

## MATERIALS LICENSE

Amendment No. 05

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.

301871

Licensee

1. Alma College

In accordance with letters dated  
September 20, 1996 and November 26, 1996  
3. License Number 21-18972-02 is amended in  
its entirety to read as follows:

2. Alma, Michigan 48801

4. Expiration Date July 31, 2001

5. Docket or  
Reference No. 030-288956. Byproduct, Source, and/or  
Special Nuclear Material7. Chemical and/or Physical  
Form8. Maximum Amount that Licensee  
May Possess at Any One Time  
Under This License

A. Hydrogen-3

A. Labelled compounds

A. 10 millicuries

B. Carbon-14

B. Labelled compounds

B. 5 millicuries

C. Phosphorus-32

C. Labelled compounds

C. 5 millicuries

D. Sulfur-35

D. Labelled compounds

D. 5 millicuries

E. Iodine-125

E. Labelled compounds

E. 10 microcuries

F. Cesium-137

F. Sealed source (ICN  
Model 373)

F. 10 millicuries

G. Cobalt-60

G. Sealed source (ICN  
Model 373)

G. 1 millicurie

H. Plutonium-239

H. Sealed Pu-Be  
neutron source  
(NUMEC-P)

H. 80 grams

9. Authorized Use:

A. through G. To be used for classroom instructional purposes to teach students.

H. To be used in a neutron howitzer for laboratory experiments and student instruction.

## CONDITIONS

10. Licensed material shall be used only at the licensee's facilities located at  
Dow Science Building & Kapp Science Laboratory Center, Alma College,  
Alma, Michigan.

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**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License Number  
21-18972-02

Docket or Reference Number  
030-28895

Amendment No. 05

11. A. Licensed materials listed in Subitems 6.A. through H. may be used by or under the supervision of Eugene C. Deci, Ph.D.
- B. Licensed materials listed in Subitems 6.C., 6.D., and 6.E. may be used by or under the supervision of Joe D. Beckmann, Ph.D.
- C. The Radiation Protection Officer for the activities authorized by this license is Eugene C. Deci, Ph.D.
12. Sealed sources containing licensed material shall not be opened.
13. A. (1) Each sealed source containing licensed material, other than hydrogen-3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six months; except those sealed sources as specified by the manufacturer and specifically authorized by the Commission or an Agreement State may be leak tested at intervals not to exceed three years. 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 received from another person shall not be put into use until tested.
- (2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.
- B. Any source in storage and not being used need not be tested. When the source is removed from storage for use or transfer to another person, it shall be tested before use or transfer.
- C. 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, the source shall be removed from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. A 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 60532-4351, ATTN: Chief, Nuclear Materials Safety 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.

COPY

MATERIALS LICENSE  
SUPPLEMENTARY SHEETLicense Number  
21-18972-02Docket or Reference Number  
030-28895

Amendment No. 05

- D. 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.
14. The licensee is authorized to hold radioactive material with a physical half-life of less than 65 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 normal waste, radioactive waste shall be surveyed to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated.
15. Licensed material shall not be used in or on human beings or in field applications where activity is released except as provided otherwise by specific condition of this license.
16. 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 September 28, 1990;
  - B. Letters received June 6, 1991 and July 12, 1991; and
  - C. Letter dated July 27, 1994.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date

12/5/96

By

Kevin G. Rull

Nuclear Materials Licensing Branch, Region III

COPY

BETWEEN:

License Fee Management Branch, ARM  
and  
Regional Licensing Sections

(FOR LFMS USE)  
INFORMATION FROM LTS

Program Code: 03620  
Status Code: 0  
Fee Category: EX 3P 1D  
Exp. Date: 20010731  
Fee Comments: 170.11(A)(4)  
Decom Fin Assur Req'd: N

SS  
16

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED

Applicant/Licensee: ALMA COLLEGE  
Received Date: 960925  
Docket No: 3028895  
Control No.: 301871  
License No.: 21-18972-02  
Action Type: Amendment

2. FEE ATTACHED

Amount: 0  
Check No.: 0

3. COMMENTS

Signed D. Hersey  
Date 9-26-96

B. LICENSE FEE MANAGEMENT BRANCH (Check when milestone 03 is entered /\_\_\_/)

1. Fee Category and Amount: EX 3P 1D

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

Amendment ☒  
Renewal ☐  
License ☐

3. OTHER

Signed SC  
Date 9/30/96

OCT 08 1996

170.11(A)(4)  
**FEE EXEMPT**

Log	3ep 13 711
Remitter	
Check No.	
Amount	
Fee Category	EX 3P 1D
Type of Fee	AMD
Date Check Rec'd	
Date Completed	9/30/96
By:	SC

