

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number

20-18386-04E

Docket or Reference number

030-20071

Amendment No. 05

Pyrotector, Inc.
333 Lincoln Street
Hingham, MA 02043

In accordance with application dated April 10, 1987, License Number 20-18386-04E is amended as follows:

Condition 13. is amended to read:

13. Each device distributed under the license shall be manufactured, tested and labeled in accordance with the statements, representations and procedures contained in Chloride Pyrotector, Inc.'s application dated February 20, 1980 and letters dated July 7, 1980, July 17, 1980, September 2, 1980, January 6, 1981, February 11, 1981, December 6, 1982 (enclosing Pyrotector's application dated December 2, 1982), December 10, 1982 and December 14, 1982 (enclosing Agreement between Chloride Pyrotector, Inc. and Pyrotector, Inc.); Grinnel Fire Protection Systems Company, Inc.'s letter dated December 21, 1982 (enclosing Pyrotector, Inc.'s application and letter dated December 10, 1982), letters dated June 28, 1983 and October 20, 1983; letter with enclosure dated June 12, 1984 and applications with enclosures dated August 27, 1985, June 23, 1986 and April 10, 1987.

FOR THE U. S. NUCLEAR REGULATORY COMMISSION

July 30, 1987

DATE

BY

[Signature]
Medical, Academic, and Commercial Use
Safety Branch
Division of Fuel Cycle, Medical, Academic,
and Commercial Use Safety
Washington, D. C. 20055

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NMSS LIC30
20-18386-04E PDR

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ML00

Send Copy To Region I 11



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

BETWEEN: William O. Miller, Chief
License Fee Management Branch
Office of Administration

Regional License Section
Material Licensing Branch
FCMS, Office of Nuclear Material
Safety & Safeguards

5/91

LICENSE FEE TRANSMITTAL

A. REGION HQs

1. APPLICATION ATTACHED

Applicant/Licensee: Pyrotech
Application Dated: 4/10/87
Control No.: 020157
License No.: 20-18386-04E

2. FEE ATTACHED

Amount: _____
Check No.: _____

3. COMMENTS

Signed _____
Date _____

B. LICENSE FEE MANAGEMENT BRANCH

1. Fee Category and Amount: 2H (\$120)

2. Correct Fee Paid. Application may be processed for:

Amendment ✓
Renewal _____
License _____

Signed W. Miller
Date 4/22/87



APR 24 1987

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

Pyrotector, Inc.
ATTN: Mr. David V. Walshe
333 Lincoln Street
Hingham, MA 02043

REFUND OF APPLICATION FEE

1. BACKGROUND:

Check Received April 22, 1987
Application Dated April 10, 1987
Check Number 101-00043
Check Amount \$340

2. REFUND:

Amount \$100

This refund is now being processed and will be sent as soon as possible.

3. REASON FOR REFUND:

Overpayment of amendment fees for letter dated April 10, 1987 for License 20-18386-04E as specified in fee Category 3H (\$120) and for License 20-18386-03, fee Category 3B (\$120) of \$170.31, 10 CFR 170.

for Glenda Jackson
Glenda Jackson
License Fee Management Branch
Division of Accounting and Finance
Office of Administration and
Resource Management

30-20072

42555.084

—8709090563—LP.

Pyrotector, Inc.

'87 APR 17 1957

30-20071

April 10, '87

U.S. Nuclear Regulatory Commission
Material Licensing Branch
Division of Fuel Cycle & Material Safety
Washington, DC 20555

Re: (a) Materials License No. 20-18386-04E
(b) Materials License No. 20-18386-03

Gentlemen:

This correspondence is to request amendments to the above referenced licenses. The purpose of this request is as follows:

- 1) Appointment - Mr. David V. Walshe as Radiation Protection Officer (resume and miscellaneous background information attached).
- 2) Changes to the attached Pyrotector, Inc. Standard Operating Procedure 015. Changes are indicated with a "C" adjacent to the affected paragraph.
- 3) Addition of Organization Chart.

Also attached please find a check in the amount of \$340.00 for the following Amendment Fees:

Reference (a) -	\$230.00
Reference (b) -	<u>\$110.00</u>
Total -	<u>\$340.00</u>

Should you have any questions or comments regarding the above, please do not hesitate to contact me (401-861-5834).

