

OFFICIAL RECORD COPY MATERIALS LICENSE

Amendment No. 6

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.

Licensee		In accordance with letter dated July 29, 1996	
1. U.S. Department of Transportation Federal Highway Administration		3. License Number	45-23090-01
		is renewed in its entirety to read as follows:	
2. Office of Engineering Research & Development FHWA-HNR-30, 6300 Georgetown Pike McLean, Virginia 22101		4. Expiration Date	July 31, 2005 (Extended)
		5. Docket or Reference No.	030-28770
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. Americium 241	A. Sealed gamma or neutron source registered pursuant to 10 CFR 32.210 or an equivalent Agreement State regulation	A. No single source to exceed 11.1 GBq (300 mCi), and 37 GBq (1 curie) total	
B. Cesium 137	B. Sealed gamma source registered pursuant to 10 CFR 32.210 or an equivalent Agreement State regulation	B. No single source to exceed 18.5 GBq (500 mCi), and 37 GBq (1 curie) total	
C. Americium 241/Cesium 137	C. Sealed neutron or gamma source registered pursuant to 10 CFR 32.210 or an equivalent Agreement State regulation	C. No single source to exceed 18.5 GBq (500 mCi), and 37 GBq (1 curie) total	
D. Californium 252	D. Sealed neutron source registered pursuant to 10 CFR 32.210 or an equivalent Agreement State regulation	D. No single source to exceed 370 MBq (10 millicuries), and 740 MBq (20 millicuries) total	
E. Cobalt 60	E. Sealed gamma source registered pursuant to 10 CFR 32.210 or equivalent Agreement State regulation	E. No single source to exceed 3.7 GBq (100 millicuries), and 37 GBq (1 curie) total	

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**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number 45-23090-01

Docket or Reference Number 050-28770

Amendment No. 6

9. Authorized Use:

- A., B., D., and E. For use in prototype research and development devices for measuring the composition and density of materials.
- B. through D. Sealed sources contained in compatible commercial portable gauging devices registered pursuant to 10 CFR 32.210 or an equivalent Agreement State regulation for measuring properties of materials.

CONDITIONS

10. Licensed material may be used at the licensee's facilities located at the Turner-Fairbank Highway Research Center, 6300 Georgetown Pike, McLean, Virginia and at temporary job sites of the licensee anywhere in the United States.
11. The Radiation Protection Officer for this license is Terry Mitchell, Ph.D.
12. Licensed material shall only be used by, or under the supervision and in the physical presence of, Terry Mitchell or individuals who have successfully completed the manufacturer's training program for gauge users, have been instructed in the licensee's routine and emergency operating procedures and who have been designated by the Radiation Safety Officer. The licensee shall maintain records of individuals designated as users and their training for five years following the last use of licensed material by the individual.
13. Sealed sources containing licensed material shall not be opened by the licensee.
14. A.(1) Sealed sources specified in Item 7, 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. Any source received from another person which is not accompanied by a certificate indicating that a test was performed within 6 months before the transfer shall not be put into use until tested.
- 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 II, Division of Nuclear Materials Safety, Nuclear Material Licensing/Inspection Branch, 101 Marietta Street, Suite 2900, Atlanta, Georgia 30323. 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.
- D. The licensee is authorized to collect leak test samples for analysis by the National Institute of Science and Technology (NIST) or tests for leakage and/or contamination shall be performed by persons specifically licensed by the Commission or an Agreement State to perform such services.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number 45-23090-01

Docket or Reference Number 45-28770

Amendment No. 6

(cont.)

CONDITIONS

15. Sealed sources containing licensed material shall be removed from moisture density gauges only by Terry Mitchell, the manufacturer or other persons specifically licensed by the Commission or an Agreement State to perform such services.
16. 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."
17. 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. (Note: Only those inventory records generated after the date of this license shall be maintained in accordance with this condition.)
18. The licensee shall maintain records of information important to safe and effective decommissioning at location specified in Condition 10 pursuant to the provisions of 10 CFR 30.35(g) until this license is terminated by the Commission.
19. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material to quantities below the minimum specified 10 CFR 30.35(d) for establishing decommissioning financial assurance.
20. Each portable nuclear gauge shall have a lock or outer locked container designed to prevent unauthorized or accidental removal of the sealed source from its shielded position. The gauge or its container must be locked when in transport, storage or when not under the direct surveillance of an authorized user.
21. Any cleaning, maintenance, or repair of the gauge(s) that requires removal of the source rod shall be performed only by the manufacturer or by other persons specifically licensed by the Commission or an Agreement State to perform such services.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number 45-23090-01