1996 SEP 30 PM 3:43





614 W. SUPERIOR ST.  
ALMA, MICHIGAN 48801-1599  
TEL (517) 463-7111  
FAX (517) 463-7277

September 20, 1996

U.S. Nuclear Regulatory Commission  
Region III  
Materials Licensing Section  
Washington, D.C. 20555-0001

To Whom It May Concern:

This letter is an application for amendment of license number 21-18972-02 issued to Alma College, Alma, Michigan 48801. The person to be contacted about this application is Eugene C. Deci, Physics Department, Alma College (517-463-7193, Internet: Deci@alma.edu).

Dr. Steven Wietstock is no longer employed by Alma College. We wish to remove his name from those authorized by our license to use radioactive materials. We wish to add authorization for Dr. Joe D. Beckmann to use source material and to supervise the student use of source material in Biochemistry laboratories as specified in our license.

Dr. Joe D. Beckmann has a Ph.D. in Biochemistry from the Medical College of the University of Wisconsin (1984). He has completed a 40 hour course titled, "Fundamentals of Radiation and Radiation Protection" in 1987 and refresher radiation safety workshops yearly until 1995 at the University of Nebraska Medical Center. He has been an authorized user of labeled compounds at UNMC for the last nine years, before coming to Alma College in 1996.

Sincerely,

Jon Groteluschen  
Vice President for Finance

170.11(A)(4)  
FEE EXEMPT

RECEIVED

SEP 25 1996

REGION III

pm: 9-20-96

301871  
SEP 25 1996

DATE: 9-26-96

CORRESPONDENCE CLARIFICATION SHEET

REVIEWER: John Madera  
LICENSEE: ALMA COLLEGE  
LICENSE NUMBER: 21-18972-02

The following correspondence has been received from the above licensee and it is not clear what action(s) is(are) required: Please review this correspondence and indicate which of the following applies, and please return to Debbie Hersey, as soon as possible.

☐ Additional Information to Control No. \_\_\_\_\_  
Process in as a new action, additional information, and no fee required.

☐ Process as new licensing action. Review has already been started on Control No. \_\_\_\_\_ and this information cannot be combined with current in-house action.

☐ Can be combined with Control No. \_\_\_\_\_. Review has not been started.

☒ Appears to be a(n) Amendment.

☐ Appears to be information for the license file - file it.

☐ Licensee is adding Nuclear Pharmacists.  
Amendment is necessary \_\_\_\_\_. Amendment is not necessary \_\_\_\_\_.  
(Information for license file)

☐ Licensee is adding authorized users.  
A check is included \_\_\_\_\_. No check is included \_\_\_\_\_.  
Amendment is necessary \_\_\_\_\_. Amendment is not necessary \_\_\_\_\_.  
(Information for the license file)

☐ Other: \_\_\_\_\_

Thank You For Your Help!!!

02/02/95

DEC 10 1996

Eugene C. Deci, Ph.D.  
Radiation Safety Officer  
Alma College  
614 W. Superior Street  
Alma, MI 48801-1599

Dear Dr. Deci:

Enclosed is Amendment No. 05 to your NRC Material License No. 21-13972-02 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 at (630) 829-9887 so that we can provide appropriate corrections and answers.

Please note, we have not authorized Joe D. Beckmann, Ph.D. for all of the radionuclides authorized on your license because Dr. Beckmann needs to show evidence of training and handling experience using hydrogen-3, carbon-14, cesium-137, cobalt-60 and plutonium-239.

If you wish to pursue the above, you may resubmit your request as additional information to Control No. 301871, to avoid an additional fee.

Also, note we have extended the expiration date of the license for five years in accordance with the regulations (10 CFR 30.36).

Also, we have removed the license condition requiring decommissioning records because this requirement is in the regulations.

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.

301871

2. Notify NRC, in writing, within 30 days:
  - a. When the Radiation Safety Officer permanently discontinues performance of duties under the license or has a name change; or
  - 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 when you decide to terminate all activities involving materials authorized under the license.
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. 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.

