

## MATERIALS LICENSE

Amendment No. 24

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

1. Olin Research Center

2. 350 Knotter Drive  
P.O. Box 586  
Cheshire, Connecticut 06410In accordance with the letter dated  
September 4, 1996,3. License Number 06-08166-02 is amended in  
its entirety to read as follows:

4. Expiration Date December 31, 2003

5. Docket or  
Reference No. 030-038026. Byproduct, Source, and/or  
Special Nuclear Material7. Chemical and/or Physical  
Form8. Maximum Amount that Licensee  
May Possess at Any One Time  
Under This LicenseA. Hydrogen 3  
B. Carbon 14  
C. Phosphorus 32  
D. Sulphur 35  
E. Iodine 125  
F. Nickel 63A. Any  
B. Any  
C. Any  
D. Any  
E. Any  
F. Plated sourcesA. 250 microcuries  
B. 80 millicuries  
C. 20 microcuries  
D. 30 millicuries  
E. 10 microcuries  
F. Not to exceed 15  
millicuries per source  
and 270 millicuries total

9. Authorized use

A. through F. Research and development as defined in 10 CFR 30.4.

## CONDITIONS

10. Licensed material may be used only at the licensee's facilities located at 350 Knotter Drive, Cheshire, Connecticut and 91 Shelton Avenue, New Haven, Connecticut.
11. A. Licensed material shall be used by, or under the supervision of, Jon R. Geiger, Ph.D., James P. Dawson and James C. Ritter. Licensed material specified in Items 6.A., 6.B. and 6.F. shall be used by, or under the supervision of, Patricia A. Turley.
- B. The Radiation Safety Officer for this license is James C. Ritter.
12. Licensed material shall not be used in or on human beings.
13. Experimental animals, or the products from experimental animals, that have been administered licensed materials shall not be used for human consumption.
14. The licensee shall not use licensed material in field applications where activity is released except as provided otherwise by specific condition of this license.

MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License Number

06-08166-02

Docket or Reference Number

030-03802

Amendment No. 24

15. 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 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. 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.

MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License Number

06-08166-02

Docket or Reference Number

030-03802

Amendment No. 24

- 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.
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. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.
18. 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.
19. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR 71, "Packaging and Transportation of Radioactive Material."
20. 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.
21. The licensee shall not store licensed material contained in waste for more than two years from the date the waste is put into storage or January 1, 1994, whichever is later. The licensee shall maintain records which indicate the date that licensed material contained in waste is put into storage. This condition does not apply to licensed material intended for disposal by decay-in-storage pursuant to 10 CFR 35.92 or other conditions of this license.

MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License Number

06-08166-02

Docket or Reference Number

030-03802

Amendment No. 24

22. 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 November 19, 1992
- B. Letter dated October 1, 1993
- C. Letter dated November 13, 1993
- D. Letter dated January 26, 1994
- E. Letter dated February 7, 1994
- F. Letter dated February 1, 1995
- G. Letter dated March 22, 1995
- H. Letter dated September 4, 1996



For the U.S. Nuclear Regulatory Commission

Original Signed By  
James M. Bondick

By

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

Date SEP 30 1996



SEP 30 1996

Mr. James F. Womac  
Section and Facilities Manager  
Olin Research Center  
350 Knotter Drive  
P.O. Box 586  
Cheshire, Connecticut 06410-0586

Dear Mr. Womac:

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.

In accordance with current NRC policy, two conditions have been deleted and one condition has been changed in the license. Conditions 19 and 20, as they appeared in Amendment No. 23, have been deleted. Condition 19 referred to operations with gas chromatographs that used tritide foils in gas chromatographs. The possession and use of gas chromatographs that used tritide foils was removed from the license in Amendment No. 06, therefore, this condition is no longer necessary. Condition 20 referred to the labeling of detector cells with the conventional radiation caution color. This provision is covered in 10 CFR 20.1901(b), therefore, this condition is no longer necessary. The decay-in-storage condition in the license has been changed to conform with the possession and use of sulfur 35.

In a telephone conversation with Mr. James C. Ritter, he requested copies of the original license and amendments 1 through 5 for his file. Copies of these documents are enclosed.