Docket or Reference Number 850-28770

Amendment No. 6

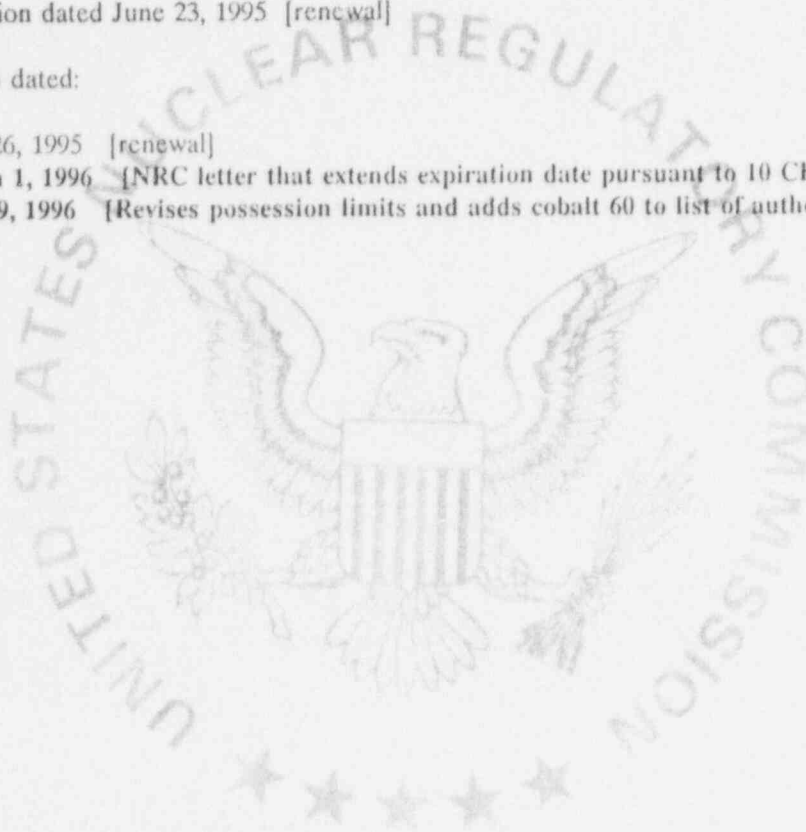
CONDITIONS

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 June 23, 1995 [renewal]

B. Letter(s) dated:

- June 26, 1995 [renewal]
- March 1, 1996 [NRC letter that extends expiration date pursuant to 10 CFR 30.36]
- July 29, 1996 [Revises possession limits and adds cobalt 60 to list of authorized isotopes.]



FOR THE U.S. NUCLEAR REGULATORY COMMISSION

EARL G. WRIGHT

DATE

AUG 19 1996

BY

Earl G. Wright

Region II, Division of Nuclear Materials Safety
101 Marietta Street, N.W., Suite 2900
Atlanta, GA 30323-0199

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Compton
8/20/96

BETWEEN:

License Fee Management Branch, ARM
and
Regional Licensing Sections

: (FOR LFMS USE)
: INFORMATION FROM LTS
: -----
:
: Program Code: 03121
: Status Code: 0
: Fee Category: EX 3M
: Exp. Date: 20050731
: Fee Comments: V
: Decom Fin Assur Req'd: N
:

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED

Applicant/Licensee: TRANSPORTATION, DEPARTMENT OF
Received Date: 960801
Docket No: 3028770
Control No.: 257141
License No.: 45-23090-01
Action Type: Amendment

2. FEE ATTACHED

Amount: _____
Check No.: _____

3. COMMENTS

Signed _____
Date _____

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

1. Fee Category and Amount: _____

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

Amendment _____
Renewal _____
License _____

3. OTHER _____

Signed _____
Date _____

AUG 20 1996

U.S. Department of Transportation
Federal Highway Administration
ATTN: Charles J. Nemmers, P.E.
Director, OERD
FHWA-HNR-30, 6300 Georgetown Pike
McLean, Virginia 22101

Dear Mr. Nemmers:

SUBJECT: TRANSMITTAL AND EXPLANATION OF MATERIALS LICENSE
(REFERENCE CONTROL NO. 257141; DOCKET NO. 030-28770)

Enclosed is Amendment No. 6 to License No. 45-23090-01 issued in response to your letter dated July 29, 1996. Revisions to your license are printed in **BOLD** typeface. Please review this document carefully and be sure that you understand all of its provisions.