Sincerely,

Original Signed By  
W. P. Reichhold  
Nuclear Materials Licensing Branch

License No.: 21-18972-02  
Docket No.: 030-28895

Enclosure: Amendment No. 05

DOCUMENT NAME: M:\03028895.CL6

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

OFFICE	DNMS/RIII <i>W</i>	DNMS/RIII						
NAME	WREICCHOLD:jaw	KNUL						
DATE	12/9/96	12/ /96						

OFFICIAL RECORD COPY



614 W. SUPERIOR ST.  
ALMA, MICHIGAN 48801-1599  
TEL (517) 463-7111  
FAX (517) 463-7277

November 26, 1996

Bill Reichhold  
United States Nuclear Regulatory Commission  
Region 3  
801 Warrenville Road  
Lisle, IL 60532-4351

mail control 301871

FAX: (630) 515-1259

Dear Mr. Reichhold:

Dr. Eugene Deci, our RSO here at Alma College, forwarded your November 15 letter of inquiry to me, which I am happy to address.

- A. Yes, I have received formal training in the safe handling of radionuclides and radiation protection. While at the UNMC I completed a formal 40 h course entitled "Fundamentals of Radioactivity and Radiation Protection" in the fall of '87.
- B. Yes, I have training and experience in radioactivity measurements, standardization, monitoring, and several instruments.
- C. Yes, my training includes calculations of decay kinetics, radiation dose, quenching, etc.
- D. Yes, my coursework included instruction in biological effects of radiation.
- E. My primary usage of radionuclides has been with  $^{32}\text{P}$  and  $^{35}\text{S}$ , which I have used as nucleotides (dCTP, ATP, etc.) for routine radiolabeling of DNA. Quantities were generally no greater than 0.5 mCi. I was an Authorized User at the University of Nebraska Medical Center for the past nine years. Before that, I frequently used isotopes as a postdoctoral fellow while at Dartmouth College from 1984-87. Thus, I have twelve years accumulated experience in the use of radioisotopes. In addition, I did work with  $^{125}\text{I}$  briefly as a graduate student at the Medical College of Wisconsin, for immunoradiolabeling laboratory exercises.

Please contact me if you require further information.

Sincerely yours,

Joe D. Beckmann, Ph.D.  
Associate Professor

cc: Eugene C. Deci, Ph.D.

RECEIVED

DEC 02 1996

REGION III

DEC 02 1996

pm: 11-25-96

## FAX TRANSMITTAL

# of pages 1

To: <u>EUGENE C. Deci Ph.D.</u>	From: <u>BILL REICHHOLD</u>
Agency: <u>ALMA College</u>	Phone: <u>(630) 829-4839</u>
Fax: <u>(517) 463-7277</u>	Fax: <u>(630) 515-1259</u>
NSN 7540-01-317-7300	5099-101
GENERAL SERVICES ADMINISTRATION	

UNITED STATES NUCLEAR REGULATORY COMMISSION  
 REGION 3  
 801 WARRENVILLE ROAD  
 Lisle, ILLINOIS 60532-4351

PHONE CONVERSATION RECORD

15 November 1996  
 Eugene C. Deci, Ph.D.  
 Radiation Safety Officer  
 Alma College  
 Alma, Michigan

Dear Dr. Deci,

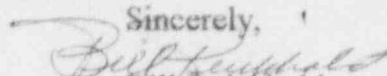
The following additional information is needed to complete the review of your amendment request.

Please clarify if the radiation safety training and experience for Dr. Joe Beckmann included the following.

- A. The principles and practices of radiation protection.
- B. Radioactivity measurements, standardization and monitoring techniques, and instruments.
- C. Mathematics and calculations basic to the use and measurement of radioactivity.
- D. Biological effects of radiation.
- E. A description of the radionuclides used. Such as:
  1. Which isotopes were handled.
  2. The maximum quantities of radioactivity handled.
  3. Where the experience was gained.
  4. The duration of experience with each radionuclide.
  5. The type of use for each radionuclide.

Please send a "hard copy" of your response within 15 days and refer to mail control 301871. Please call me at 630-829-9839 if you have any questions.

Sincerely,

  
 Bill Reichhold



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION III  
801 WARRENVILLE ROAD  
LISLE, ILLINOIS 60532-4351

September 26, 1996

Eugene C. Deci  
Radiation Safety Officer  
Alma College  
Alma, MI 48801

SUBJECT: ACKNOWLEDGEMENT OF CORRESPONDENCE  
(Letter Dated 09/20/96)

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. 301871  
License No. 21-18972-02