

## MATERIALS LICENSE

Amendment No. 12

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee		In accordance with the application dated March 28, 1995, 3. License Number 06-17235-02 is amended in its entirety to read as follows:
1. Northeast Utilities Service Company Radiological Assessment Branch Berlin W-143 2. P.O. Box 270 Hartford, Connecticut 06141		4. Expiration Date July 31, 2000
		5. Docket or Reference No. 030-17011
6. Byproduct, Source, and/or Special Nuclear Material	7. Chemical and/or Physical Form	8. Maximum Amount that Licensee May Possess at Any One Time Under This License
A. Any byproduct material with atomic numbers 1-83	A. Sealed sources	A. Not to exceed 2 millicurie per source and 10 millicuries total
B. Any byproduct material	B. Contamination on equipment	B. 10 millicuries
9. Authorized use		
A. Calibration of dosimeters and as reference sources.		
B. Possession only of contaminated equipment.		

## CONDITIONS

10. Licensed material may be used only at the licensee's facilities located at 3333 Berlin Turnpike, Newington, Connecticut.
11. A. Licensed material shall be used by, or under the supervision of, Alan S. Klotz or George H. Baskette.
- B. The Radiation Safety Officer for this license is Alan S. Klotz.
12. A. Sealed sources and detector cells containing licensed material shall be tested for leakage and/or contamination at intervals not to exceed six months or at such other intervals as are specified by the certificate of registration referred to in 10 CFR 32.210, not to exceed three years.
- B. Notwithstanding Paragraph A of this Condition, sealed sources designed to emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed three months.
- C. In the absence of a certificate from a transferor indicating that a leak test has been made within six months prior to the transfer, a sealed source or detector cell received from another person shall not be put into use until tested.

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SUPPLEMENTARY SHEET

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- D. Each sealed source fabricated by the licensee shall be inspected and tested for construction defects, leakage, and contamination prior to any use or transfer as a sealed source.
- E. Sealed sources and detector cells need not be leak tested if:
- (i) they contain only hydrogen-3; or
  - (ii) they contain only a radioactive gas; or
  - (iii) the half-life of the isotope is 30 days or less; or
  - (iv) they contain not more than 100 microcuries of beta and/or gamma emitting material or not more than 10 microcuries of alpha emitting material; or
  - (v) they are not designed to emit alpha particles, are in storage, and are not being used. However, when they are removed from storage for use or transfer to another person, and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source or detector cell shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.
- F. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission and the source or detector cell shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall be filed within five days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region I, ATTN: Chief, Nuclear Materials Safety Branch, 475 Allendale Road, King of Prussia, Pennsylvania 19406. The report shall specify the source or detector cell involved, the test results, and corrective action taken.
- G. The licensee is authorized to collect leak test samples for analysis by the licensee. Alternatively, tests for leakage and/or contamination may be performed by persons specifically licensed by the Commission or an Agreement State to perform such services.
13. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.
14. The licensee shall not acquire licensed material in a sealed source or device unless the source or device has been registered with the U.S. Nuclear Regulatory Commission pursuant to 10 CFR 32.210 or equivalent regulations of an Agreement State.
15. The licensee shall conduct a physical inventory every six months to account for all sealed sources and devices containing licensed material received and possessed under the license.

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16. The licensee is authorized to hold radioactive material with a physical half-life of less than or equal to 120 days for decay-in-storage before disposal in ordinary trash, provided:
- A. Waste to be disposed of in this manner shall be held for decay a minimum of ten half-lives.
  - B. Before disposal as ordinary trash, the waste shall be surveyed at the container surface with the appropriate survey instrument set on its most sensitive scale and with no interposed shielding to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated.
  - C. A record of each such disposal permitted under this License Condition shall be retained for three years. The record must include the date of disposal, the date on which the byproduct material was placed in storage, the radionuclides disposed, the survey instrument used, the background dose rate, the dose rate measured at the surface of each waste container, and the name of the individual who performed the disposal.
17. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
18. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.
- A. Application dated March 28, 1995

For the U.S. Nuclear Regulatory Commission

Original Signed By:  
Walter J. Pasciak

By

Nuclear Materials Safety Branch  
Region I  
King of Prussia, Pennsylvania 19406

Date

JUL 28 1995

JUL 28 1995

License No. 06-17235-02  
Docket No. 030-17011  
Control No. 121564

John Opeka  
Executive Vice President  
Radiological Assessment Branch  
Northeast Utilities Service Company  
Berlin W-143  
P. O. Box 270  
Hartford, Connecticut 06141-0270

Dear Mr. Opeka:

Please review the enclosed document carefully and be sure that you understand all conditions. If there are any errors or questions, please notify the U.S. Nuclear Regulatory Commission, Region I office, the Licensing Assistance Section, (610) 337-5093 or 5239, so that we can provide appropriate corrections and answers.

Please be advised that your license expires at the end of the day, in the month, and year stated in the license. Until your license is terminated, you must conduct your program involving byproduct materials in accordance with the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, note that you must:

1. Operate in accordance with NRC regulations 10 CFR Part 19, "Notices, Instructions and Reports to Workers; Inspections," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.
2. Notify NRC, in writing, within 30 days:
  - a. when an authorized user or Radiation Safety Officer, permanently discontinues performance of duties under the license or has a name change; or
  - b. when the mailing address on the license changes (no fee is required if the location of byproduct material remains the same).
3. In accordance with 10 CFR 30.36(b) and/or license condition, notify NRC, promptly, in writing, and request termination of the license when you decide to terminate all activities involving materials authorized under the license.



4. Request and obtain a license amendment before you:
  - a. permit anyone to work as an authorized user under the license;
  - b. change Radiation Safety Officer;
  - c. order byproduct material in excess of the amount, or radionuclide, or form different than authorized on the license;
  - d. add or change the areas of use, or address or addresses of use identified in the license application or on the license; or
  - e. change ownership of your organization.
5. Submit a complete renewal application with proper fee or termination request at least 30 days before the expiration date of your license. You will receive a reminder notice approximately 90 days before the expiration date. Possession of byproduct material after your license expires is a violation of NRC regulations. A license will not normally be renewed, except on a case-by-case basis, in instances where licensed material has never been possessed or used.

In addition, please note that NRC Form 313 requires the applicant, by his/her signature, to verify that the applicant understands that all statements contained in the application are true and correct to the best of the applicant's knowledge. The signatory for the application should be the licensee or a certifying official of the licensee rather than the Radiation Safety Officer or a consultant.

You will be periodically inspected by the NRC. Failure to conduct your program in accordance with NRC regulations, license conditions, and representations made in your license application and supplemental correspondence with NRC will result in enforcement action against you. This could include issuance of a notice of violation, or imposition of a civil penalty, or an order suspending, modifying or revoking your license as specified in the General Policy and Procedures for NRC Enforcement Actions, 10 CFR Part 2, Appendix C.

Since serious consequences to employees and the public can result from failure to comply with NRC requirements, prompt and vigorous enforcement action will be taken when dealing with licensees who do not achieve the necessary meticulous attention to detail and the high standard of compliance which NRC expects of its licensees.

John Opeka  
Northeast Utilities Service Co.

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Thank you for your cooperation.