Very truly yours,

GRINNELL CORPORATION

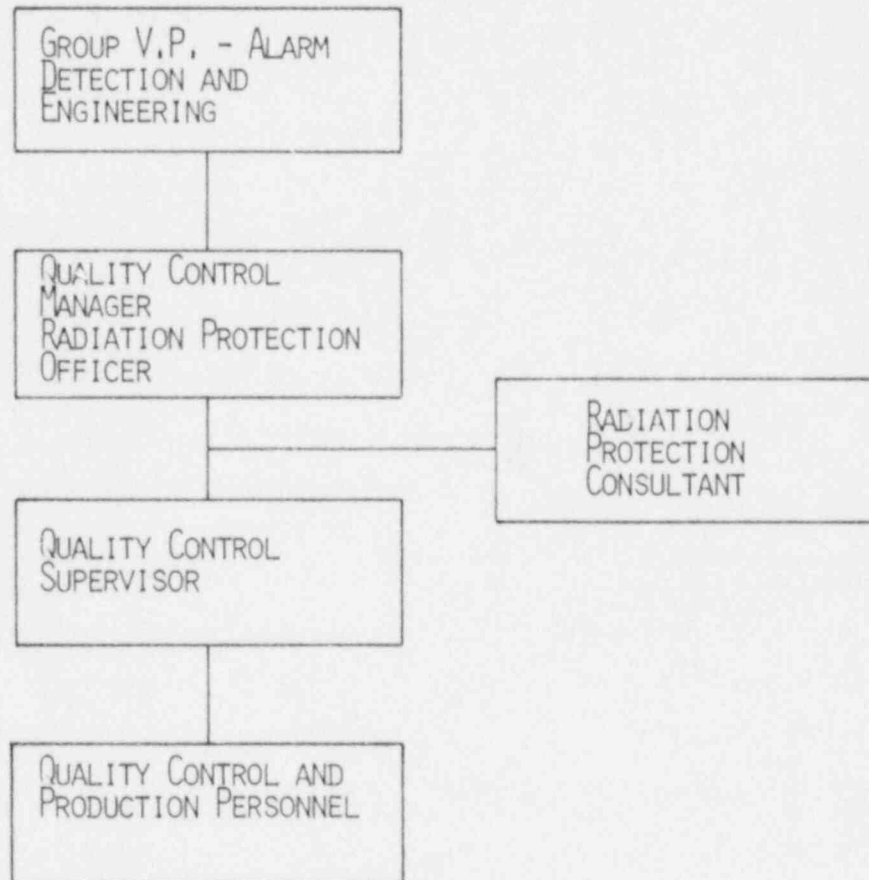
David V. Walshe
DAVID V. WALSH
Quality Assurance Manager
Plant Systems Services Group

Log	Apr - 1-HPs
Remitter	
Check No.	101-00043
Amount	\$340.00 (1/2004/4/1/87)
Fee Category	34
Type of Fee	Amnd
Date Check Rec'd.	4/10/87
Check Completed	4/10/87
By	Meunier
DVW/m	(Atts. 1/83551)

see 120 42-
see Apr 10
\$100 refunded

PYROTECTOR, INC.

RADIATION SAFETY PROGRAM ORGANIZATION



David Vaughan Walshe
RR1 Box 134 Sisson Road
Greene, Rhode Island 02827
(401) 397-9521

BACKGROUND
SUMMARY

- *Quality Management
- *Nondestructive Examination
- *Training/Classroom Instruction, Seminars for Technical Societies
- *Quality Program Auditing
- *Specification Writing and Qualification
- *Direct Supervision
- *Radiation Safety Officer
- *Personnel Administration
- *Budget Control
- *Vendor Surveys
- *Vendor Procedures Review and Approval
- *Project Review
- *Project Quotations
- *Determination of Product Examination Requirements

QUALIFICATIONS Twenty two years experience in Nondestructive Examination, Quality Control and Quality Assurance. Positions held have encompassed both working and management activities. Experience spans from Operator, Technician, Auditor to Management level. Qualified and certified Level III to perform and interpret the following nondestructive examination methods of analysis: Radiography, Liquid Penetrant, Magnetic Particle and Visual Examinations and qualified as a Quality Program Auditor. Knowledgeable in the ultrasonic examination method. Served as Field Quality Assurance Manager for Nuclear Power Plant piping erection.

