

## MATERIALS LICENSE

Amendment No. 09

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.

## OFFICIAL RECORD COPY

Licensee		In accordance with the letter dated July 31, 1996,	
1. Children's Hospital		3. License Number 20-09568-18 is amended in its entirety to read as follows:	
2. 300 Longwood Avenue Boston, Massachusetts 02115		4. Expiration Date February 28, 2003	
		5. Docket or Reference No. 030-11864	
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. Cesium 137	A. Sealed sources (ORNL-Ramco-50)	A. 2,400 curies	
B. Cesium 137	B. Sealed sources (AECL Model C-161 Type 8)	B. 4,000 curies	
C. Cesium 137	C. Sealed sources (CEA-ORIS -LAPIB Model 437C)	C. Not to exceed 1,700 curies per source and 5,100 curies total	
9. Authorized use			
A. For use in an Isomedix Inc. Gammator M(38) irradiator for irradiating blood.			
B. For use in an Atomic Energy of Canada, Ltd. Gammacell 40 Low Dose Rate Laboratory Irradiator for irradiating small animals, biologic samples and other materials except those of an explosive or hazardous nature.			
C. For use in a CIS US Inc. IBL 437C irradiator for irradiating blood.			

## CONDITIONS

10. Licensed material may be used only at the licensee's facility at Children's Hospital's Blood Bank, 300 Longwood Avenue, Boston, Massachusetts or at Enders Pediatric Research Building, 20 Blackfan Street, Boston, Massachusetts.
11. A. Licensed material shall be used by, or under the supervision and in the physical presence of, Ronald Amoling, Sherwin V. Kevy, or individuals trained in accordance with the procedures described in application dated March 5, 1986.
- B. The Radiation Safety Officer for this license is William A. Lorenzen.
12. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from detector cells by the licensee.

MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License Number

20-09568-18

Docket or Reference Number

030-11864

Amendment No. 09

(Continued)

## CONDITIONS

13. A. Sealed sources and detector cells shall be tested for leakage and/or contamination at intervals not to exceed 6 months or at such other intervals as are specified by the certificate of registration referred to in 10 CFR 32.210, not to exceed 3 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 3 months.
- C. In the absence of a certificate from a transferor indicating that a 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.
- 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 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. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission. 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 shall be removed from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall be filed within 5 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 involved, the test results, and corrective action taken.

MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License Number

20-09568-18

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Amendment No. 09

(13. Continued)

## CONDITIONS

- 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.
14. The licensee shall not perform repairs or alterations of the irradiator involving removal of shielding or access to the licensed material. Removal, replacement, and disposal of sealed sources in the irradiator shall be performed by a person specifically licensed by the Commission or an Agreement State to perform such services.
15. 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 February 27, 1981
  - B. Application dated March 5, 1986
  - C. Application dated January 17, 1992
  - D. Letter dated June 25, 1992
  - E. Letter dated July 30, 1992
  - F. Letter dated September 23, 1992
  - G. Letter dated October 28, 1992
  - H. Letter dated December 4, 1992
  - I. Letter dated June 2, 1993
  - J. Letter dated June 29, 1993

Date SEP 30 1996

For the U.S. Nuclear Regulatory Commission

Original Signed By:

Sheri Ann Arredondo

By

Nuclear Materials Safety Branch  
Region I

King of Prussia, Pennsylvania 19406

SEP 30 1996

William New  
Vice President, Research Administration  
Children's Hospital  
300 Longwood Avenue  
Boston, Massachusetts 02115

Dear Mr. New:

This refers to your license amendment request. Enclosed with this letter is the amended license. Please note that as part of this amendment, in accordance with 10 CFR 30.36, effective February 15, 1996, the expiration date of your license has been extended by a period of five years. Your new expiration date is stated in Item 4 of the license.

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

Thank you for your cooperation.

Sincerely,

Original Signed By:

Sheri A. Arredondo  
Division of Nuclear Materials Safety

License No. 20-09568-18  
Docket No. 030-11864  
Control No. 123580

Enclosure:  
Amendment No. 09

DOCUMENT NAME: R:\WPS\MLTR\L2009568.18

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

OFFICE	DNMS/RI	N	DNMS/RI				
NAME	Arredondo						
DATE	08/27/96		08/ /96		08/ /96		08/ /96

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## Children's Hospital

July 31, 1996

U.S. Nuclear Regulatory Commission  
Region 1  
475 Allendale Road  
King of Prussia, PA 19406-1415

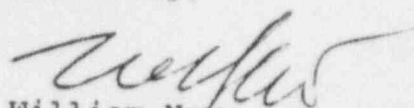
RE: License Number 20-09568-17 (Docket No. 030-08021)  
License Number 20-09568-18 (Docket No. 030-11864)

Dear Sir/Madam:

This letter is to request an amendment to the NRC License's listed above to change the Radiation Safety Officer to Mr. William A. Lorenzen, M.S. (Radiological Science). Mr. Lorenzen received his M.S. degree from the University of Lowell and has been active in Health Physics for over 16 years.

