NRC FORM 374

U.S. NUCLEAR REGULATORY COMMISSION

Amendment No. 17

MATERIALS LICENSE

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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 the letter dated January 11, 1999
1. Battelle Memorial Institute Battelle Columbus Operation 2. 505 King Avenue Columbus, OH 43201-2693	3. License number SNM-7 is amended in its entirety as follows: 4. Expiration date April 30, 1988 (on timely renewal) 5. Docket No. 070-00008 Reference No.

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
West Jefferson Site		
A. Uranium enriched in the U-235 isotope - Irradiated	A. Any	A. 125 grams of contained U-235 plus the associated and unseparated plutonium
B. Uranium enriched in the U-235 isotope - Unirradiated	B. Any	B. 20 grams of contained U-235
C. Uranium enriched in the U-235 isotope -Unirradiated	C. Plated/Sealed Sources	C. 1 gram of U-235 total
D. Plutonium (any principal isotope Pu-236-244)	D. Any	D. 0.1 gram total
E. Plutonium (Pu-238 principal isotope)	E. Solid Oxide, with multiple constrainments	E. 10.3 grams
F. Plutonium (Pu-239 principal isotope)	F. Solid Metal or Oxide, with multiple constrainments	F. 17.0 grams
G. Neptunium-237	G. Sealed Source	G. 1.0 microcurie
H. Plutonium (Pu-238 principle isotope)	H. PuBe Source	H. 0.053 grams
I. Plutonium (PU-238 principal isotope)	I. Solid Scrap	I. 3.4 grams
J. Plutonium (Pu-239 principal isotope)	J. Solid Scrap	J. 3.0 grams

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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
K. Uranium 232	K. Any	K. 0.99 grams
L. Uranium 233	L. Any	L. 0.99 grams
M. Uranium 234	M. Any	M. 0.99 gram
N. Uranium 235	N. Any	N. 0.99 grams
O. Plutonium 236	O. Any	O. 0.04 micrograms
P. Plutonium 238	P. Any	P. 0.6 micrograms
Q. Plutonium 239	Q. Any	Q. 82.0 micrograms
R. Plutonium 240	R. Any	R. 22.0 micrograms
S. Plutonium 242	S. Any	S. 6.4 micrograms
T. Any byproduct material	T. Irradiated fuel material, activated reactor materials and components	T. 50,000 curies total, not more than 5,000 curies of any one radioisotope (excluding Items 6.U. through 6.II. below)
U. Hydrogen-3	U. Any	U. 500 curies
V. Polonium-210	V. Any	V. 500 curies
W. Californium-252	W. Any	W. 500 curies
X. Sulfur-35	X. Gas	X. 1,000 curies
Y. Chlorine-36	Y. Gas	Y. 1,000 curies
Z. Iodine-131	Z. Any	Z. 1,000 curies
AA. Iodine-129	AA. Any	AA. 60 curies
BB. Cobalt-60	BB. Any	BB. 5,000 curies
CC. Cesium-137	CC. Any	CC. 5,000 curies
DD. Strontium-90	DD. Any	DD. 5,000 curies
EE. Carbon-14	EE. Any	EE. 2 curies
FF. Krypton-85	FF. Gas	FF. 500 millicuries

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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
GG. Americium-241	GG. Any	GG. 10 millicuries
HH. Nickel-63	HH. Any	HH. 600 millicuries
II. Any byproduct material	II . Any	II. 500 millicuries total not to exceed 100 millicuries per radionuclide
King Avenue Site		
JJ. .Uranium (enriched in U-235 isotope, irradiated)	JJ. residual contamination	JJ. 10 micrograms of contained U-235 plus the associated and unseparated plutonium and mixed fission products
KK. Any byproduct material	KK. Any	KK. 500 curies total, not more than 35 curies of any one radioisotope
West Jefferson and King Avenue Sites		
LL. Any Source Material	LL. Any	LL. 50 kilograms
Temporary Job sites		
MM. Nickel-63	MM. Sealed sources registered pursuant to 10 CFR 32.210 and incorporated into gas chromatograph and/or aerosol/airborne contaminant gas and vapor detector as specified in Item 10.	MM.. 600 millicuries total. No single source to exceed 40 millicuries.
NN. Americium-241	NN. Sealed sources registered pursuant to 10 CFR 32.210 and incorporated into gas chromatograph and/or aerosol/airborne contaminant gas and vapor detector as specified in Item 10.	NN. 500 millicuries total. No single source to exceed 50 millicuries.