EXPERIENCE

ITT GRINNELL CORPORATION, Providence, Rhode Island (1968-Present)

Manager, Nondestructive Testing Section, Research Development and Engineering Division, Corporate

Responsibilities include managing group of six at peak to perform examinations and to train, qualify, certify and audit Quality Programs and ITT Grinnell Nondestructive Examination Personnel at five plant locations and at field site locations, United States, Germany and Korea; preparation, qualification and approval of nondestructive examination and radiation safety procedures, quality and vendor instructions; review of all vendor nondestructive examination procedures and preliminary contract requirement reviews. Section responsibilities include functioning as a support activity for the Corporation in areas of consultation, product analysis, examinations of production items, auditing of Quality Programs, Plant Quality Control Management for Providence Job Shop facility and as a profit center as a Commercial Test Lab.

Participation in all ITT Grinnell ASME Nuclear N-Stamp surveys including preliminary program auditing. Actively participated in twenty one surveys. Assisted in the preparation for, and participated in the ASME N-Stamp survey for DAEWOO-ITT Engineered Products, Ltd., Okpo Shipyard, Jang Seung Po, Korea.

Interim Field Quality Control Manager (1977) at the Nine Mile Point Nuclear Power Plant construction site Oswego, New York. Responsible for the total Nuclear Quality program for the installation of the piping systems.

Field Quality Control Manager (1974) for the field installation of a CO₂ fire protection system at Rancho Seco Nuclear Power Plant,

Sacramento, California, the system being installed in accordance with ASME Class One Nuclear Code requirements.

Other positions included Nondestructive Test Technician performing Nondestructive Examinations at various Grinnell Shop and Field site locations to department supervisor.

Conducted various training programs in quality program requirements and nondestructive examination methods for ITT Grinnell and for various outside companies. Gave speeches at Engineering Society meetings on the topic of Nondestructive Examination Methods.

GENERAL DYNAMICS, Electric Boat Division, Groton, Connecticut (1962-1968)

First Class Radiographer performing radiographic examinations on structural cast and piping components for submersible craft. Certified to various military specifications to perform and evaluate examination results.

GORHAM CORPORATION, Providence, Rhode Island (1961-1963)

Production Control Expeditor responsible for maintaining production control records and control of product in the factory.

EDUCATION

University of Rhode Island Extension Division: Industrial Management and Production Control

American Society for Nondestructive Testing: Specialized courses in Nondestructive Examinations at both National and Local levels covering Radiography, Ultrasonic, Magnetic Particle, Liquid Penetrant

ITT Grinnell Corporation: Corporate Management training program for Managers

American Society for Metals: Basic Metallurgy

Various seminars covering quality control and nondestructive examination methods at National AWS, ASNT, ASQC conferences over a ten year period

Electric Boat Company: Quality Control Concepts and Techniques (120 hours), Value Engineering (40 hours), Metallurgy of Welding and Joining (Home Study), Radiographic Techniques and Interpretation, Ultrasonic Theory

PROFESSIONAL ORGANIZATIONS

American Society for Nondestructive Testing, Narragansett Bay section, two years Past Chairman, Currently Board of Directors member, "Man of the Year Award" 1977-1978, ASNT National "Fellow" 1981, Providence Engineering Society Affiliate Member, ASME Nondestructive Examination Engineering Subdivision Member, Affiliate Member of ASME, and Associate Member of American Welding Society

PERSONAL

Age 45, Married, three children

Grinnell Corporation

NO. I-SF-162

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REV. 20

DATE 4-1-86

TITLE:

STANDARD INSPECTION SPECIFICATION RADIOGRAPHIC EXAMINATION SAFETY PRACTICE FOR GAMMA-RAY INSPECTION

APPENDIX C

FORM AEC-1138-3

Supplement to United States Atomic Energy Commission
Application for Byproduct Material License -
Use of Sealed Sources in Radiography

THIS FORM SHOULD BE USED ONLY BY PERSONS WHO WISH TO PERFORM RADIOGRAPHY UNDER A "LIMITED RADIOGRAPHY LICENSE" AS DESCRIBED IN SECTION I.D. OF THE AEC INDUSTRIAL RADIOGRAPHY LICENSING GUIDE. Use separate form for each individual. Additional pages may be attached. See reverse side for additional instructions.

