

MATERIALS LICENSE

Amendment No. 22

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.

302681

Licensee

1. Marquette University
2. 530 North Fifteenth Street
Milwaukee, WI 53233

In accordance with letter dated
May 21, 19973. License Number 48-02931-06 is amended
in its entirety to read as follows:

4. Expiration Date March 31, 2003

5. Docket or
Reference No. 030-011546. Byproduct, Source, and/or
Special Nuclear MaterialA. Any byproduct material
listed in 33.100
Schedule A, Column II7. Chemical and/or Physical
Form

A. Any

8. Maximum Amount that Licensee
May Possess at Any One Time
Under This LicenseA. As specified in 10 CFR
33.100 Schedule A,
Column II except as
noted below:

Calcium-45	100	millicuries
Cobalt-60	5	millicuries
Hydrogen-3	10,000	millicuries
Iodine-125	150	millicuries
Iodine-131	50	millicuries
Phosphorus-32	500	millicuries
Phosphorus-33	250	millicuries
Sulphur-35	1000	millicuries
Strontium-85	50	millicuries

B. Sodium-22

B. Any

B. 10 millicuries

C. Tin-119

C. Any

C. 120 millicuries

D. Tin-121

D. Any

D. 120 millicuries

E. Dysprosium-159

E. Any

E. 120 millicuries

F. Nickel-63

F. Foil Source
(Varian Model
1440-20)F. 2 sources not to
exceed 10 millicuries
each

180292

9706190077 970609
PDR ADOCK 03001154
C PDR

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**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number

48-02931-06

Docket or Reference Number

030-01145

Amendment No. 22

- | | | |
|---|--|--|
| 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 |
| G. Americium-241 | G. Foil Sources (Amersham Corp. Model No. AMM. 1001) | G. 12 sources not to exceed 25 microcuries each |
| H. Cesium-137 | H. Sealed Source (Amersham Model No J15135) | H. 1 millicurie |
| I. Cesium-137 | I. Sealed Source (Nuclear Chicago Surface Density Probe, Mod. 22, No. 220) | I. 3 millicuries |

9. Authorized Use:

- A. and B. Research and development as defined in Section 30.4 of 10 CFR Part 30 and student instruction.
- C., D. and E. To be used as sources for Mossbauer effect spectroscopy.
- F. To be used in a gas chromatograph for sample analysis.
- G. To be used as anti-static devices in instruments used for studying physiological properties of single muscle fibers.
- H. To be used in physics laboratories for Compton effect experiments.
- I. For storage only.

CONDITIONS

- 10. Licensed material shall be used only at the licensee's facilities located at Marquette University, 530 North Fifteenth St., Milwaukee, Wisconsin.

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48-02931-06

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Amendment No. 22

11. The Radiation Safety Officer for this license is Bela E. Piacsek, Ph.D.
12. Licensed material in Subitems 6.A. through 6.I. shall be used by, or under the supervision of, individuals designated by the Radiation Safety Committee. The licensee shall maintain records of individuals designated as users for three years after the individuals's last use of licensed material.
13. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material to quantities below the limits specified in 10 CFR 30.72 which require consideration of the need for an emergency plan for responding to a release of licensed material.
14.
 - 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 specified by the certificate of registration referred to in 10 CFR 32.210.
 - 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 leak test has been made within 6 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 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

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MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number

48-02931-06

Docket or Reference Number

030-01145

Amendment No. 22

- (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 transferred 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 leak 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 immediately 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 III, 801 Warrenville Road, Lisle, Illinois, 60532, ATTN: Chief, Nuclear Materials Licensing Branch. The report shall specify the source involved, the test results, and corrective action taken. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission. Records may be disposed of following Commission inspection.
- G. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically licensed by the Commission or an Agreement State to perform such services.
15. The licensee shall conduct a physical inventory every 6 months to account for all sources and/or devices received and possessed under the license. Records of inventories shall be maintained for 5 years from the date of each inventory, and shall include the quantities and kinds of byproduct material, manufacturer's name and model numbers, location of the sources and/or devices, and the date of the inventory.
16. 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 temperature from exceeding that specified by the manufacturer and approved by U.S. Nuclear Regulatory Commission.
- B. When in use, detector cells containing a titanium tritide foil or a scandium tritide foil shall be vented to the outside.

