

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

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|---|-------------------------------------|--|--|
| Licensee | | In accordance with your request on January 10, 1997, | |
| 1. Northeastern University 229 Forsyth Building | | 3. License Number 20-06432-07 is amended in its entirety to read as follows: | |
| 2. 360 Huntington Avenue Boston, Massachusetts 02115 | | 4. Expiration Date June 30, 2005 | |
| | | 5. Docket or Reference No. 030-13307 | |
| 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 3-83 | A. Any | A. See Condition 12: Also limit to 10 CFR 33.100 Appendix A, Column 1 | |
| B. Nickel 63 | B. Plated sources in detector cells | B. Not to exceed 20 millicuries per source and 200 millicuries total | |
| 9. Authorized use | | | |
| A. Research and development as defined in 10 CFR 30.4; animal studies; teaching and training of students. | | | |
| B. For use in gas chromatographs for sample analysis. | | | |

CONDITIONS

10. Licensed material may be used only at the licensee's facilities located at 360 Huntington Avenue, Boston, Massachusetts and Marine Science Center, East Point, Nahant, Massachusetts.
11. A. Licensed material shall be used by, or under the supervision of, individuals designated in writing by the Radiation Safety Committee, Ralph Buonopane, Ph.D., Chairperson.
- B. The Radiation Safety Officer for this license is John M. Price.
12. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material to quantities below the minimum limit specified in 10 CFR 30.35(d), 40.36(b), and 70.25(d) for establishing financial assurance for decommissioning.

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MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number

20-06432-07

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13. 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.
- 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 microcurie of beta and/or gamma emitting material or not more than 10 microcurie 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.

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14. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.
15. 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.
16. 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.
17. Licensed material shall not be used in or on human beings.
18. Experimental animals, or the products from experimental animals, that have been administered licensed materials shall not be used for human consumption.
19.
 - A. Detector cells containing a titanium tritide foil or a scandium tritide foil shall only be used in conjunction with a properly operating temperature control mechanism which prevents the foil temperatures from exceeding that specified in the certificate of registration referred to in 10 CFR 32.210.
 - B. When in use, detector cells containing a titanium tritide foil or a scandium tritide foil shall be vented to the outside.
20. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
21. Radioactive waste generated shall be stored in accordance with the statements, representations, and procedures included with the waste storage plan described in the licensee's application dated January 27, 1995.
22. 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.

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23. 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 January 27, 1995
- B. Letter dated May 5, 1995

For the U.S. Nuclear Regulatory Commission

ORIGINAL SIGNED BY:

By PENNY A. LANZISERA

Nuclear Materials Safety Branch
Region I

King of Prussia, Pennsylvania 19406

Date MAR - 3 1997

MAR -3 1997

John M. Price
Radiation Safety Officer
Northeastern University
229 Forsyth Building
360 Huntington Avenue
Boston, MA 02115

Dear Mr. Price:

This refers to your license amendment request. Enclosed with this letter is the amended license deleting the Antarctica facility. The facility has been concurrently referenced in a new license which will be forwarded to you under separate cover.. 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:

Penny Lanzisera
Division of Nuclear Materials Safety

License No. 20-06432-07
Docket No. 030-13307
Control No. 124296

Enclosure:
Amendment No. 09

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J. Price, RSO
Northeastern Univ.

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DOCUMENT NAME: R:\WPS\MLTR\L2006432.07

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

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|--------|---------------------|---------------------------------------|---------|--------------------------|--------------------------|--------------------------|--------------------------|
| OFFICE | DNMS/RI | <input checked="" type="checkbox"/> N | DNMS/RI | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| NAME | Lanzisera <i>PL</i> | | | | | | |
| DATE | 02/24/97 | | 02/ /97 | | 02/ /97 | | 02/ /97 |

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| TELEPHONE CONVERSATION RECORD | |
|--|----------------------------|
| Licensee Name: Northeastern University | Date: 1/10/97 |
| | Time: 3:30 PM |
| License No.: 20-06432-07 | Docket No.: 030-13307 |
| | Control No.: XXXXXX |
| Licensee Contact: John Price | Telephone No: 617-373-2769 |
| NRC Contact: Betsy Ullrich | Telephone No: 610-337-5040 |
| Subject: use in Antarctica | |
| <p>Summary:</p> <p>John Price stated that they would like to retain authorization to work in Antarctica and issuance of a new license to do so is okay with him. The researcher is planning to go to Antarctica again in a few weeks. The researcher typically uses H-3 and C-14, but Price will check with him to see about S-35 and P-32. Price will call back this week to confirm which isotopes and quantities are needed for work in Antarctica.</p> <p>2/13/97: Nancy Goodhue, Assistant Radiation Safety Officer, called back to confirm the needed authorizations. Currently, the only user is authorized for 10 mCi H-3, 2 mCi C-14, and 10 mCi S35. We discussed the need for some flexibility, and agreed to issue the license for 15 mCi each of H-3 and S-35, and 5 mCi of C-14. No P-32 is needed (half-life is too short to be successfully transported.)</p> | |
| Action Required/Taken: Issue new license for work in Antarctica by MA licensee. | |
| Signature: <i>Betsy Ullrich</i> Amend 20-06432-07. Betsy Ullrich | Date: February 14, 1997 |

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REC'D IN LAS

BETWEEN:

LICENSE FEE MANAGEMENT BRANCH, ARM
AND
REGIONAL LICENSING SECTIONS

(FOR LFMS USE)
INFORMATION FROM LTS

PROGRAM CODE: 01110
STATUS CODE: 0
FEE CATEGORY: EX 3L
EXP. DATE: 20050630
FEE COMMENTS: 170.11(A)(4)
DECOM FIN ASSUR REQD: N

LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED
APPLICANT/LICENSEE: NORTHEASTERN UNIVERSITY
RECEIVED DATE: 970224
DOCKET NO: 3013307
CONTROL NO.: 124296
LICENSE NO.: 20-06432-07
ACTION TYPE: AMENDMENT

2. FEE ATTACHED

AMOUNT: -----
CHECK NO.: -----

3. COMMENTS

ADMINISTRATIVE ACTION AS A
RESULT OF MASSACHUSETTS
BECOMING AN AGREEMENT STATE.

SIGNED
DATE

M. A. Perkins
2/24/97

B. LICENSE FEE MANAGEMENT BRANCH (CHECK WHEN MILESTONE DATES ENTERED 1-1)

1. FEE CATEGORY AND AMOUNT: -----

FEE EXEMPT

MA Agreement State
NRC Administrative Change

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

3. OTHER -----

SIGNED
DATE

| | |
|-------------------|----------------|
| RECEIVED BY LFDCB | |
| Date | <u>2/26/97</u> |
| Loc | <u>Sub 11</u> |
| By | <u>BR</u> |
| Date Completed | <u>2/26/97</u> |

03+07 for 2/26/97