Sincerely,

**Original Signed By:**

Walter J. Pasciak, Chief  
Industrial Applications Section  
Division of Radiation Safety  
and Safeguards

License No. 06-17235-02  
Docket No. 030-17011  
Control No. 121564

**Enclosures:**

1. Amendment No. 12
2. 10 CFR Parts 2, 19, 20, 30, and 170
3. NRC Forms 3 and 313

DOCUMENT NAME: R:\WPS\MLTR\L0617235.02

To receive a copy of this document, indicate in the box: "C" = Copy w/o attach/encl "E" = Copy w/ attach/encl "N" = No copy

OFFICE	DRSS/RI	N					
NAME	KDolce/amw	WPasciak					
DATE	07/20/95	07/21/95	07/ /95		07/ /95		

APR 12 1995

Mr. John Opeka  
Executive Vice President  
Radiological Assessment Branch  
Berlin W-143  
Northeast Utilities Service Company  
P.O. Box 270  
Hartford, CT 06141-0270

SUBJECT: LICENSE RENEWAL APPLICATION

Dear Mr. Opeka:

This is to acknowledge receipt of your application for renewal of materials(s) license identified below. Your application is deemed timely filed, and accordingly, the license will not expire until final action has been taken by this office.

Any correspondence regarding the renewal application should reference the control number specified below.

Sincerely,

ORIGINAL SIGNED BY:  
SHERYL VILLAR

Sheryl Villar, Chief  
Licensing Assistance Section  
Nuclear Materials Safety Branch  
Division of Radiation Safety  
and Safeguards

License No. 06-17235-02  
Docket No. 030-17011  
Control No. 121564

DOCUMENT NAME: S:\PENDING\NORTHEA.DTL

OFFICE	DRSS/RI	DRSS/RI	DRSS/RI	DRSS/PI
NAME	Perkins/gxc <i>mlp</i>	Villar		
DATE	04/11/95	04/12/95	04/ /95	04/ /95

OFFICIAL RECORD COPY

ML 10

(10-94)

10 CFR 30, 32, 33  
34, 35, 36, 39 and 40

## APPLICATION FOR MATERIAL LICENSE

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 9 HOURS. SUBMITTAL OF THE APPLICATION IS NECESSARY TO DETERMINE THAT THE APPLICANT IS QUALIFIED AND THAT ADEQUATE PROCEDURES EXIST TO PROTECT THE PUBLIC HEALTH AND SAFETY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-8 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0120), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW. 030-17011

## APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY  
OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS  
U.S. NUCLEAR REGULATORY COMMISSION  
WASHINGTON, DC 20555-0001

## ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

## IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND,  
MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, PENNSYLVANIA,  
RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

LICENSING ASSISTANT SECTION  
NUCLEAR MATERIALS SAFETY BRANCH  
U.S. NUCLEAR REGULATORY COMMISSION, REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PA 19406-1415

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO  
RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA,  
SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING SECTION  
U.S. NUCLEAR REGULATORY COMMISSION, REGION II  
101 MARIETTA STREET, NW, SUITE 2900  
ATLANTA, GA 30323-0199

## IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN,  
SEND APPLICATIONS TO:

MATERIALS LICENSING SECTION  
U.S. NUCLEAR REGULATORY COMMISSION, REGION III  
801 WARRENVILLE RD  
LISLE, IL 60532-4351

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS,  
LOUISIANA, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA,  
OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH,  
WASHINGTON, OR WYOMING, SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING SECTION  
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV  
811 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TX 78011-8064

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTIONS.

## 1. THIS IS AN APPLICATION FOR (Check appropriate item)

☐  
☐  
☒

A. NEW LICENSE

B. AMENDMENT TO LICENSE NUMBER

C. RENEWAL OF LICENSE NUMBER 06-17235-02

## 2. NAME AND MAILING ADDRESS OF APPLICANT (Include Zip code)

Northeast Utilities Service Company  
Radiological Assessment Branch, Berlin W-143  
P.O. Box 270  
Hartford, CT 06141

## 3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

3333 Berlin Turnpike  
Newington, CT 06111

## 4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

John Opeka

TELEPHONE NUMBER

(203) 666-5323

SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

## 5. RADIOACTIVE MATERIAL

a. Element and mass number, b. chemical and/or physical form, and c. maximum amount  
which will be possessed at any one time Attachment A

## 6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED

Attachment B

## 7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR

TRAINING EXPERIENCE Attachment C

## 8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS

Attachment D

## 9. FACILITIES AND EQUIPMENT

Attachment E

## 10. RADIATION SAFETY PROGRAM

Attachment F

## 11. WASTE MANAGEMENT

Attachment G

## 12. LICENSEE FEES (See 10 CFR 170 and Section 170.31)

FEE CATEGORY

170.31.3 p

AMOUNT

ENCLOSED \$ 680

## 13. CERTIFICATION (Must be completed by applicant). THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39 AND 40, AND THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

## CERTIFYING OFFICER - TYPED/PRINTED NAME AND TITLE

John Opeka/Executive Vice President

## SIGNATURE

## DATE

3/28/95

## FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
Ren	Apr 5	3P	\$680	00061550	
APPROVED BY				DATE	
				4/13/95	





Northeast  
Utilities System

elden Street, Berlin, CT 06037

Northeast Utilities Service Company  
P.O. Box 270  
Hartford, CT 06141-0270  
(203) 665-5000

March 28, 1995

Docket No. 030-17011  
B15167

Re: 10CFR30.32  
10CFR30.38  
10CFR170.31.3.P

U.S. Nuclear Regulatory Commission  
Region I  
Nuclear Material Section B  
475 Allendale Road  
King of Prussia, PA 19406

X

Renewal of Materials License 06-17235-02

Pursuant to 10CFR30.38 and 30.32, Northeast Utilities Service Company (NUSCO) hereby applies for renewal of the subject materials license.

We have reviewed the current license and supporting documentation and have chosen to submit the renewal application in its entirety following the NRC Staff instructions for license renewal contained in the letter of January 3, 1995.<sup>(1)</sup>

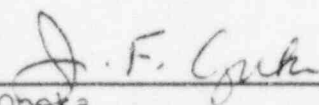
NUSCO intends to continue to operate under its license, as renewed, and will continue to operate in accordance with the license and applicable NRC regulations.

Enclosed, pursuant to 10CFR170.31.3.P, is the required amendment fee of \$680.

Should you require further information or have questions, please contact Mr. M.D. Ehredt at (203) 665-3266.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

  
\_\_\_\_\_  
J. F. Opeka  
Executive Vice President

cc: See Page 2

(1) Medical, Academic and Commercial Use Safety Branch letter to NUSCO Radiological Assessment Branch dated January 3, 1995.