Please note that Sodium 22 is not regulated by the Nuclear Regulatory Commission, therefore, has not been added to your license.

If you have questions concerning your license, please call me at (404) 331-5617.

Sincerely,

EARL G. WRIGHT
Senior License Reviewer
Division of Nuclear Materials Safety

Enclosure:
Amendment No. 6

OFFICE	DNMS	DNMS				
SIGNATURE	<i>EGW</i>					
NAME	EGWright	CMHosey				
DATE	08 / 19 / 96	08 / / 96	08 / / 96	08 / / 96	08 / / 96	08 / / 96
COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY

DOCUMENT NAME: G:\DRSS\NMLS\LICLTR\257141.egw



U.S. Department
of Transportation
**Federal Highway
Administration**

Research and Development

Turner-Fairbank Highway
Research Center
6300 Georgetown Pike
McLean, Virginia 22101-2296

July 29, 1996

Refer to: HNR-30

Nuclear Materials Licensing Section
U.S. Nuclear Regulatory Commission, Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323-0199

Re: Amendment to Materials License 45-23090-01

Dear Sirs:

We are planning a new research program using several new sealed radioisotope sources in our laboratory and therefore request the following in an amendment to the subject materials license:

1. Add Items E and F under Sections 6, 7, and 8, as shown below:

<u>Element and Mass Number</u>	<u>Chemical and/or Physical Form</u>	<u>Maximum Amount</u>
E. Cobalt 60	Sealed gamma source registered pursuant to 10 CFR 32.210 or an equivalent Agreement State regulation.	No single source to exceed 3.7 GBq (100 mCi), and 37 GBq (1 Ci) total.
F. Sodium 22	Sealed source registered pursuant to 10 CFR 32.210 or an equivalent Agreement State regulation.	No single source to exceed 3.7 MBq (100 µCi), and 37 MBq (1 mCi) total.

2. Change Item D under Section 8 to read "No single source to exceed 370 MBq (10 mCi), and 740 MBq (20 mCi) total."
3. Change the first line under Section 9 from "A. and B." to "A., B., D., E., and F."

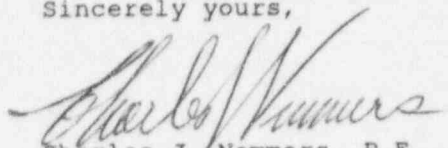
All other terms of our June 26, 1995, application letter and of Amendment 5 to the license would remain the same. The proposed change would permit us to develop prototype devices using Cf-252, Co-60, and Na-22 sources to measure the composition and/or density of various highway materials.

In addition to the above changes, Amendment 5 (which renewed this license through July 31, 2000) has a number of errors which we would like corrected in the next amendment. These are discussed in the Enclosure to this letter.

257141

If you have any questions about this application, Dr. Terry Mitchell, our Radiation Safety Officer, can be reached at (703) 285-2434.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Charles J. Nemmers".

Charles J. Nemmers, P.E.
Director, Office of Engineering
Research and Development

Enclosure

257141

ENCLOSURE
Errors in Amendment 5 to
NRC License 45-23090-01
and Suggested Corrections

— should be removed; [] should be added.

1. Section 2: Per our 6-26-95 renewal application letter, our organizational name has been changed: "Office of Engineering ~~and Highway Operations~~ Research and Development"
2. Section 7:
 - Item 7A should read "Sealed gamma or neutron source . . ."
 - Item 7B should read "Sealed gamma source . . ."
 - Item 7C should read "Sealed gamma or neutron source . . ."
3. Section 8:
 - Item 8B should read ". . . 18.5 GBq (500 mCi), and 37 GBq (2-1 Ci) total."
 - Item 8C should read ". . . 37 GBq (1 Ci) total."
 - Item 8D (prior to the change proposed in this letter) should have read ". . . to exceed 2.2 MBq (60 µCi), and 37 MBq (1 mCi) total."
4. Section 9, 1. 3: Should read: "B., C. and D. Sealed sources contained in ~~compatible commercial~~ portable gauging devices . . ."