Please review the enclosed amendment 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:**

James M. Bondick  
Health Physicist  
Division of Nuclear Materials Safety

License No. 06-08166-02  
Docket No. 030-03802  
Control No. 123653

OFFICIAL RECORD COPY ML 10

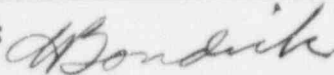
Enclosures:

1. Amendment No. 24
2. Copies of original license  
and Amendments 1 through 5

DOCUMENT NAME: R:\WPS\MLTR\L0608166.02

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	DNMS/RI	N	DNMS/RI				
NAME	JBondick/jmb <i>JB</i>						
DATE	09/12/96	09/	/96	09/	/96	09/	/96

<b>TELEPHONE CONVERSATION RECORD</b>		<b>Date:</b> 9/12/96	<b>Time:</b> 9:30 a.m.
<b>Mail Control No.:</b> 123653		<b>License No.:</b> 06-08166-02	<b>Docket No.:</b> 030-03802
<b>Person Called:</b> James C. Ritter, RSO		<b>Organization:</b> Olin Research Center	<b>Telephone Number:</b> 203- 271-4026
<b>Person Calling:</b> Jim Bondick		<b>Organization:</b> NRC	<b>Telephone Number:</b> 6951
<p><b>Subject:</b> Request to amend license; deletion of license conditions no longer necessary, records of disposal of licensed material; and a request to supply copies of original license and amendments nos. 1 through 5.</p>			
<p><b>Summary:</b> Spoke to Mr. Ritter about the requests for the amendment changes. Discussed the deletion of license conditions no longer necessary, and the automatic extension of the license expiration date. Mr. Ritter did not have copies of the original license and amendments number 1 through 5, and requested copies of the original and amendments numbers 1 through 5 for his file. Also discussed that the one license condition to be deleted related to H-3 gas chromatographs which were removed from the license on Amendment No. 06. Mr. Ritter's file only begins with Amendment No. 06. The initial inspection conducted June 22, 1967, refers to an H-3 GC source which was removed from an instrument and stored in a drawer because the instrument was converted to a non-radioactive GC. Mr. Ritter is going to search for the documents tracking the disposition of the H-3 GC sources for his records.</p>			
<p><b>Action Required/Taken:</b> Note to file, process amendment request, include copies of the original license and amendments 1 through 5 per Mr. Ritter's request.</p>			
<b>Signature:</b> 		<b>Date:</b> September 12, 1996	



RESEARCH CENTER

350 KNOTTER DRIVE, P.O. BOX 586, CHESHIRE, CT 06410-0586

Phone: (203) 271-4000

030-03802

September 4, 1996

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

RE: Material License No. 06-08166-02  
Docket No. 030-03802

Licensing Assistance Section:

We wish to amend the above cited Materials License by increasing the maximum possession limit for carbon-14 from 40 millicuries to 80 millicuries, and reducing the maximum possession limit for chlorine-36 from 5 millicuries to zero. The carbon-14 will be incorporated into radiolabelled compounds required for physical and environmental fate studies conducted according to guidelines of the Environmental Protection Agency. We currently do not possess any chlorine-36, and wish to remove it from our license in order to remain exempt from certification of financial assurance for decommissioning.

In addition, we wish to add room 290 to the license to provide additional laboratory space, if needed, for studies involving the use of radiolabelled compounds. Figure 1 shows the location of 290 (circled in red) on the facility floor plan. Rooms currently on our license have also been highlighted. Figure 2 shows the dimensional and physical layout of laboratory 290.

Please remove John R. Bucciarelli's name from section 11.A. This individual no longer works at this location.

In section 11.A. and 11.B., John C. Ritter is named incorrectly as a licensed user and as the Radiation Safety Officer. The correct name is James C. Ritter.

Enclosed is a check for \$610.00 for processing this amendment to Olin's materials license. If you have any questions or require additional information, you may contact me at (203) 271-4026.