Nuclear Material Section B  
B15167/Page 2  
March 28, 1995

cc: U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, DC 20555

## ATTACHMENT A

### 5. Radioactive material.

<u>Element and Mass Number</u>	<u>Chemical and/or Physical Form</u>	<u>Maximum Amount Possessed at Any One Time</u>
1. strontium-90	solid sealed source	0.5 mCi
2. promethium-147	BDS electroplated mylar encapsulated source	1.2 mCi
3. thallium-204	BDS electroplated mylar encapsulated source	0.90 mCi
4. strontium-90	BDS electroplated mylar encapsulated source	0.33 mCi
5. technetium-99	BDS electroplated mylar encapsulated source	1.4 mCi
6. depleted uranium calibrators	four slabs of depleted uranium metal mounted within two hinged boxes	6 kg
7. technetium-99	solid sealed check source	0.005 $\mu$ Ci
8. strontium-90	solid sealed check source	0.004 $\mu$ Ci
9. cesium-137	solid sealed check source	8 $\mu$ Ci
10. carbon-14	solid sealed check source	0.148 $\mu$ Ci
11. mixed fission and/or corrosion products	loose powder or particles adhering to dosimeters as surface contamination	1 $\mu$ Ci

## ATTACHMENT B

6. Purpose(s) for which licensed material will be used.

Attachment A, item 1, will be used to irradiate Harshaw whole-body dosimeter cards as a quality control check. The source is housed in a protective housing and is remotely operated by a technician.

Attachment A, items 2-5, will be used for the beta calibration of a Harshaw whole-body TLD system.

Attachment A, item 6, will be used to irradiate Harshaw whole-body dosimeters as part of a TLD performance testing program, and to irradiate extremity dosimeter discs as a quality control check.

Attachment A, items 7-10, will be used as radiation safety instrument check sources.

Attachment A, item 11, will be for possession only. There is no anticipated use. The nuclides are anticipated to be principally short-lived and the material will be held for decay. If disposal is necessary, it will be performed by Millstone Point Nuclear Power Station Waste Services Department personnel under transfer to their facility and NRC license.



## ATTACHMENT C

7. Individual(s) responsible for radiation safety program and their training experience.

Dr. Alan S. Klotz, CHP (comprehensive)  
Radiation Safety Officer for the Dosimetry Laboratory  
Senior Scientist, Radiological Assessment Branch

George H. Baskette  
Dosimetry Laboratory Supervisor, Radiological Assessment Branch

## ATTACHMENT C

### RESUME

**NAME:** Dr. Alan S. Klotz, CHP (comprehensive)

**EMPLOYER:** Northeast Utilities Service Company

**TITLE:** Senior Scientist (Radiological Assessment Branch)

**BIRTH DATE:** September 24, 1942

**EDUCATION:**

1960 Diploma, Stuyvesant High School, New York, NY

1964 BS in Physics, Rensselaer Polytechnic Institute, Troy, NY

1966 MS in Physics, Carnegie Institute of Technology, Pittsburgh, PA

1974 Ph.D in Physics, Carnegie-Mellon University, Pittsburgh, PA

**WORK EXPERIENCE:** (Chronological past to present)

<u>FROM</u>	<u>JOB TITLE</u>	<u>COMPANY</u>	<u>RESPONSIBILITIES</u>
1974-1975	Health Physicist	Morrison- Knudsen Company	(During the conversion of the Shippingport PWR to an LWBR). Participated in many phases of inplant modifications including radiation and contamination surveys, waste disposal, air monitoring and supervision of work in containment. Office duties included supervision of the Radiation Worker Training Program, performing man-rem estimates, calibrating the cobalt-60 lung burden measuring apparatus and performing shielding calculations.

## ATTACHMENT C

Dr. Alan S. Klotz

- 2 -

1976-1977	Health Physicist & Radiation Safety Officer	Yale Medical School	Responsibilities included the supervision of the radioiodine monitoring and control program, dosimetry computations for iodine-125, laboratory hazards inspections and presentation of radiation safety seminars.
1978-1979	Developmental Scientist, Dosimetrist and TLD Consultant	Teledyne Isotopes	Responsibilities included ensuring that Teledyne's TLD products comply with ANSI and NRC standards for both personnel and environmental dosimetry. Wrote the Radiation Safety Manual and implemented the radiation protection program for a large pharmaceutical firm in New York.
1979-1992	Scientist	NUSCO	Responsibilities include assisting with the development and maintenance of the NUSCO Dosimetry Laboratory, performing personnel dosimetry research and development projects, providing technical support to the Emergency Preparedness and Nuclear Training Departments, maintaining the TLD Performance Test Program, writing and revising Standardized Health Physics Practices, and providing Emergency Preparedness Program Reviews per 10CFR50.54(t).
1992-Present	Senior Scientist	NUSCO	Radiation Safety Officer for the NUSCO Dosimetry Laboratory and advisor in radiation safety to the CL&P Test Department.

### PROFESSIONAL AFFILIATIONS:

Health Physics Society

Certified by the American Board of Health Physics in 1986. Recertified in 1990 and 1994.

### OTHER JOB RELATED INFORMATION: (licenses, publications, etc.)

Publications and papers presented will be furnished upon request.

# ATTACHMENT C

## RESUME

NAME: George H. Baskette

EMPLOYER: Northeast Utilities Service Company

TITLE: Supervisor, Dosimetry Laboratory

BIRTH DATE: August 7, 1934

### EDUCATION:

1950-1953 Aliquippa High School, Aliquippa, PA  
1955-1974 Submarine & Nuclear Med. School  
1959-1962 William & Mary, Norfolk, VA

### MILITARY EXPERIENCE:

U. S. Navy Schools:

1971: Physician's Assistant Screener, 26 weeks  
1967: Submarine & Nuclear Medicine, 30 weeks  
1966: Advanced Hospital Corps School, 20 weeks  
1957: Physical Therapy School, 26 weeks

### WORK EXPERIENCE: (Chronological past to present)

<u>FROM</u>	<u>JOB TITLE</u>	<u>COMPANY</u>	<u>RESPONSIBILITIES</u>
1967-1971	Radiation Health Officer	U.S.S. George Washington Carver SSBN 656	Responsible for radiation protection program, personnel and environmental, dealing with weapons and reactors.



# ATTACHMENT C

George H. Baskette

- 2 -

1972-1974	Radiation Health Officer	U.S. Navy Submarine Medical	Radiation health protection for sub base and medical center supervising records, radiation safety and emergency procedures.
1975	HP Technician	Pilgrim Nuclear Station	In charge of TLD reading during refueling outage.
1976	HP Technician	Connecticut Yankee Station	In charge of personnel dosimetry records audit, updating contractor and station personnel radiation records for microfilming, and preparation of records management system for personnel dosimetry records.
1977-1978	HP Technician	Millstone Point Station	In charge of TLD reading and dosimetry records, respirator fitting and body counting of contractor and station personnel on night shift during outage 1977-1978.
		NUMANCO, Inc.	Prepared a computerized record system to maintain dosimetry information for NUMANCO personnel while at job sites and provide back-up documentation and exposure, physicals, provide a program to document exposure and integrate a computerized records system to be compatible with various automatic TLD readers. Write a procedure for respirator testing and training for plant and contractor personnel using the Frontier Booth System.
		Point Beach Station	Provide supervision for plugging of steam generators plus training of contractor personnel and dosimetry records for all personnel on site for normal refueling outage.
		Vermont Yankee Station	Provide audit of plant personnel records and update dosimetry records after spring outage. Updating Yankee Trap System and checking termination letters of contractor personnel.
1979	HP Technician	Calvert Cliffs	Provide supervision and coverage of dosimetry system with upgrading of TLD reading and flow of dosimetry

## ATTACHMENT C

George H. Baskette

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records during extended outage and inspection of hangers.