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MATERIALS LICENSE
SUPPLEMENTARY SHEET

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48-02931-06

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Amendment No. 22

17. In lieu of using the conventional radiation caution colors (magenta or purple on yellow background) as provided in 10 CFR 20.203(a)(1), the licensee is hereby authorized to label detector cells, containing licensed material and used in gas chromatography devices, with conspicuously etched or stamped radiation caution symbols.
18. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.
19. The licensee is authorized to hold radioactive material with a physical half-life of less than 90 days for decay-in-storage before disposal in ordinary trash provided:
- A. Radioactive waste to be disposed of in this manner shall be held for decay a minimum of 10 half-lives.
 - B. Before disposal as ordinary trash, byproduct material shall be surveyed at the container surface with the appropriate meter 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 disposal permitted under this License Condition shall be retained for 3 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.
20. Experimental animals, or the products from experimental animals, that have been administered licensed materials shall not be used for human consumption.
21. This license does not authorize commercial distribution of licensed material.
22. The licensee shall not use licensed material in or on human beings except as provided otherwise by specific condition of this license.
23. The licensee shall not use licensed material in field applications where activity is released except as provided otherwise by specific condition of this license.
24. The licensee is authorized to transport licensed material only in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."

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030-01145

Amendment No. 22

25. 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 U.S. 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 1, 1993, and
- B. Letters dated March 2, 1993, and May 21, 1997.



FOR THE U.S. NUCLEAR REGULATORY COMMISSION

JUN 09 1997

Date _____

By

Stephen R. Matton
Materials Licensing Branch, Region III

COPY

BETWEEN:

License Fee Management Branch, ARM
and
Regional Licensing Sections

(FOR LFMS USE)
INFORMATION FROM LTS

Program Code: 01100
Status Code: 0
Fee Category: EX 3L
Exp. Date: 20030331
Fee Comments: 170.11(A)(4) EFF 7/2/
Decom Fin Assur Req'd: Y

R9

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED

Applicant/Licensee: MARQUETTE UNIVERSITY
Received Date: 970327
Docket No: 3001154
Control No: 302681
License No: 48-02931-06
Action Type: Amendment

2. FEE ATTACHED

Amount:
Check No.:

3. COMMENTS

Signed D. Hersey
Date 5-30-97

B. LICENSE FEE MANAGEMENT BRANCH (Check when all items 03 is entered / ☒ /)

1. Fee Category and Amount: EX 3L 170.11(A)(4)(4)

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

Amendment
Renewal
License

3. OTHER

Signed SC
Date 6/2/97

JUN 05 1997

Log	<u>June 2 III</u>
Remitter	<u> </u>
Check No.	<u> </u>
Amount	<u> </u>
Fee Category	<u>EX 3L</u>
Type of Fee	<u>AmD</u>
Date Check Rec'd	<u> </u>
Date Completed	<u>6/2/97</u>
By:	<u>SC</u>

1997 JUN - 2 AM 11:45

**MARQUETTE**
UNIVERSITY

Mr. Kevin G. Null
Materials Licensing Section
U.S. Nuclear Regulatory Commission
Region III
801 Warrenville Road
Lisle, IL 60532-4351

May 21, 1997

Re: License No. 48-02931-06

Dear Mr. Null:

We are hereby requesting an amendment to our license (No. 48-02931-06). I am writing to you, since you signed our license when it was renewed in 1993. If someone else will review our request, please route this to the appropriate individual.

Our request is for a change in the membership of the Radiation Safety Committee (RSC). The changes are necessitated by the departure of Dr. A. Krishna Kumaran, chairman of the committee (retiring) and Dr. Jack C. Brooks, member, who is the new dean of the college of health sciences and no longer will be involved with use of byproduct materials.

We wish to designate Dr. Gail L. Waring, currently a member, as the new chair of the RSC and replace Dr. Brooks with Dr. James B. Courtright. Dr. Courtright will be a new member as far as our license is concerned. However, he has regularly attended our quarterly meetings for the past two years.

The training and experience of these two individuals are attached.

Sincerely yours,

Bela E. Piacsek, Ph.D.
Radiation Safety Officer

170.11(A)(4)
FEE EXEMPT

RECEIVED**MAY 27 1997****REGION III**

pm: 5-22-97

JUN 05 1997

302681

Gail L. Waring, Ph.D.

B.S. San Francisco State University

Ph.D. University of Oregon

Postdoctoral Training - Indiana University

Isotope Use and Training:

<u>Isotope</u>	<u>Maximum Amount</u>	<u>Where Experience Was Gained</u>	<u>Duration of Experience</u>	<u>Type of Use</u>
^3H	5 mCi	Univ. Oregon	5 yrs	Research
^{32}P	5 mCi	Indiana Univ.	5 yrs	Research
^{14}C	1 mCi	Indiana Univ.	5 yrs	Research
^{35}S	1 mCi	Indiana Univ.	3 yrs	Research
All of the above and	10 mCi	Marquette Univ.	19 yrs	Research
^{125}I	1 mCi	Marquette Univ. Research	19 yrs	Research

James B. Courtright, Ph.D.