Sincerely,

James C. Ritter  
Radiation Safety Officer

James F. Womac  
Section and Facilities Manager

OFFICIAL RECORD COPY

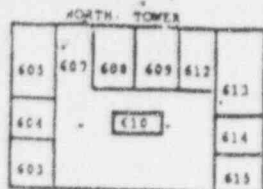
ML 10

O L I N C O R P O R A T I O N

123653

SEP - 6 1996





→ Evacuation Routes  
+ Emergency Stations

FIGURE 1

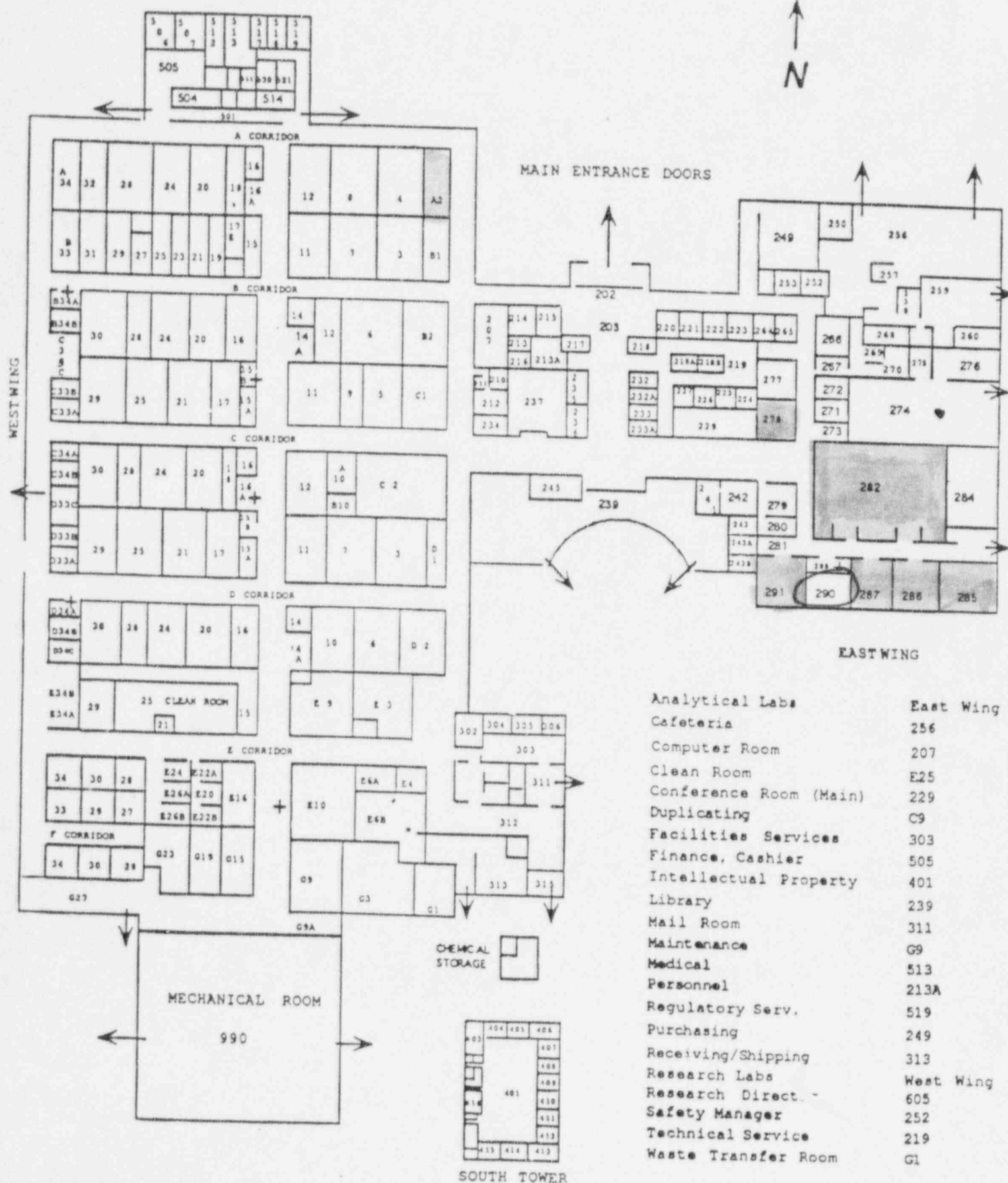
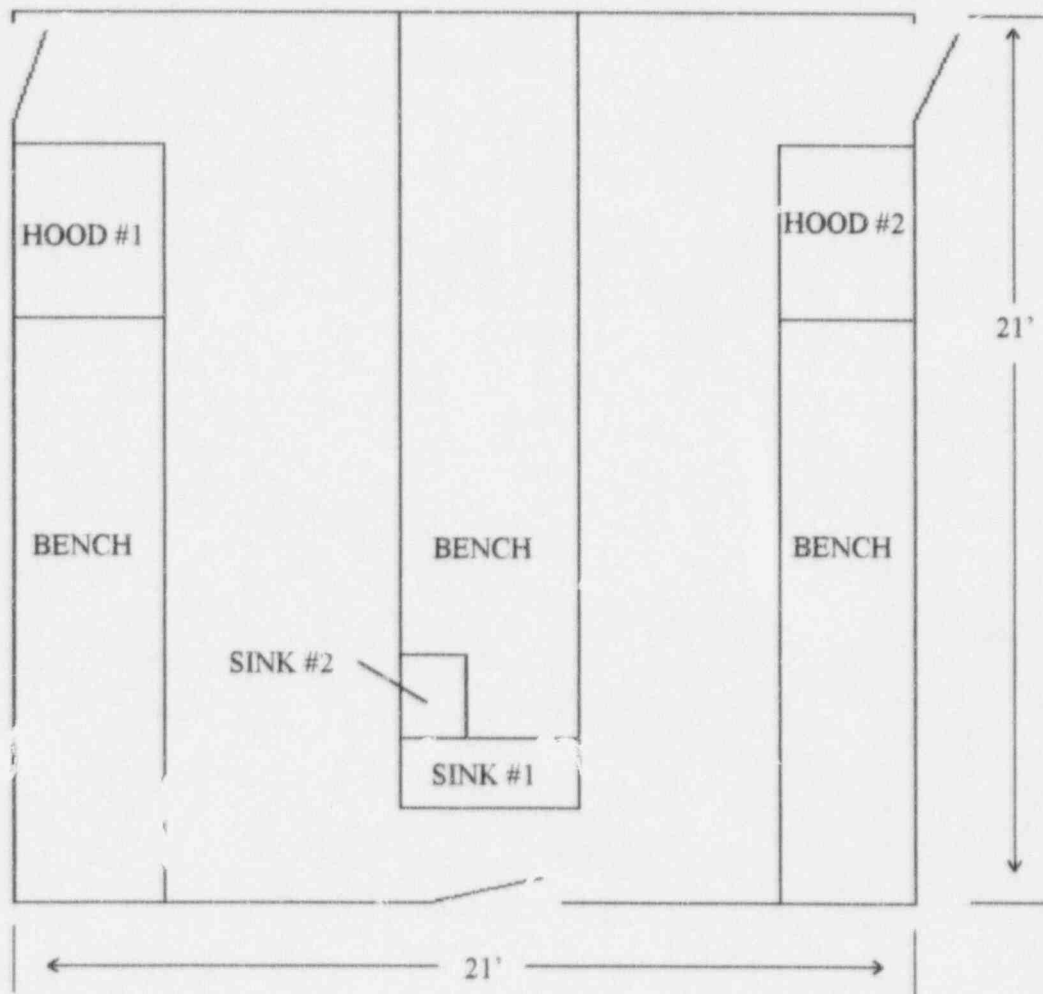