1980	Engineering Technician	NUSCO	Provide dosimetry for Connecticut Yankee and Millstone Nuclear Power Stations.
1981	Senior Engineering Technician	NUSCO	Provide dosimetry for Millstone and Connecticut Yankee and assist other lab members in preparing dosimetry.
1983-present	Supervisor, Dosimetry Laboratory	NUSCO	Provide overall supervision to the laboratory for issuance and processing of dosimeters. Coordinate with nuclear station all matters pertaining to the day-to-day supply of dosimetry services. Support the Radiological Protection Section in special dosimetry studies.

### PROFESSIONAL AFFILIATIONS:

Health Physics Society

121564

### ATTACHMENT C

Name and Address of Applicant	Street Address
Alan S. Klotz Northeast Utilities Service Company Radiological Assessment Branch P.O. Box 270 Hartford, CT 06141	Northeast Utilities Service Company 3333 Berlin Turnpike Newington, CT 06111

#### Training and Experience of Each Individual Listed in Item 7

Type of Training	Where Trained	Duration of Training	On the Job	Formal Course
a. Principles and practices of radiation protection	Rensselaer Polytechnic Inst.	2 years	NO	YES
	Brookhaven National Lab.	6 months	YES	NO
	Carnegie-Mellon Univ.	2 years	YES	NO
	Shippingport Atomic Power Sta.	1 year	YES	YES
	Yale University	18 months	YES	NO
	Teledyne Isotopes	2 years	YES	NO
b. Radioactivity measurement, standardization & monitoring techniques and instruments	Same	Same	Same	Same
c. Mathematics & calculations basic to the use and measurement of radioactivity	Same	Same	Same	Same
d. Biological effects of radiation	Same	Same	Same	Same

Isotope	Maximum Amount	Where Experience Gained	Duration of Experience	Type of Use
Ra-226	0.1 Ci	Brookhaven National Laboratory	6 months	Irradiation Source
Na-22	2 mCi	Carnegie-Mellon University	2 years	Research
Co-60	400 Ci	Millstone Nuclear Power Station	8 years	Irradiation Source
I-125	10 mCi	Yale University	18 months	Research
Sr-90	0.5 mCi	Northeast Utilities	4 years	Irradiation Source



ATTACHMENT C

Name and Address of Applicant	Street Address
George H. Baskette Northeast Utilities Service Company Radiological Assessment Branch P.O. Box 270 Hartford, CT 06141	Northeast Utilities Service Company 3333 Berlin Turnpike Newington, CT 06111

Training and Experience of Each Individual Listed in Item 7

Type of Training	Where Trained	Duration of Training	On the Job	Formal Course
a. Principles and practices of radiation protection	U.S. Navy and Submarine and Nuclear Medicine	2 years	YES	YES
	NUMANCO	2 years	YES	YES
	Northeast Utilities Service Company	1 year	YES	YES
b. Radioactivity measurement standardization & monitoring techniques and instruments	Same	Same	---	---
c. Mathematics & calculations basic to the use and measurement of radioactivity	Same	Same	---	---
d. Biological effects of radiation	Same	Same	---	---

Isotope	Maximum Amount	Where Experience Gained	Duration of Experience	Type of Use
Nuclear plant chemistries	Reactor plant	U. S. Navy	5 years	Reactor plant
Co-60	Non-licensed	U. S. Navy	5 years	Calibration
Sr-90	0.5 mCi	NUSCO	5 years	Irradiation source

## ATTACHMENT D

8. Training for individuals working in or frequenting restricted areas.

Training for individuals working in or frequenting restricted areas is performed by the Radiation Safety Officer or the Dosimetry Laboratory Supervisor, as appropriate. The Radiation Safety Officer conducts initial training and annual retraining of all individuals whose regular work location is the Dosimetry Laboratory. This includes the Dosimetry Laboratory Supervisor and all technicians. Training consists of lectures and practical demonstrations by the trainees of radiological surveys, frisking of dosimeters, personnel and dosimeter decontamination, documentation of surveys and decontamination incidents, leak testing of sealed sources, instrument source checking, inventorying and handling radioactive material, and notification of the Radiation Safety Officer.

Please refer to Attachment F for procedural descriptions of the areas of training.

## ATTACHMENT E

### 9. Facilities and equipment.

Facilities and equipment consist of a Dosimetry Laboratory located within an office building located at 3333 Berlin Turnpike, Newington, Connecticut. The laboratory is always maintained locked with keycard access via one door as the sole access. Only laboratory staff members have authorized keycard access to the facility. Within the laboratory, the 0.5 mCi strontium-90 irradiation source is maintained in a secured housing mounted within a locked TLD reader. The remaining radioactive materials are stored and generally used in an irradiation room. The irradiation room is located within the laboratory and is maintained locked with access controlled by the Radiation Safety Officer.

An Eberline RM-14 countrate meter with an HP-210 probe, or equivalent, and an Eberline ASP-1 with an HP-270 probe, or equivalent, are utilized for radiological surveys. These instruments are calibrated every six months by Millstone Point Nuclear Power Station Health Physics Department personnel in accordance with station procedures.

## ATTACHMENT F

10. Radiation safety program.

Radiological Assessment Branch procedures RAB G-1 through RAB G-6 constitute the radiation safety program description. Copies of these procedures are attached.

## **RADIOLOGICAL WORK IN THE LABORATORY**

---

### **1. OBJECTIVES**

- 1.1 To set forth the requirements for radiological protection while performing work in the Dosimetry Laboratory.
- 1.2 To ensure that the Radiation Safety Officer provides adequate oversight of nonroutine work or activities in the Dosimetry Laboratory which may require radiological protection measures not set forth in an RAB procedure.

### **2. REQUISITES**

- 2.1 Laboratory staff members performing radiological work shall have been trained in accordance with Procedure F-3.
- 2.2 Documents pertaining to the radiation protection program for the laboratory shall be retained indefinitely in either the laboratory or in Nuclear Document Services.

### **3. INSTRUCTIONS**

#### **3.1 Dosimetry Laboratory Staff**

- 3.1.1 WEAR dosimetry as directed by the Radiation Safety Officer and RETURN dosimetry to the proper storage area or for processing after completion of the radiological work.
- 3.1.2 MAINTAIN required postings and labelings.
- 3.1.3 NOTIFY the Radiation Safety Officer prior to performing work with radioactive material that is not covered in an approved laboratory procedure.
- 3.1.4 REFRAIN from eating, drinking, or chewing when working with radioactive material.
- 3.1.5 STORE all radioactive material in the irradiation room, except for the strontium-90 irradiator.
- 3.1.6 STORE the strontium-90 irradiator within the Harshaw reader designated for irradiations.
- 3.1.7 LOCK the irradiation room when the laboratory is unoccupied.
- 3.1.8 STORE solid radioactive waste in the plastic waste container in the irradiation room.



3.1.9 REPORT any damage to the surface of the uranium slabs to the Radiation Safety Officer or the Dosimetry Laboratory Supervisor.

