

Form AEC-313
(8-64)
10 CFR 30

UNITED STATES ATOMIC ENERGY COMMISSION
APPLICATION FOR BYPRODUCT MATERIAL LICENSE

Form approved
Budget Bureau No. 38-R0027

INSTRUCTIONS.—Complete Items 1 through 16 if this is an initial application or an application for renewal of a license. Information contained in previous applications filed with the Commission with respect to Items 8 through 15 may be incorporated by reference provided references are clear and specific. Use supplemental sheets where necessary. Item 16 must be completed on all applications. Mail two copies to: U.S. Atomic Energy Commission, Washington, D.C., 20545, Attention: Isotopes Branch, Division of Materials Licensing. Upon approval of this application, the applicant will receive an AEC Byproduct Material License. An AEC Byproduct Material License is issued in accordance with the general requirements contained in Title 10, Code of Federal Regulations, Part 30, and the Licensee is subject to Title 10, Code of Federal Regulations, Part 20.

1. (a) NAME AND STREET ADDRESS OF APPLICANT. (Institution, firm, hospital person, etc. Include ZIP Code.)		(b) STREET ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED. (If different from 1(a). Include ZIP Code.)	
Commander Pine Bluff Arsenal Pine Bluff, Arkansas 71611		Same	
2. DEPARTMENT TO USE BYPRODUCT MATERIAL		3. PREVIOUS LICENSE NUMBER(S). (If this is an application for renewal of a license, please indicate and give number.)	
Product Assurance Directorate and Directorate of Engr & Technology		03-02868-04 Request amendment	
4. INDIVIDUAL USER(S). (Name and title of individual(s) who will use or directly supervise use of byproduct material. Give training and experience in Items 8 and 9.)		5. RADIATION PROTECTION OFFICER. (Name of person designated as radiation protection officer if other than individual user. Attach resume of his training and experience as in Items 8 and 9.)	
Halbert G. Deadman, Analytical Chem K. F. Conrad, Jr., Analytical Chem Jerry Gilmore, Analytical Chemist		Frank L. Cumnock, Radiation Protection Officer Thomas L. Ashcraft, Alternate (See Supplement #3)	
6. (a) BYPRODUCT MATERIAL (Elements and mass number of each.)	(b) CHEMICAL AND/OR PHYSICAL FORM AND MAXIMUM NUMBER OF MILLICURIES OF EACH CHEMICAL AND/OR PHYSICAL FORM THAT YOU WILL POSSESS AT ANY ONE TIME. (If sealed source(s), also state name of manufacturer, model number, number of sources and maximum activity per source.)		
Nickel 63	Tracor Corporation, Model No. 220, Gas Chromatograph, Serial No. 720066, one sealed source, 15mCi, Serial No. 2726		
Nickel 63	Hewlett Packard, Model No. 5713A, Gas Chromatograph, Serial No. 1344A02311, one sealed source, 15mCi, Serial No. H-0360		
Nickel 63	Hewlett Packard, Model No. 5713A, Gas Chromatograph, Serial No. 1344A0210, one sealed source, 15mCi, Serial No. H-1355		
Nickel 63	Hewlett Packard, Model No. 5736A, Gas Chromatograph, Serial No. 1726A90813, one sealed source, 15mCi, Serial No. H-1318		
Nickel 63	Hewlett Packard, Model No. 5712A, Gas Chromatograph, Serial No. 1531A04753, one sealed source, 15mCi, Serial No. H-0859		

7. DESCRIBE PURPOSE FOR WHICH BYPRODUCT MATERIAL WILL BE USED. (If byproduct material is for "human use," supplement A (Form AEC-313a) must be completed in lieu of this item. If byproduct material is in the form of a sealed source, include the make and model number of the storage container and/or device in which the source will be stored and/or used.)

By-product material listed in 6(b) is an integral part of the electron capture detectors. The material will be used for detecting pesticides, herbicides, chemical agents and other halogenated hydrocarbons.