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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
OO. Hydrogen-3	OO. Titanium tritide sources registered pursuant to 10 CFR 32.210 and incorporated into gas chromatograph and/or aerosol/airborne contaminant gas and vapor detector as specified in Item 10.	OO. 3 curies total. No single source to exceed 200 millicuries.
PP. Americium-241	PP. Sealed sources registered pursuant to 10 CFR 32.210 and incorporated into gauging devices as specified in Item 10.	PP. 400 millicuries total. No single source to exceed 100 millicuries.
QQ. Cesium-137	QQ. Sealed sources registered pursuant to 10 CFR 32.210 and incorporated into gauging devices as specified in Item 10.	QQ. 200 millicuries total. No single source to exceed 50 millicuries.
RR. Americium-241	RR. Sealed source (CPN Model No. 131)	RR. One source not to exceed 50 millicuries

9. Authorized places of Use:

A. License materials may be used and stored in buildings and facilities approved by the licensee's Radiation Safety Committee, at sites indicated above under Items 6, 7, and 8. The licensee will submit final status surveys for buildings or areas which are to be released for unrestricted use via a license amendment.

B. Licensed materials listed in Subitems MM., NN., OO., PP., Q. and RR. may be used at temporary job sites of the licensee anywhere in the United States where the U.S. Nuclear Regulatory Commission maintains jurisdiction for regulating the use of licensed material. The possession of these devices are in addition to devices authorized under Subitem KK.

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CONDITIONS

10. Authorized use:

A. For use in accordance with statements, representations, and conditions contained in the following portions of the licensee's application for renewal (BCL Document 1081) submitted by letter dated October 23, 1981, except as may be modified by the conditions of this license:
   1. Pages vi through xi, Introduction;
   2. Part I, License Conditions;
   3. Appendix A, Radiological Safety Committee Charter; and
   4. Letters dated June 29, 1994, August 19, 1994, July 6, 1995 (excluding Item 1), and August 3, 1995 (excluding Item 1)..

B. Items E, F, I and J are authorized for storage only.

C. The principal use for items A. and B. under Conditions 6, 7, and 8, are as residual contamination at the West Jefferson North Site.

D. Item U .may be used for tritium targets as indicated in letter dated July 21, 1999, and as residual material arising from previous operations.

E. The principal uses for item L. under Conditions 6, 7, and 8 are use as residual contamination at BMI's King Avenue and West Jefferson facilities.

F. Item H. under Conditions 6, 7, and 8 have been transferred to the license from DOE inventory to be used for calibration.

G. Items K. through S.. are for research and development, and support of Radiological Laboratory Operation as described in letters dated November 17, 1994, March 21, 1995, and October 20, 1997.

H. Item FF. is for storage only pending disposal.

I. Items GG., HH., and II.. are for research and development activities as described in letters dated June 29, 1994 August 19, 1994, and March 21, 1995.

J. Item RR. is for use in a Campbell Pacific Nuclear Model 503 portable moisture/density gauge.

K. Item EE. is to be used for research and development as described in 10 CFR Part 30, Section 30.4.

L. Items MM., through OO. of Items 6, 7, and 8 are for use in compatible gas chromatograph devices and or aerosol/airborne contaminant gas and vapor devices which have been registered pursuant to 10 CFR 32.210 and distributed in accordance with an NRC or Agreement State specific license to persons specifically licensed by the NRC to receive, possess and use the devices.

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M. Items PP. through RR. are for use in compatible moisture/density gauges which have been registered pursuant to 10 CFR 32.210 and distributed in accordance with an NRC or Agreement State specific license to persons specifically licensed by the NRC to receive, possess and use the devices

11. The Radiation Safety Officer for this license is Craig E. Jensen.

12. Notwithstanding Table III and Table IV presented in Part I, Sections 3.4 and 3.5, for the release of materials, equipment, and facilities for unrestricted use, the licensee shall adhere to the provisions of the attached "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use of Termination of Licenses for Byproduct, Source, or Special Nuclear Material," dated April 1993.