### 3.2 Radiation Safety Officer

3.2.1 DETERMINE when dosimetry is required and how it is to be worn.

#### NOTE

Records and reports include the following:

1. NRC Byproduct Material License, including all amendments.
2. NRC Form 5 for each occupationally exposed individual.
3. Semiannual leak test results.
4. Radiological survey results.
5. Radioactive material receipt and shipment records.
6. Semiannual radioactive material inventory record.

3.2.2 Periodically REVIEW radiological posting and labeling for adequacy.

- a. ENSURE that an NRC Form 3 is posted in the laboratory.

3.2.3 REVIEW and MAINTAIN personnel exposure records in accordance with 10CFR20.2106.

3.2.4 REVIEW and MAINTAIN all radiation protection program records in accordance with 10CFR20, Subpart L.

3.2.5 RESPOND in a timely and adequate manner to any nonroutine work or condition affecting radiological protection.

3.2.6 POST the following locations with a sign bearing the radiation caution symbol and the words "CAUTION, RADIOACTIVE MATERIAL":

- a. the entrance to the irradiation room;
- b. the radioactive material waste container;
- c. the front door of the Harshaw reader containing the strontium-90 irradiator.

3.2.7 Promptly DECONTAMINATE any area found to be contaminated.

4. ATTACHMENTS

None

5. SUMMARY OF CHANGES

<u>Step</u>	<u>Change</u>	<u>Reason</u>
Entire Procedure		Format Change

6. BASIS

6.1 (Requisite 2.1) The basis for radiological safety training is 10CFR19.12.

6.2 (Requisite 2.2) The basis for document retention is 10CFR20, Subpart L.

# CALIBRATION OF RADIATION DETECTION INSTRUMENTS

---

## 1. OBJECTIVES

To set forth the requirements for the calibration of radiation detection instruments used within the Dosimetry Laboratory.

## 2. REQUIREMENTS

- 2.1 The radiation detection instrument used for sealed source leak testing shall be calibrated semiannually.

## 3. INSTRUCTIONS

### 3.1 Dosimetry Laboratory Supervisor/Designee

- 3.1.1 Prior to the calibration of each radiation detection instrument, ARRANGE to obtain a replacement instrument if one is needed to support laboratory operations.

- 3.1.2 RETURN each radiation detection instrument to the Millstone Point Nuclear Power Station semiannually for calibration.

### 3.2 Radiation Safety Officer

- 3.2.1 ENSURE that radiation detection instruments are maintained in a properly calibrated manner.

## 4. ATTACHMENTS

None

## 5. SUMMARY OF CHANGES

<u>Step</u>	<u>Change</u>	<u>Reason</u>
Entire Procedure		Format Change

6. BASIS

- 6.1 (Requisite 2.1) Condition 13.A of the NRC Byproduct Material License for the Dosimetry Laboratory requires that sealed sources be leak tested at intervals not to exceed 6 months. Condition 13.D of the NRC Byproduct Material License for the Dosimetry Laboratory states that the leak test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. These two conditions form the basis for requiring the radiation detection instrument used for sealed source leak testing to be calibrated semiannually.

## RADIOLOGICAL SURVEYS

---

### 1. OBJECTIVES

To set forth the requirements for performing radiation and contamination surveys.

### 2. REQUISITES

- 2.1 Radiation and contamination surveys shall be documented (date, location or object surveyed, survey instrument, name of person performing survey, and results of survey).
- 2.2 Prior to performing a contamination survey, the response of the contamination survey meter shall be checked by setting the countrate meter on the X10 scale and placing the 0.005  $\mu\text{Ci}$  Tc-99 source in contact with the center of the probe. The meter should read approximately 1,000 cpm.
- 2.3 A contamination survey meter reading of at least 100 cpm above background shall be indicative of the presence of surface contamination.

### 3. INSTRUCTIONS

#### 3.1 Radiation and Contamination Surveys

(DL Supervisor/  
Designee)

- 3.1.1 PERFORM a smear contamination survey of the entryway and frisking area of the processing room monthly and DOCUMENT the survey using Attachment A.
- 3.1.2 PERFORM a smear contamination survey of the tabletop in the irradiation room monthly and DOCUMENT the survey using Attachment A.
- 3.1.3 PERFORM a contamination survey of incoming shipments of issued dosimeters by frisking the dosimeters.
  - a. PLACE any contaminated dosimeter found in the plastic box on the frisking table and DOCUMENT the presence of contamination on the dosimeter using Attachment B.

(RSO/Designee)

- 3.1.4 PERFORM a smear contamination survey and a radiation survey of incoming shipments of radioactive material.
  - a. DOCUMENT each survey using Attachment B.

3.1.5 PERFORM a smear contamination survey and a radiation survey of the strontium-90 irradiator whenever either the sealed source is changed or the protective housing is modified.

a. DOCUMENT each survey using Attachment B.

(DL Staff)

3.1.6 Promptly NOTIFY the Radiation Safety Officer and the Dosimetry Laboratory Supervisor whenever surface contamination is found within the laboratory.

#### 4. ATTACHMENTS

4.1 Attachment A - Frisking Area and Irradiation Room Survey Form

4.2 Attachment B - General Survey Form

#### 5. SUMMARY OF CHANGES

<u>Step</u>	<u>Change</u>	<u>Reason</u>
Entire Procedure		Format Change and Content Change

#### 6. BASIS

6.1 (REQUISITE 2.1) The requirement to document radiological surveys is contained in 10CFR20.2103.

6.2 (REQUISITE 2.2) The contamination survey meter should be checked with a source to ensure that it is functioning properly. The 0.005  $\mu\text{Ci}$  Tc-99 source is used because it yields a stable response of approximately 1,000 cpm when placed directly beneath the center of the probe.

6.3 (REQUISITE 2.3) INPO 91-014, Guidelines for Radiological Protection at Nuclear Power Stations, Chapter VI, Section C.2.b, states that a detectable quantity for a direct frisk is 100 cpm above background, assuming the probe is held approximately one-half inch from the surface.



ATTACHMENT A

## FRISKING AREA AND IRRADIATION ROOM SURVEY FORM

## 1. AREA SURVEYED

Frisking Area  
Processing RoomRESULTS

background = \_\_\_\_\_ cpm

check source = Tc-99 (.005  $\mu$ Ci)

check reading = \_\_\_\_\_ cpm

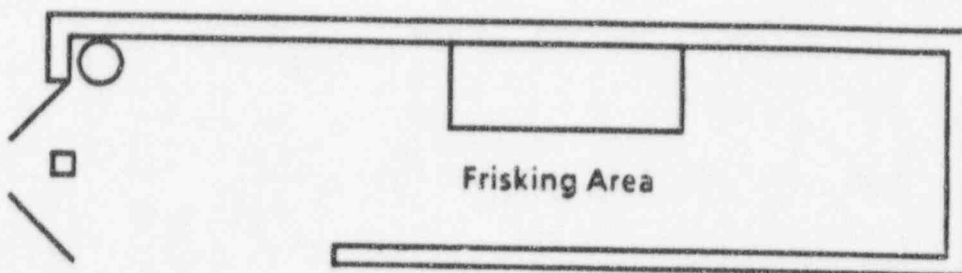
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## 2. AREA SURVEYED

Irradiation Room

RESULTS

background = \_\_\_\_\_ cpm

check source = Tc-99 (.005  $\mu$ Ci)