A. B. Yale University

Ph. D. The Johns Hopkins University

Postdoctoral Training - Johns Hopkins, Max Planck Institute, Univ. Texas

Isotope Usage and Training:

<u>Isotope</u>	<u>Maximum Amount</u>	<u>Where Experience Was Gained</u>	<u>Duration of Experience</u>	<u>Type of Use</u>
^3H	15 mCi	Johns Hopkins	3 yrs	Research
		Univ. Texas	1 yr	"
		Marquette Univ.	26 yrs	"
^{14}C	10 mCi	Max Planck Inst.	2 yrs	Research
		Univ. Texas	1 yr	"
		Marquette Univ.	26 yrs	"
^{32}P	10 mCi	Johns Hopkins	3 yrs	Research
		Marquette Univ.	26 yrs	"
^{35}S	5 mCi	Marquette Univ.	2 yrs	Research

JUN 09 1997

Bela E. Piacsek, Ph.D.
Radiation Safety Officer
Marquette University
530 North 15th Street
Milwaukee, WI 53233

Dear Dr. Piacsek:

Enclosed is Amendment No. 22 to your NRC Material License Number 48-02931-06 in accordance with your request.

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 III office so that we can provide appropriate corrections and answers.

Please note that we have deleted License Condition No. 25 which required that you, as the licensee, maintain records of information important to safe and effective decommissioning until the NRC terminates this license. The condition is deleted because the NRC states the same requirement in the regulations under 10 CFR 30.35(g). We advise you that the NRC still requires that you comply with that requirement.

We have extended your expiration date by five years. Please refer to our letter dated May 7, 1996 which discusses the one-time five year extension for certain licenses.

Please be advised that your license expires at the end of the day, in the month, and year stated in the license. Unless your license has been 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 Radiation Safety Officer permanently discontinues performance of duties under the license or has a name change; or

302681

- b. When the licensee's mailing address 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:
 - a. When you decide to terminate all activities involving materials authorized under the license; or
 - b. If you decide not to complete the facility, acquire equipment, or possess and use authorized material.
4. Request and obtain a license amendment before you:
 - a. Change Radiation Safety Officers;
 - b. Order byproduct material in excess of the amount, or radionuclide, or form different than authorized on the license;
 - c. Add or change the areas of use or address or addresses of use identified in the license application or on the license; or
 - d. 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 certifying official rather than a consultant.

You will be periodically inspected by 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

B. Piacsek

-3-

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.

Sincerely,

Original Signed By
Evelyn R. Matson
Nuclear Materials Licensing Branch

License No. 48-02931-06
Docket No. 030-01154

Enclosure: Amendment No. 22

DOCUMENT NAME: M:\03001154.CL7

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

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NAME	EMatson:jaw								
DATE	06/ 6/97								

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION III
801 WARRENVILLE ROAD
LISLE, ILLINOIS 60532-4351

May 30, 1997

Bela E. Piacsek, Ph.D.
Radiation Safety Officer
Marquette University
530 North 15th Street
Milwaukee, WI 53233

SUBJECT: ACKNOWLEDGEMENT OF CORRESPONDENCE
(Letter Dated 05/21/97)

Dear Licensee:

In response to your request, we have completed the initial processing, which is an administrative review of your application for a(n):

☐ New License ☒ Amendment ☐ Renewal
☐ Termination ☐ Auth User (Amendment not required)
☐ Other _____

No administrative deficiencies were identified during this initial review. However, it should be noted that a technical review may identify omissions in the submitted information.

It appears that your request is routine (see 1-3 below, as applicable).

1. New and amendment actions are normally processed within 90 days, unless we find major deficiencies, or policy issues requiring central program office assistance.
2. Renewal actions are normally processed within 180 days, however, under timely filing (before expiration), you may continue to operate under your existing license.
3. Termination actions are normally processed within 90 days, unless confirmatory surveys following decontamination/decommissioning activities are involved.

A copy of your correspondence has been forwarded to our Licensing Fee and Debt Collection Branch (301/415-6097) for approval of the fee category and amount, if required.

If you have a compelling safety or business-related reason for requesting expedited review, please contact the Materials Licensing Branch at (630) 829-9887. We will try to complete your request as soon as practicable. Any correspondence about this request should reference the control number.

Nuclear Materials Support Branch

Mail Control No. 302681
License No. 48-02931-06