It is hereby requested that David Walsh be listed on License No. 38-02539-01 as a (1) Radiographer
(Name)

(2) Radiographer's Assistant. (Circle (1) or (2)). The training and experience of this individual consists of:

(3) PERIOD OF TRAINING OR EXPERIENCE (From) (To)	(4) POSITION HELD (1) (2)	(5) TYPE OF EQUIPMENT USED (Make & Model Number)	(6) TYPE AND AMOUNT OF ACTIVITY	(7) NAME OF EMPLOYER AND USE/EC OR AGREEMENT STATE LICENSE NO.
6-67 6-70 (One.5yr) (No.412)	(1) ()	Tech/Ops 433, 478, 490 Picker Cyclope	1r 100 - 100 CI Co 60 - 50 CI Co 60 - 90001	Electric Boat, Groton, Conn.
7-24-78 Present	() (2)	Tech/Ops 433, 478, 490, 499 525, 560, Picker Cyclope	Co 60 - 50 CI Co 60 - 90001	Electric Boat, Groton, Conn.
10-18-78 Present	(1) ()	Tech/Ops 440	Co 60 - 90001 1r 50 - 100 CI	Grinnell Corporation ITT Grinnell Corporation 38-02539-01
	() ()			
	() ()			
	() ()			

(8) Additional training and experience description or comment: Course of instruction in Radiological Control. Worked with open air Co 60 source for use in Gamma Probing Lead. Meets all requirements set forth in 201-B. Participated in radiography at these Nuclear Power Plants: Toledo Edison, Virginia Electric, Georgia Power, Vermont Yankee, Quad-Cities Yankee Atomic, Connecticut Yankee and Duke Power and also at Fossil Power Plants Blackstone Valley.

(9) Will Johnson determined compliance with 10 CFR 34.31 for the person named above by: Taunton Municipal Light & Power and Merrimack Electric
(Briefly describe test, on-the-job evaluation, etc. Written test copy may be attached.)

(10) Signed: 

(63621)

Grinnell Corporation

NO. I-SF-162

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REV. 20

DATE 4-1-86

TITLE:

STANDARD INSPECTION SPECIFICATION RADIOGRAPHIC EXAMINATION SAFETY PRACTICE FOR GAMMA-RAY INSPECTION

THIS IS TO CERTIFY THAT

37085 D. Walshe

HAS SUCCESSFULLY COMPLETED THE
ELECTRIC BOAT DIVISION'S PRESCRIBED
TRAINING PROGRAM AND IS QUALIFIED AS

RADIOGRAPHER

4/22/63

HAYSTACKS 250-000-1000

GENERAL DYNAMICS
Electric Boat Division
BRISTOL, CONNECTICUT

THIS IS TO CERTIFY THAT

AS SUCCESSFULLY COMPLETED
A COURSE IN RADIOLOGICAL CONTROL
TRAINING FOR SHIPYARD TRADES

G. D. Walshe

GENERAL DYNAMICS | ELECTRIC BOAT
THIS IS TO CERTIFY THAT

David Walshe 324-37085

HAS SUCCESSFULLY COMPLETED THE
ELECTRIC BOAT DIVISION'S PRESCRIBED
TRAINING PROGRAM AND IS QUALIFIED
AS

Gamma Probe Operator

324-37085

AUG 3, 1967

GENERAL DYNAMICS
Electric Boat Division

THIS IS TO CERTIFY THAT

D. Walshe 37085

HAS SUCCESSFULLY COMPLETED THE
ELECTRIC BOAT DIVISION'S PRESCRIBED
TRAINING PROGRAM AND IS QUALIFIED
AS

A Radiographer

EDUCATION DEPT. DATE May 11, 1967

STANDARD 250-000-1000

EX - 250 Rev. 11/66

GENERAL DYNAMICS
Electric Boat Division

THIS IS TO CERTIFY THAT

324-37085 D. Walshe

HAS SUCCESSFULLY COMPLETED THE
ELECTRIC BOAT DIVISION'S PRESCRIBED
TRAINING PROGRAM AND IS QUALIFIED
AS

Radiographer

DATE 9/12/67

STANDARD HAYSTACKS 0900-000-1000

EX - 250 Rev. 11/66

GENERAL DYNAMICS
Electric Boat Division

THIS IS TO CERTIFY THAT

324-37085 D. Walshe

HAS SUCCESSFULLY COMPLETED THE
ELECTRIC BOAT DIVISION'S PRESCRIBED
TRAINING PROGRAM AND IS QUALIFIED
AS

Radiographer

DATE 9/12/67

STANDARD HAYSTACKS 0900-000-1000

EX - 250 Rev. 11/66

GENERAL DYNAMICS
Electric Boat Division

THIS IS TO CERTIFY THAT

D. Walshe 37085

HAS SUCCESSFULLY COMPLETED THE
ELECTRIC BOAT DIVISION'S PRESCRIBED
TRAINING PROGRAM AND IS QUALIFIED
AS

A Radiographer

EDUCATION DEPT. DATE May 12, 1967

STANDARD 250-000-1000

EX - 250 Rev. 11/66

(63621)

Grinnell Corporation

NO. I-SF-162

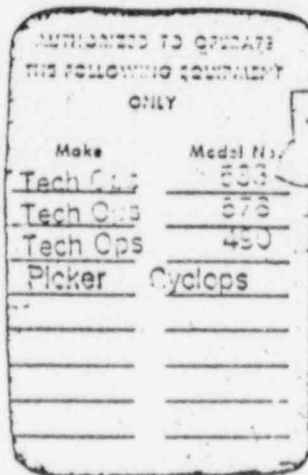
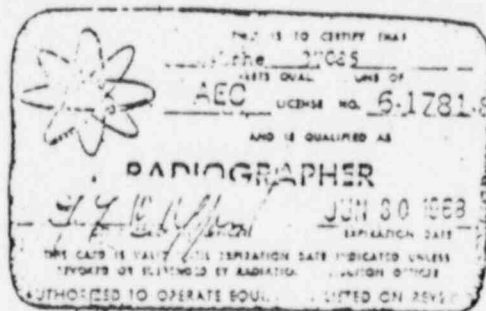
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REV. 20

DATE 4-1-86

TITLE:

STANDARD INSPECTION SPECIFICATION
RADIOGRAPHIC EXAMINATION
SAFETY PRACTICE FOR GAMMA-RAY INSPECTION



Grinnell Corporation

NO. I-SF-162

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REV. 20

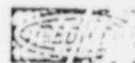
DATE 4-1-86

TITLE:

STANDARD INSPECTION SPECIFICATION RADIOGRAPHIC EXAMINATION SAFETY PRACTICE FOR GAMMA-RAY INSPECTION

Tech/Ops

Radiation Products Division
40 North Avenue
Burlington, Massachusetts 01803
Telephone (617) 272-2000



RADIATION SAFETY PROGRAM ADMINISTRATOR' SEMINAR

6 Nov 1979

AM

Introduction

Basic Radiation Protection Requirements
(10CFR20, Reg. Guide 8.10)

Instruction to Workers
(10CFR19, Reg. Guide 8.13)

Defects and Noncompliance
(10CFR21)

Lunch

PM

Specific Requirements for Industrial Radiography
(10CFR34, Reg. Guide 10.6)

7 Nov 1979

AM

Requirements for Source Material
(10CFR 40)

Export and Import
(10CFR 110)

Reciprocity between NRC and Agreement States
(10CFR 150)

Fees, Reporting Requirements and Miscellaneous Requirements
(10CFR 170, Reg. Guide 10.1)

Lunch

PM

Transportation

(63621)

Q U A L I T Y A S S U R A N C E

GENERAL OPERATING PROCEDURE

PYROTECTOR, INC.
Hingham, MA

Original Issue Date
30 Sept 1982

Revision Date
22 Aug 1984

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1 of 12

GOP No.
015

Subject

R A D I A T I O N P R O T E C T I O N P R O G R A M

1.0 Purpose

- 1.1 The purpose of this procedure is to insure that adequate safety precautionary controls are in force at Pyrotector, Inc. to prevent accidental exposure and mishandling of Ionization Chambers, Sources, and Ionization Smoke Detectors.