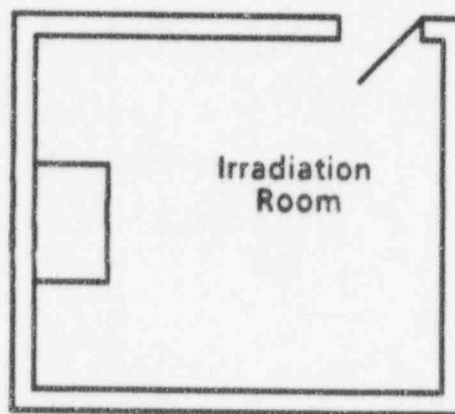
check reading = \_\_\_\_\_ cpm

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Survey performed by (Signature) \_\_\_\_\_

\_\_\_\_\_  
Date\_\_\_\_\_  
Probe Type\_\_\_\_\_  
Meter Type\_\_\_\_\_  
Meter Serial #\_\_\_\_\_  
Cal. Due Date\_\_\_\_\_  
Radiation Safety Officer (Signature)\_\_\_\_\_  
Date

ATTACHMENT B

## GENERAL SURVEY FORM

Contamination Survey

Radiation Survey

Survey Type \_\_\_\_\_Probe Type \_\_\_\_\_Meter Type \_\_\_\_\_Meter Serial # \_\_\_\_\_Cal. Due Date \_\_\_\_\_Background \_\_\_\_\_ cpm \_\_\_\_\_ mR/hrCheck Source Reading \_\_\_\_\_ cpmSurvey performed by \_\_\_\_\_ Date \_\_\_\_\_Sketch or description of surveyed item(s) or area(s)Results: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
Radiation Safety Officer (Signature)\_\_\_\_\_  
Date

# **RADIOACTIVE MATERIAL INVENTORY AND SEALED SOURCE LEAK TEST**

---

## **1. OBJECTIVES**

- 1.1 To set forth the requirement to inventory all radioactive material under the control of the Dosimetry Laboratory.
- 1.2 To provide instructions for the performance of a leak test of the licensed sealed radioactive sources.

## **2. REQUISITES**

- 2.1 The leak test of the licensed sealed radioactive sources shall be performed at intervals not to exceed six months.
- 2.2 The leak test shall apply to all licensed sealed radioactive sources greater than 100  $\mu\text{Ci}$  within and under the control of the NUSCO Dosimetry Laboratory.
- 2.3 Each sealed source leak test shall be acceptable if the removable activity is less than 0.005  $\mu\text{Ci}$ .
- 2.4 Any licensed sealed radioactive source of greater than 100  $\mu\text{Ci}$  not being tested under Condition 13.A of the NRC Byproduct Material License shall be labeled by the Radiation Safety Officer to indicate that a leak test is required prior to use.

## **3. INSTRUCTIONS**

### **3.1 Radioactive Material Inventory**

(DL Supervisor/  
Designee)

- 3.1.1 INVENTORY the radioactive material within and under the control of the Dosimetry Laboratory in June and December using Attachment A.
  - a. PLACE a check to signify that the source is present.

**3.2 Leak Test Preparation****NOTE**

Any licensed sealed radioactive source in storage and not in use need not be tested until removed from storage for use or transfer.

- 3.2.1 PERFORM the leak test in June and December.
- 3.2.2 ENSURE that the Eberline RM-14/HP-210, or equivalent, is within calibration.
- 3.2.3 PLACE the 0.005  $\mu\text{Ci}$  Tc-99 source in contact with the center of the HP-210 probe and ENSURE that it reads approximately 1000 cpm.
  - a. RESET the scale to XI after the source check.
- 3.2.4 DOCUMENT the source check on Attachment A.

**3.3 Leak Test of the Strontium-90 Irradiator Assembly**

- 3.3.1 If the strontium-90 irradiator assembly is attached to a Harshaw 8800 reader, then OPEN the doors on the front of the reader.
  - a. REMOVE several of the magazines from the eject carousel, as well as from the feed carousel, so as to allow space for smearing the left side of the irradiator assembly.
  - b. MOVE the reader internals forward.
- 3.3.2 If the irradiator assembly is not attached to a Harshaw 8800 reader, then PLACE it on the frisking table.
- 3.3.3 OBTAIN three cotton swabs.
  - a. USE one swab to smear the left side of the irradiator slide mechanism.
  - b. USE another swab to smear the right side of the irradiator slide mechanism.
  - c. USE the last swab to smear the top of the irradiator slide mechanism.
- 3.3.4 COUNT all three of the cotton swabs using the RM-14/HP-210 or equivalent.
  - a. RECORD results on Attachment A.

- 3.3.5 If any swab has a reading of at least 100 cpm above background, SET the irradiator assembly aside and promptly NOTIFY the Radiation Safety Officer and the Dosimetry Laboratory Supervisor.
- 3.3.6 If no swab has a reading of at least 100 cpm above background, RETURN the irradiator assembly to its original location.
  - a. If the irradiator assembly was attached to the Harshaw 8800 reader, then RETURN the reader to its original state by MOVING back the reader internals and RETURNING the magazines to both the feed and eject carousels.
- 3.3.7 ENTER the leak test data and PERFORM the activity calculations on Attachment A.

### 3.4 Leak Test of the BDS Sealed Sources

- 3.4.1 PLACE each source on the table in the irradiation room.
- 3.4.2 OBTAIN four cotton swabs.
- 3.4.3 WIPE the outer raised edge surrounding the radioactive material using one cotton swab per source.
- 3.4.4 COUNT each cotton swab using the RM-14/HP-210 or equivalent.
  - a. RECORD results on Attachment A.
- 3.4.5 If any swab has a reading of at least 100 cpm above background, SET the source aside and promptly NOTIFY the Radiation Safety Officer and the Dosimetry Laboratory Supervisor.
- 3.4.6 If no swab has a reading of at least 100 cpm above background, RETURN the sources to their original storage location.
- 3.4.7 ENTER the remaining leak test data and PERFORM the activity calculations on Attachment A.
- 3.4.8 SUBMIT Attachment A to the Radiation Safety Officer for review.
- 3.4.9 REVIEW the Attachment A results.
- 3.4.10 Promptly NOTIFY the RAB Manager whenever an NRC license limit is exceeded or radioactive material cannot be located.
- 3.4.11 CONTACT the Waste Services Department at the Millstone Nuclear Power Station for assistance with the disposal of any contaminated sealed source.

(RSO)

4. ATTACHMENTS

- 4.1 Attachment A - Semiannual Radioactive Material Inventory and Sealed Source Leak Test

5. SUMMARY OF CHANGES

<u>Step</u>	<u>Change</u>	<u>Reason</u>
Entire Procedure		Format Change

6. BASIS

- 6.1 (REQUISITE 2.1) The basis for this requisite is Condition 13.A of the NRC Byproduct Material License.
- 6.2 (REQUISITE 2.2) The basis for this requisite is Condition 13.C of the NRC Byproduct Material License.
- 6.3 (REQUISITE 2.3) The basis for this requisite is Condition 13.D of the NRC Byproduct Material License.
- 6.4 (REQUISITE 2.4) The basis for this requisite is Condition 13.C of the NRC Byproduct Material License.



