests required by paragraph (c)(2) of this section and other testing, installation, servicing, and removal from installation involving the radioactive materials, its shielding or containment, are performed:

(i) in accordance with the instructions provided by the labels; or

(ii) by a person holding a specific license pursuant to Parts 30 and 32 of this chapter or from an Agreement State to perform such activities;

(4) Shall maintain records showing compliance with the requirements of paragraphs (c)(2) and (c)(3) of this section. The records shall show the results of tests. The records also shall show the dates of performance of, and the names of persons performing, testing, installation, servicing, and removal from installation concerning the radioactive material, its shielding or containment.

39 FR 43531

Records of tests for leakage of radioactive material required by paragraph (c)(2) of this section shall be maintained for one year after the next required leak test is performed or until the sealed source is transferred or disposed of. Records of tests of the on-off mechanism and indicator, required by paragraph (c)(2) of this section, shall be maintained for one year after the next required test of the on-off mechanism and indicator is performed or until the sealed source is transferred or disposed of. Records which are required by paragraph (c)(3) of this section shall be maintained for a period of two years from the date of the recorded event or until the device is transferred or disposed of.

41 FR 18300

(5) Upon the occurrence of a failure of or damage to, or any indication of a possible failure of or damage to, the shielding of the radioactive material or the on-off mechanism or indicator, or upon the detection of 0.005 microcurie or more removable radioactive material, shall immediately suspend operation of the device until it has been repaired by the manufacturer or other person holding a specific license pursuant to Parts 30 and 32 of this chapter or from an Agreement State to repair such devices, or disposed of by transfer to a person authorized by a specific license to receive the byproduct material contained in the device and, within 30 days, furnish to the Director of the appropriate Nuclear Regulatory Commission Inspection and Enforcement Regional Office listed in Appendix D of Part 20 of this chapter, a report containing a brief description of the event and the remedial action taken;

39 FR 43531

39 FR 43531

(6) Shall not abandon the device containing byproduct material,

(7) Shall not export the device containing byproduct material except in accordance with Part 110 of this chapter;†

(8) Except as provided in paragraph (c)(9) of this section, shall transfer or dispose of the device containing byproduct material only by transfer to a person holding a specific license pursuant to Parts 30 and 32 of this chapter or from an Agreement State, to receive the device and within 30 days after transfer of a device to a specific licensee shall furnish to the Director of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, a report containing identification of the device by manufacturer's name and model number and the name and address of the person receiving the device. No report is required if the device is transferred to the specific licensee in order to obtain a replacement device;

(9) Shall transfer the device to another general licensee only:

(i) Where the device remains in use at a particular location. In such case the transferor shall give the transferee a copy of this section and any safety documents identified in the label of the device and within 30 days of the transfer, report to the Director of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, the manufacturer's name and model number of device transferred, the name and address of the transferee, and the name and/or position of an individual who may constitute a point of contact between the Commission and the transferee; or

(ii) Where the device is held in storage in the original shipping container at its intended location of use prior to initial use by a general licensee.

(10) Shall comply with the provisions of §§ 20.402 and 20.403 of this chapter for reporting radiation incidents, theft or loss of licensed material, but shall be exempt from the other requirements of Parts 19, 20, and 21* of this chapter.

(d) The general license in paragraph (a) of this section does not authorize the manufacture or import of devices containing byproduct material.

* Amended 42 FR 28891.

† Amended 43 FR 6915.

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.

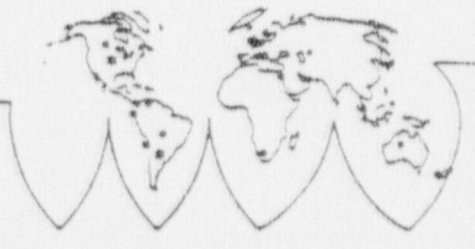
Sincerely,

KAY-RAY, INC.

C. Grabowski

C. Grabowski
National Service Management

CG/bt
encl.



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INDUSTRIAL PROCESS CONTROL EQUIPMENT

516 West Campus Drive, Arlington Heights, Illinois 60004

Please send immediately the brackets listed below:

Company Name:

Name:

Title:

Shipping Address:

Street:

City/State:

Special Shipping Instructions:

Source Hd.Mod.No.(s) _____ No.of Hds. _____

Source Hd.Ser.No.(s) _____