2.0 Scope

- 2.1 The Radiation Protection Program is designed to insure that the integrity of purchased Ionization Chambers containing a sealed source of Americium 241 with a maximum activity of one microcurie utilized in Ionization Smoke Detectors is maintained throughout the manufacturing process and that the end product is substantially the same as specified by the design and as tested in prototype.

3.0 Reference Documents

- 3.1 U.S. Nuclear Regulatory Commission (NRC) License No. 20-18386-03 and No. 20-18386-04E.
- 3.2 Commonwealth of Massachusetts Registration of Ionizing Radiation Sources No. 961.

4.0 Posting

- 4.1 Copies of the following documents will be posted at seven (7) visible locations throughout the area by the Radiation Protection Officer (RPO) where Smoke Detectors utilizing radioactive sources are processed. A permanent posting shall be maintained by the RPO at the Radiation Protection Office (QA).

Q U A L I T Y A S S U R A N C E

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4.0 Posting

- 4.1 a. Notice to Employees, U.S. NRC Form 3.
- b. Notices, Instructions, and Reports to Workers;
Inspections 10CFR Part 19.
- c. Standards for Protection Against Radiation 10CFR Part 20.
- d. Instructions Concerning Prenatal Radiation Exposue.
U.S. NRC Regulatory Guide 8.13.
- e. Radiation Dosimetry Report. R. S. Landauer, Jr. and Co.
- f. Pyrotector, Inc. NRC License.
- g. Commonwealth of Massachusetts Registration of Ionization
Radiation Sources.

4.2. Caution Signs

- a. All areas where Ionization Chambers-sealed source of
Americium 241 is used or stored in the manufacturing
process of Ionization Smoke Detectors will be marked with
a sign "Caution Radioactive Material".

5.0 General Radiation Protection-Safety

- 5.1 All exit/entrance doors at Pyrotector, Inc. are either alarmed,
under continuous surveillance, or securely locked to prevent
exit/egress on a 24-hour-per-day basis. Contract security guard
personnel are on the premises at all times during non-working
hours.

Q U A L I T Y A S S U R A N C E

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5.0 General Radiation Protection-Safety

- 5.2 Pyrotector, Inc. utilizes a personal photo-numbered badge system for identification of its employees.
- 5.3 Only authorized employees are allowed in work areas where Ionization Chamber-Sources are present or Ionization Smoke Detectors are being assembled, tested, repaired, or stored. Pyrotector, Inc.'s policy does not allow a minor in any manufacturing or work area.
 - 5.3.1 Supervisory personnel shall insure that these areas are maintained in an orderly and clean fashion.
- 5.4 No smoking, eating, or drinking will be allowed in work areas where Ionization Chamber-Sources are being handled - including the assembly, disassembly, and repair of Ionization Smoke Detectors.
- 5.5 Any missing or damaged radioactive sources shall be reported immediately through their supervisor to the RPO for investigation; or removal to the Radioactive Material Storeroom.
- 5.6 Unauthorized removal of a radioactive source from a work area or device, or tampering with a radioactive source by any person will be cause for dismissal as an employee of Pyrotector, Inc.
- 5.7 A registered nurse is on duty in a recognized company First Aid Room under the supervision of a consulting physician during normal work-day hours. Any person working with radioactive sources and who suffers a break in the skin shall immediately report through their supervisor to the First Aid Room for treatment, and the RPO shall be notified.

GENERAL OPERATING PROCEDURES

PYROTECTOR, INC.
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R A D I A T I O N P R O T E C T I O N P R O G R A M

5.0 General Radiation Protection-Safety

5.7.1 The skin area will be washed with soap and water for 2 to 3 minutes; no more than 3 times. The area will be monitored for radiation level. Any discernable net millirems per hour will be cause for a higher level of medical treatment.

5.7.2 In the event of an accident where both personal injury and known radioactive contamination is involved, the treatment of the injury has precedence.

a. If possible, remove contaminated clothing at the site of the accident.

b. Inform the First Aid Room and RPO immediately that Americium 241 is the possible contamination.



c. Place area off limits by posting until decontamination can be finalized.

5.7.3 M.M. Bolten, Jr., Health Physicist, Cambridge, MA and Radiation Protection Consultant for Pyrotector, Inc., will be available to perform personal bio-assay - whole body count when warranted by extreme emergency.