ATTACHMENT ASEMIANNUAL RADIOACTIVE MATERIAL INVENTORY AND  
SEALED SOURCE LEAK TESTI. MATERIAL INVENTORY

<u>Description</u>	<u>Serial # (If known)</u>	<u>✓</u>	<u>Activity (If known)</u>
1. Strontium-90 sealed source	HF873	_____	0.5 mCi
2. Promethium-147, BDS planar source	L394	_____	1.2 mCi
3. Thallium-204, BDS planar source	L263	_____	0.9 mCi
4. Strontium-90, BDS planar source	L262	_____	0.3 mCi
5. Technetium-99, BDS planar source	L264	_____	1.4 mCi
6. Uranium Calibrator No. 1	039	_____	3 kg (6.6 lb)
7. Uranium Calibrator No. 2	SP103	_____	3 kg (6.6 lb)
<i>The following are check sources:</i>			
9. Technetium-99	CS-13	_____	0.005 $\mu$ Ci
9. Strontium-90	8343	_____	0.0036 $\mu$ Ci
10. Cesium-137	CS-7A	_____	8 $\mu$ Ci
11. Carbon-14	NEN	_____	0.148 $\mu$ Ci

II. LEAK TEST OF THE LICENSED SEALED SOURCES

Instrument type \_\_\_\_\_ Probe type \_\_\_\_\_ Serial # \_\_\_\_\_

Calibration Due Date \_\_\_\_\_ Background \_\_\_\_\_ cpm Source Check \_\_\_\_\_ cpm

STRONTIUM-90 SMEAR RESULTS:Left side of slide mechanism = \_\_\_\_\_ cpm = \_\_\_\_\_  $\mu$ CiRight side of slide mechanism = \_\_\_\_\_ cpm = \_\_\_\_\_  $\mu$ CiTop side of slide mechanism = \_\_\_\_\_ cpm = \_\_\_\_\_  $\mu$ CiOTHER SOURCE RESULTSPm-147 (BDS) \_\_\_\_\_ cpm = \_\_\_\_\_  $\mu$ CiTl-204 (BDS) \_\_\_\_\_ cpm = \_\_\_\_\_  $\mu$ CiSr-90 (BDS) \_\_\_\_\_ cpm = \_\_\_\_\_  $\mu$ CiTc-99 (BDS) \_\_\_\_\_ cpm = \_\_\_\_\_  $\mu$ CiACTIVITY CALCULATION

$$\text{Activity of the smear } (\mu\text{Ci}) = \frac{(\text{Smear result cpm} - \text{Background cpm}) \times 10 \text{ dpm/cpm}}{2.2 \times 10^6 \text{ dpm}/\mu\text{Ci}}$$

Inventory and Leak Test Performed by \_\_\_\_\_

Date \_\_\_\_\_

Radiation Safety Officer (Signature) \_\_\_\_\_

Date \_\_\_\_\_

# PERSONNEL DECONTAMINATION

---

## 1. OBJECTIVES

To set forth the requirements and techniques for personnel decontamination.

## 2. REQUISITES

- 2.1 A portion of the body or an article of clothing shall be considered decontaminated when a frisk of the affected area produces a net countrate of less than 100 cpm when measured one-half inch from an Eberline HP-210 probe attached to an RM-14 countrate meter or equivalent.

## 3. INSTRUCTIONS

### 3.1 Dosimetry Laboratory Staff

- 3.1.1 If another person is in the laboratory when you discover that you may have contamination on yourself, NOTIFY that person.
- 3.1.2 If possible, TURN the frisker alarm setting to the highest value so as to assess the degree of initial contamination and the effectiveness of decontamination efforts without the annoyance of frisker alarms and resets.
- 3.1.3 SHIELD or MOVE other radiation sources so as not to interfere with the measurement of surface contamination levels.
- 3.1.4 VERIFY the presence of surface contamination using the frisker.
- 3.1.5 Holding the probe approximately one-half inch from your body, locate the area giving the maximum surface reading on the frisker.
- 3.1.6 TAKE a damp paper towel and gently WIPE the affected area in one direction several times.
- 3.1.7 FRISK the area again to see if there is at least a 50% reduction in the countrate.
- 3.1.8 If there is at least a 50% reduction in the countrate, then REPEAT steps 3.1.6 and 3.1.7 until the net countrate is below 100 cpm.
- 3.1.9 If the criterion of step 3.1.7 was not satisfied, then gently WIPE the affected area using liquid soap applied to a towel, or soap and tepid water applied to a towel.
- 3.1.10 FRISK the area again to see if there is at least a 50% reduction in the countrate.

- 3.1.11 If there is at least a 50% reduction in the countrate, then REPEAT steps 3.1.9 and 3.1.10 until the net countrate is below 100 cpm.
- 3.1.12 If the criterion of step 3.1.11 was not satisfied, then SEEK advice from the Radiation Safety Officer.
- 3.1.13 REPEAT steps 3.1.6 through 3.1.12 for the other affected bodily areas.
- 3.1.14 DECONTAMINATE articles of clothing using strips of tape.
- 3.1.15 REPEAT steps 3.1.10 and 3.1.12.
- 3.1.16 DOCUMENT the contamination incident and the decontamination effort using Attachment A.
- 3.1.17 Promptly NOTIFY the Radiation Safety Officer.
- 3.2 Radiation Safety Officer
  - 3.2.1 REVIEW Attachment A.
  - 3.2.2 TREAT soap, towels, tape, and other materials used for personnel decontamination as contaminated until shown to be clean.
  - 3.2.3 ASSESS the need for personnel with skin contamination about the face and nose to have a whole-body count.
  - 3.2.4 ISSUE a report to the Dosimetry Laboratory Supervisor detailing the circumstances involved in the case of personnel contamination.

#### 4. ATTACHMENTS

- 4.1 Attachment A - Personnel Contamination Form

#### 5. SUMMARY OF CHANGES

<u>Step</u>	<u>Change</u>	<u>Reason</u>
Entire Procedure		Format Change

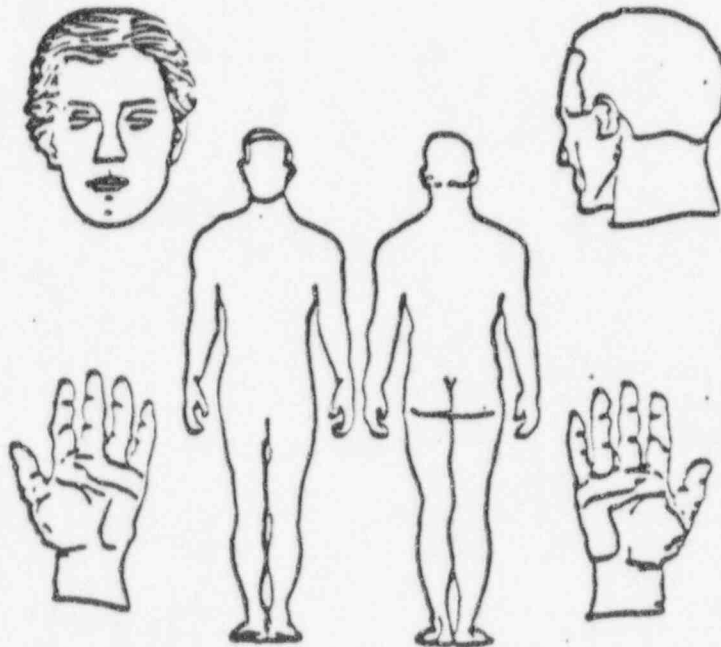
#### 6. BASIS

- 6.1 (REQUISITE 2.1) The determination of the presence of detectable contamination is contained in INPO 91-014, Guidelines for Radiological Protection at Nuclear Power Stations, Chapter VI, Section C.2.b.