Enclosed please find Mr. Lorenzen's curriculum vitae and a check for the amendment fee.

Sincerely,

  
William New  
Vice President, Research Administration

cc: William A. Lorenzen  
S.T. Treves, M.D., Chairman, Radiation Safety Committee

enclosure

123579 / 123580

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AUG 19 1996



# William A. Lorenze

5 Cleveland Road  
Waltham, Massachusetts 02154  
(617) 899-0069

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## EXPERIENCE

- 1990 to Present: **HARVARD UNIVERSITY**, Cambridge, Massachusetts. Manager, senior Health Physicist, responsible for development and implementation of policies and programs in support of the Nuclear Regulatory Commission licenses.
- 1987 to Present: **LORENZEN & ASSOCIATES**, Waltham, Ma. Consulting in the area of radiation protection. Specializing in Radon mitigation.
- 1986 to 1990: **NUCLEAR METALS, INC.**, Concord, Massachusetts. Supervisor of Health Physics for broad scope Source Material Licensee. Organized, developed and instituted occupational and environmental programs.
- 1980 to 1986: **U.S. ARMY MATERIALS TECHNOLOGY LAB.**, Watertown, Massachusetts. To Senior Health Physicist, independently supported large scale R&D research facility with four separate Nuclear Regulatory Commission licenses.
- 1975 to 1980: **U.S. ARMY CORPS OF ENGINEERS**, Waltham, Massachusetts. Co-op position in Environmental Sciences, Engineering Technician, developed Environmental Impact Statements.

## EDUCATION

- 1992 to Present: Conard and Associates, Nashua, New Hampshire. Work-in-progress, R.P.O. case study. Customer, process and performance management.
- 1983 to 1989: University of Lowell, Lowell, Massachusetts. Master of Science in Radiological Science and Protection.
- 1980 to 1986: U.S. Army Health Physics Training Program Courses: Transportation, Waste Management, Instrumentation and lead training instructor for Uranium safety.
- 1976 to 1980: Wentworth Institute, Boston, Massachusetts. B.S. Environmental Engineering

## PROFESSIONAL AFFILIATIONS

Lecturer, Harvard University, School of Public Health  
Member, National Health Physics Society (HPS)  
Past Director, Member, New England Chapter, HPS  
Member, American Association of Radon Scientist  
EPA Listed Radon Mitigation Contractor (RCP)  
Volunteer Consultant to Massachusetts N.I.A.T.  
Member, Environmental & Radon Sections of HPS

BETWEEN:

LICENSE FEE MANAGEMENT BRANCH, ARM  
AND  
REGIONAL LICENSING SECTIONS

: (FOR LFMS USE)  
: INFORMATION FROM LTS  
: -----  
:  
: PROGRAM CODE: 03510  
: STATUS CODE: 0  
: FEE CATEGORY: 3E  
: EXP. DATE: 20030228  
: FEE COMMENTS: -----  
: DECOM FIN ASSUR REQD: N  
: .....

LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED  
APPLICANT/LICENSEE: CHILDREN'S HOSPITAL - BOSTON (THE)  
RECEIVED DATE: 960819  
DOCKET NO: 3011864  
CONTROL NO.: 123580  
LICENSE NO.: 20-09568-18  
ACTION TYPE: AMENDMENT

2. FEE ATTACHED  
AMOUNT: -----  
CHECK NO.: -----

3. COMMENTS  
REF 123579.

SIGNED M. A. Perkins  
DATE 8/26/96

B. LICENSE FEE MANAGEMENT BRANCH (CHECK WHEN MILESTONE 03 IS ENTERED /\_\_/)

1. FEE CATEGORY AND AMOUNT: 3E \$360

2. CORRECT FEE PAID. APPLICATION MAY BE PROCESSED FOR:  
AMENDMENT ☒ -----  
RENEWAL -----  
LICENSE -----

3. OTHER -----

SIGNED SC  
DATE 9/3/96

Log	Aug 14 I
Remitter	-----
Check No.	323/30
Amount	A940 (#580)
Fee Category	3E
Type of Fee	Amp
Date Check Rec'd	8/29/96
Date Completed	9/3/96
By	SC

1 check - 2 actions  
see CW 123579