13. Item 10 above incorporates Appendix A (Radiological Safety Committee Charter) of the licensee's renewal application (BCL-1081) as a condition of the license to clarify and define more fully administrative procedures for review, approval and audit of activities covered by the license, as described in Section 1.3 and Section 2.0 of Part I. The licensee may make revision to the provisions of Appendix A, based upon written evaluation of the changes, without NRC approval if it is determined that such changes will not decrease the effectiveness of the Committee in carrying out its functions. Revisions to the Charter and supporting evaluations shall be submitted to the Director, Division of Fuel Cycle Safety and Safeguards, NRC, with a copy to the Administrator, Region III Office, NRC, within 60 days following such changes.

14. In addition to the subjects identified in Section 5.1.1 Appendix A, the annual review and appraisal of facilities shall include an assessment of occupational radiation exposures and releases of radioactive material over the past year with regard to maintaining such exposures and releases as low as is reasonably achievable, as stated in Section 20.1101, 10 CFR Part 20.

15. Sections 2.1 and 3.10, Part I refer to provisions for training and periodic retraining of employees, as appropriate and related to employee work assignments with radioactive and fissionable materials. Such training shall be conducted, as appropriate, for new employees and prior to initiating new operations approved by the Radiological Safety Committee and retraining shall be conducted on topics appropriate to employee work assignments at least annually. Documentation of such training and retraining shall be maintained.

16. Section 5.0, Part I, of the licensee's renewal application incorporates the text of previous amendments issued by NRC to Special Nuclear Material License No. SNM-7 and Byproducts Materials License No. 34-06854-05 covering decontamination and decommissioning plans applicable to the Battelle Hot Cell laboratory. It is hereby affirmed that the provisions to these decontamination and decommissioning plans, including financial arrangements, continue in effect under this renewed license.

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17. At such time that facilities covered by this license are decontaminated for proposed unrestricted release (in accordance with Annex C), the licensee shall submit a report that identifies the facilities where radioactive materials were used and stored, or disposed on the site. The report shall briefly describe operations conducted and radioactive materials used in the facilities and shall assess the results of the decontamination activities. The report shall provide the basis for unrestricted release of the facilities and the site, including a description of sampling and survey methods and instrumentation used, and shall include final contamination survey data for the facilities and grounds. The licensee may segment the report to obtain release of certain areas of facilities or individual structures if it is demonstrated that ongoing activities in other areas will not lead to recontamination of the area or structure proposed for release.

18. Moisture density gauges containing licensed materials shall only be used by, or under the supervision and in the physical presence of, individuals who have received the training described in letters dated June 29, 1994 and August 19, 1994, or by the device manufacturer or persons licensed to provide such training, and have been approved in writing by the Radiation Safety Officer. Leak test may be performed by individuals approved by the Radiation Safety Officer.

19. When performing tests at temporary job sites, the authorized user shall not leave the moisture/density gauge unattended. Upon completion of tests the device shall be locked in the licensee's vehicle or a secure building to prevent unauthorized use, loss, or theft.

20. The licensee is authorized to transport the portable moisture/density gauge only in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."

21. 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.

22. Sealed byproduct material sources shall be subject to the leak testing and actions specified in the attached procedure titled "License Condition for Leak Testing Sealed Byproduct Material Sources," dated April 1993. Sealed plutonium sources shall be subject to the leak testing and actions specified in the attached procedure titled "License Condition for Leak Testing Sealed Plutonium Sources," dated April 1993.

23. 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 received from another person shall not be put into use until tested.

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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

(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 microcuries of radioactive material on the test sample. If the test reveals the presence of 0.005 microcuries or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission in accordance with 10 CFR 30.50(b)(2), 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, IL 60532, ATTN.: Director, Division of Nuclear Materials Safety. The report shall specify the source involved, the test results, and corrective action taken.

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.

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24. 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. Letters dated October 11, 1995 (with attachments), September 29, 1997, two letters dated October 20, 1997, December 24, 1997, December 30, 1997, September 15, 1998, January 11, 1999, January 26, 1999, February 5, 1999, February 26, 1999, April 12, 1999, May 14, 1999, and May 21, 1999.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date JUL 21 1999

By George M. McCann
George M. McCann
Materials Licensing Branch
Region III

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