ATTACHMENT A

## PERSONNEL CONTAMINATION FORM

Name of affected person \_\_\_\_\_  
Social security number of affected person \_\_\_\_\_  
Employer of affected person \_\_\_\_\_  
Date and time contamination discovered \_\_\_\_\_  
Date and time Radiation Safety Officer notified \_\_\_\_\_  
Describe affected area (use figure below) or object \_\_\_\_\_  
\_\_\_\_\_



Background \_\_\_\_\_ cpm      Survey meter type \_\_\_\_\_  
Degree of initial contamination \_\_\_\_\_ cpm      Serial number \_\_\_\_\_  
Detector efficiency \_\_\_\_\_ dpm/cpm      Probe type \_\_\_\_\_  
Calibration due date \_\_\_\_\_

Date and time decontamination completed \_\_\_\_\_

Describe decontamination efforts (include degree of final contamination in cpm and dpm)  
\_\_\_\_\_  
\_\_\_\_\_

Name of person performing the decontamination \_\_\_\_\_

Reviewed by \_\_\_\_\_ on \_\_\_\_\_  
Radiation Safety Officer (Signature) Date

# RADIOACTIVE MATERIAL RECEIPT AND SHIPMENT

---

## 1. OBJECTIVES

To set forth the requirements for the receipt and shipment of all radioactive material.

## 2. REQUISITES

- 2.1 The Radiation Safety Officer/Designee shall perform the monitoring required by 10CFR20.1906(b) as soon as practicable after receipt of the package, but not later than three hours after the package is received at the company if it is received during normal working hours, or not later than three hours from the beginning of the next working day if it is received after working hours.
- 2.2 The Radiation Safety Officer/Designee shall immediately notify the final delivery carrier and, by telephone and telegram, mailgram, or facsimile, the Administrator of NRC Region I (address and telephone number in 10CFR20, Appendix D) when:
  - a. Removable radioactive surface contamination exceeds the limits of 10CFR71.87(i); or
  - b. External radiation levels exceed the limits of 10CFR71.47.

## 3. INSTRUCTIONS

### 3.1 Receipt of Radioactive Material

(RSO/Designee)

- 3.1.1 REMOVE extraneous materials from the top of the frisking table and SET the alarm point for the countrate meter to the highest value.
- 3.1.2 PUT on a pair of rubber gloves and PLACE the package of radioactive material on the frisking table.
- 3.1.3 EXAMINE the shipping papers.
- 3.1.4 If the shipping papers do not describe material in type and quantity corresponding exactly to that ordered, promptly NOTIFY the vendor.
  - a. REFRAIN from opening the package.

- 3.1.5 PERFORM a radiation survey of the external surface of the labeled package.
- 3.1.6 DOCUMENT the radiation survey using Attachment B in RAB G-3.
- 3.1.7 If the maximum surface exposure rate exceeds 200 mR/hr, then:
  - a. REFRAIN from opening the package.
  - b. Immediately PLACE the package in the irradiation room and POST the door of the room with a "NO ENTRY per RSO" sign.
  - c. REVIEW requisite 2.2 and DETERMINE if it is applicable.
  - d. Promptly NOTIFY the RAB Manager.
- 3.1.8 PERFORM a smear contamination survey of at least 300 cm<sup>2</sup> of the external surface of the labeled package.
- 3.1.9 DOCUMENT the contamination survey using Attachment B in RAB G-3.
  - a. NOTE the date and time of receipt of the package on the contamination survey form.
- 3.1.10 If detectable surface contamination is found, then:
  - a. REFRAIN from opening the package.
  - b. REMOVE your rubber gloves and set them aside on the tabletop.
  - c. Post the door to the processing room with a "NO ENTRY per RSO" sign.
  - d. REVIEW requisite 2.2 and DETERMINE if it is applicable.
  - e. Promptly NOTIFY the RAB Manager.
- 3.1.11 ENTER in the Laboratory Log the date and time of receipt of the package, the name of the person performing receipt surveys, and the general results of the surveys.

### 3.2 Shipment of Radioactive Material

(RSO)

3.2.1 CONTACT the Waste Services Department at the Millstone Nuclear Power Station for assistance with the packaging and shipment of radioactive material.

3.2.2 ENTER in the Laboratory Log the date and time of shipment of the package, the name of the person who prepared the shipment, and the general results of the surveys.

### 4. ATTACHMENTS

None

### 5. SUMMARY OF CHANGES

<u>Step</u>	<u>Change</u>	<u>Reason</u>
Entire Procedure		Format Change and Content Change

### 6. BASIS

6.1 (REQUISITE 2.1) The requirement to perform timely monitoring is contained in 10CFR20.1906(c).

6.2 (REQUISITE 2.2) The requirement for immediate notification is contained in 10CFR20.1906(d).



## ATTACHMENT G

### 11. Waste management.

In the past 15 years, no waste has been shipped. The minute physical and radiological amounts of waste generated are held for decay in a small, labeled, waste container in the locked irradiation room or in a small, labeled, plastic container located atop the frisking table in the laboratory. If it is necessary to dispose of radioactive waste, it will be performed by Millstone Point Nuclear Power Station Waste Services Department personnel under transfer to their facility and NRC license.

BETWEEN:

LICENSE FEE MANAGEMENT BRANCH, ARM  
AND  
REGIONAL LICENSING SECTIONS

(FOR LFMS USE)  
INFORMATION FROM LTS  
-----

PROGRAM CODE: 03225  
STATUS CODE: 2  
FEE CATEGORY: 3P  
EXP. DATE: 19950430  
FEE COMMENTS: "NOT EX 7/2/90"  
DECOM FIN ASSUR REQD: N  
\*\*\*\*\*

LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED

APPLICANT/LICENSEE: NORTHEAST UTILITIES SERVICE COMPANY  
RECEIVED DATE: 950329  
DOCKET NO: 3017011  
CONTROL NO.: 121564  
LICENSE NO.: 06-17235-02  
ACTION TYPE: RENEWAL

2. FEE ATTACHED

AMOUNT: \$680.00  
CHECK NO.: 00001550

3. COMMENTS

SIGNED  
DATE

M. A. Perkins  
4/11/95

B. LICENSE FEE MANAGEMENT BRANCH (CHECK WHEN MILESTONE 03 IS ENTERED ✓)

1. FEE CATEGORY AND AMOUNT: 3P \$680

2. CORRECT FEE PAID. APPLICATION MAY BE PROCESSED FOR:

AMENDMENT \_\_\_\_\_  
RENEWAL ✓ \_\_\_\_\_  
LICENSE \_\_\_\_\_

3. OTHER \_\_\_\_\_

SIGNED  
DATE

Brenda B.  
4/12/95

FOR THE  
#3