FIGURE 2

FLOOR PLAN - ROOM 290



B. L. L. EN:

LICENSE FEE MANAGEMENT BRANCH, ARM  
AND  
REGIONAL LICENSING SECTIONS

(FOR LFMS USE)  
INFORMATION FROM LTS

PROGRAM CODE: 03620  
STATUS CODE: 0  
FEE CATEGORY: 3M  
EXP. DATE: 20031231  
FEE COMMENTS: \_\_\_\_\_  
DECOM FIN ASSUR REQD: N  
.....

LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED

APPLICANT/LICENSEE: OLIN RESEARCH CENTER  
RECEIVED DATE: 960906  
DOCKET NO: 3003802  
CONTROL NO.: 123653  
LICENSE NO.: 06-08166-02  
ACTION TYPE: AMENDMENT

2. FEE ATTACHED

AMOUNT: \$610.00  
CHECK NO.: 405382

3. COMMENTS

SIGNED  
DATE

M. A. Perkins  
2/2/96

B. LICENSE FEE MANAGEMENT BRANCH (CHECK WHEN MILESTONE 03 IS ENTERED 1)

1. FEE CATEGORY AND AMOUNT: 3M 8610

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

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

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

SIGNED  
DATE

\_\_\_\_\_  
\_\_\_\_\_

Log	Aug 21
Remitter	OLIN CHEMICALS
Check No.	405382
Amount	\$610
Fee Category	3M
Type of Fee	Amend
Check Rec'd	9/19/96
Completed	BA