5.8 The Radiation Protection Consultant will, at frequencies of approximately 6 months - review the facility and Radiation Protection Program of Pyrotector, Inc. for regulatory compliance.

Q U A L I T Y A S S U R A N C E

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R A D I A T I O N P R O T E C T I O N P R O G R A M

6.0 Radiation Survey

- 6.1 Radiation surveys shall be conducted by the RPO or his designee using measuring instruments that have the capability of detecting less than (1) CPM radioactivity and 0.025 millirems of radiation level. An Alpha Survey instrument - capable of detecting less than 50 CPM - will be available.

The calibration frequency of active instruments will be semi-annual with certification relative to Americium 241 traceable to the National Bureau of Standards (NBS).

- 6.1.1 Each radiation survey performed shall be logged by date, location, type of survey, instruments used, net activity in dpm or microcuries and net radiation level in millirems per hour. The log must be signed by the surveyor.
- 6.1.2 A Wipe Test Survey for removable radioactive contamination will be conducted on selected areas where radioactive sources are used or stored by wiping 100 square centimeters of surface area with a 1" diameter filter paper and monitoring for radioactivity. A net activity of 100 dpm or more will be reported to the Radiation Protection Consultant for further evaluation and corrective action.
- 6.1.2.1 The RPO will, at intervals of approximately 4 months, send wipe test samples from selected areas to the Radiation Protection Consultant for analysis on a gas flow proportional counter that is calibrated with an NBS certified Americium 241 standard.

Q U A L I T Y A S S U R A N C E

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R A D I A T I O N P R O T E C T I O N P R O G R A M

6.0 Radiation Survey

- 6.1.3 A Radiation Level Survey will be conducted weekly in selected areas where radioactive material is present by monitoring the surface area for net millirems per hour.
- 6.1.4 An Alpha Radiation Survey may be conducted by monitoring the surface of work areas where radioactive sources are used. A net activity of 100 dpm or more shall be reported to the Radiation Protection Consultant for further evaluation and corrective action.

7.0 Personnel and Area Radiation Monitoring by Film Badges

- 7.1 Film badges will be Type G5. Monthly exposure will be processed by the R. S. Landauer, Jr. & Co., Glenwood, IL, Account No. 33730.
 - 7.1.1 Selected persons who handle the Ionization Chambers-Sources will be issued a film badge by the RPO to be worn on the right wrist.
 - 7.1.2 Film badges used as radiation control monitors will be placed by the RPO in selected areas of close proximity to where radioactive sources are being used or stored. The RPO shall maintain a log of the date and location of all control monitors and will be a part of the Radiation Dosimetry Report.

8.0 Inventory Accountability

8.1 Received Radioactive Material

Q U A L I T Y A S S U R A N C E

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R A D I A T I O N P R O T E C T I O N P R O G R A M

8.0 Inventory Accountability

- 8.1.1 Shipments of radioactive material containing a sealed source of Americium 241 shall only be accepted during normal work-day hours.
- 8.1.2 Upon receipt, Receiving shall fill out a Receiving Form and notify the RPO. Within 3 hours of receipt, 100 square centimeters of surface area of each package will be wiped for radioactive contamination, wiping with a 1" diameter filter paper and monitoring for activity in dpm. Each package surface will be monitored for radiation level. If the net activity exceeds 0.01 microcurie or the net radiation level exceeds 200 millirems per hour, the procedure outlined in Section 20.205 10CFR Part 20 shall be followed.
- 8.1.3 Each shipment of radioactive sources must be certified by the manufacturer that the measured removable activity from the Americium 241 source is limited to 0.005 microcuries and the normal activity is less than 1 microcurie.
- 8.1.4 A sample quantity will be randomly selected from the lot according to the following table and wipe tested for removable radioactive contamination.

<u>No. Received</u>	<u>No. Wipe Tested</u>
1 - 20	All
21 - 10,000	20

Q U A L I T Y A S S U R A N C E

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R A D I A T I O N P R O T E C T I O N P R O G R A M

8.0 Inventory Accountability

8.1.4 Table from Mil-Std-150D Sampling Procedures and Tables for Inspection by Attributes. Inspection Level S-1 AQL 0.65%. The Wipe Test will be performed by wiping the surface area of both sides of the radioactive source with a 1" diameter filter paper and monitoring for activity. A net activity greater than 0.005 microcurie from one source will be cause for rejection of the lot and returned to the manufacturer by an appropriate manner for disposal.

8.1.5 The actual number of radioactive sources will be physically counted and logged. After acceptance, the sources will be stored in a restricted access Radioactive Material Storeroom until issuance to production or engineering.

8.2 Processing Accountability



8.2.1 Only the RPO, or qualified designee, and the Stores Supervisor shall have access to the locked Radioactive Material Storeroom.

8.2.2 A log shall be maintained by the RPO showing the date and quantity of all radioactive sources received, the date, quantity, and where issued, the date and quantity of sources returned to stores as defective, the date and quantity returned to the manufacturer.

Q U A L I T Y A S S U R A N C E

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R A D I A T I O N P R O T E C T I O N P R O G R A M

8.0 Inventory Accountability

8.2.3 A daily log will be maintained by the Production Supervisor showing the date and quantity of radioactive sources received from Stores and the quantity in subassemblies.

8.3 Distribution

8.3.1 Completed Ionization Smoke Detectors will be accounted for by model and quantity on the Daily Production Inventory Report and the Month To Date Move to Stock Computer Report.

8.3.2 Shipment of completed Ionization Smoke Detectors will be accounted for by model, quantity, and destination on the Month To Date Shipping Computer Report.

8.3.3 Engineering samples of Ionization Smoke Detectors shall be accounted for by quantity and destination on Engineering Reports.

9.0 In-process Final Acceptance Ionization Smoke Detectors

9.1 Quality Control will be responsible for acceptance of Ionization Smoke Detectors containing an Americium 241 radioactive source on a lot sample audit and accept only the lots that conform to Engineering Specification on material workmanship, dimensions, labeling, and packaging.

9.1.2 Quality Assurance will function test Ionization Smoke Detectors for smoke obscuration percent, per foot, on a lot sample audit and accept only the lots that conform within the smoke sensitivity limits of the Engineering Specification.

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10.0 Radiation Waste Program

- 10.1 Defective Amersham Ionization Chambers with a sealed source of Americium 241 will be returned to the Amersham Corporation for disposal.

11.0 Training

- 11.1 Training sessions will be periodically held by the RPO, or the Radiation Protection Consultant, to applicable employees of Pyrotector, Inc.
- 11.2 The subjects covered will be - but not limited to:
- a. Concepts of Ionization Radiation, University of California (Audio Visual).
 - b. Maximum permissible doses for radiation workers and calculated maximum radiation exposure. Reference Pyrotector, Inc.
 - c. Introduction to the precautionary procedures taken by Pyrotector, Inc. - including personnel and area radiation monitoring by film badges. Types of Radiation Survey and the instruments used. General radiation safety instruction.

12.0 Records - Documents

- 12.1 The following records and documents shall be maintained on file by the RPO as a permanent log and will be available for inspection by any cognizant person at the Radiation Protection Office (QA).

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12.0 Records - Documents

12.1.1 General

- a. Copies of issued U.S. NRC Material Licenses Massachusetts Registration of Ionizing Radiation Sources, Amendments, and letters listed in Section 4.0 of this procedure.
- b. Copies of U.S. NRC documents listed in Section 4.0 of this procedure.
- c. Results of inspections held by regulatory agencies.
- d. Training sessions held by persons attending.
- e. Visits by Radiation Protection Consultant.

12.1.2 Survey - Monitoring

- a. Radioactive contamination and radiation level surveys conducted by the RPO, or his designee.
- b. Radioactive Wipe Test Analysis, any other radiation test performed for Pyrotector, Inc. by the Radiation Protection Consultant.
- c. Radiation Dosimetry Reports.

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12.0 Records - Documents

12.1.2 d. Maintenance and Calibration Records of each instrument used by Pyrotector, Inc. to test or monitor radioactive and radiation levels.

12.1.3 Inventory

- a. Copy of Receiving Form on radioactive sources received.
- b. Certification by manufacturer on limit of source contamination and normal activity..
- c. Quantity of radioactive sources received and accepted or returned to the manufacturer as defective.
- d. Quantity of radioactive sources issued from radioactive storeroom and defectives returned.
- e. Shipment of Ionization Smoke Detector, Month to Date Shipping Computer Report.