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NMS LIC30
03-02868-04 PDR

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TRAINING AND EXPERIENCE OF EACH INDIVIDUAL NAMED IN ITEM 4 (Use supplemental sheets if necessary)

B. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (Circle answer)		FORMAL COURSE (Circle answer)	
			Yes	No	Yes	No
a. Principles and practices of radiation protection	See Suppl #1 & #2 for Resume of individual named in Item 4 and Supplement #3 for Resume of individual named in Item 5.		Yes	No	Yes	No
b. Radioactivity measurement standardization and monitoring techniques and instruments			Yes	No	Yes	No
c. Mathematics and calculations basic to the use and measurement of radioactivity			Yes	No	Yes	No
d. Biological effects of radiation			Yes	No	Yes	No

9. EXPERIENCE WITH RADIATION. (Actual use of radioisotopes or equivalent experience.)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
Same as above				

10. RADIATION DETECTION INSTRUMENTS. (Use supplemental sheets if necessary.)

TYPE OF INSTRUMENTS (Include make and model number of each)	NUMBER AVAILABLE	RADIATION DETECTED	SENSITIVITY RANGE (mr/hr)	WINDOW THICKNESS (mg/cm ²)	USE (Monitoring, surveying, measuring)
PDR 27	1	Beta & Gamma	0- 500	0.0005" MICA	Surveying
PDR-54	1	Alpha	0- 100,000	1.5	Surveying
PDR-60	1	Alpha	0-2,000,000	1.5	Surveying
Victoreen 440	1	X-ray	0- 300	1/4 mil	Surveying

11. METHOD, FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED ABOVE.

See attached Supplement #4

12. FILM BADGES, DOSIMETERS, AND BIO-ASSAY PROCEDURES USED. (For film badges, specify method of calibrating and processing, or name of supplier.)

Dosimeter Film Badge Service from Lexington-Blue Grass Depot Activity processed monthly. Bio-assay procedures are available through the Surgeon General.

INFORMATION TO BE SUBMITTED ON ADDITIONAL SHEETS IN DUPLICATE

13. **FACILITIES AND EQUIPMENT.** Describe laboratory facilities and remote handling equipment, storage containers, shielding, fume hoods, etc. Explanatory sketch of facility is attached. (Circle answer) Yes No

See attached Supplement #5

14. **RADIATION PROTECTION PROGRAM.** Describe the radiation protection program including control measures. If application covers sealed sources, submit leak testing procedures where applicable, name, training, and experience of person to perform leak tests, and arrangements for performing initial radiation survey, servicing, maintenance and repair of the source.

See attached Supplement #6

15. **WASTE DISPOSAL.** If a commercial waste disposal service is employed, specify name of company. Otherwise, submit detailed description of methods which will be used for disposing of radioactive wastes and estimates of the type and amount of activity involved.

None anticipated

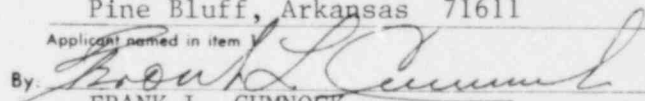
CERTIFICATE (This item must be completed by applicant)

16. THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATE ON BEHALF OF THE APPLICANT NAMED IN ITEM 1, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PART 30, AND THAT ALL INFORMATION CONTAINED HEREIN, INCLUDING ANY SUPPLEMENTS ATTACHED HERETO, IS TRUE AND CORRECT TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

Commander, Pine Bluff Arsenal
Pine Bluff, Arkansas 71611

Applicant named in item 1

Date 15 June 1981

By: 
FRANK L. CUMNOCK
Radiation Protection Officer

Title of certifying official

WARNING.—18 U. S. C., Section 1001, Act of June 25, 1948, 62 Stat. 749, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

SUPPLEMENT #1

Resume of Training and Experience of User:

1. Halbert G. Deadman (Analytical Chemist):

a. Formal Course, Radiological Safety Course #2, Fort McClellan, Alabama, December 1961, Ten (10) days, eighty (80) hours.

b. Radiological Monitoring Instructor Course, Battle Creek, Michigan, April 1964, forty (40) hours.

c. Radiological Defense Officer, Battle Creek, Michigan, April 1964, forty (40) hours.

d. Mr. Deadman is the Disaster Control Officer (for Civil Defense), Jefferson County, Arkansas. His appointment began in 1965, twelve (12) years.

2. K. F. Conrad, Jr. (Analytical Chemist): Formal Course, Radiological Safety Course #2, Fort McClellan, Alabama, September 1965, ten (10) days, eighty (80) hours.

3. Jerry Gilmore, (Analytical Chemist): MS Chemistry, Northeast Louisiana University, Ruston, Louisiana.

SUPPLEMENT #2

Resume of Experience of User:

1. Halbert G. Deadman (Analytical Chemist):

Isotope: Co⁶⁰

Maximum Amount: 30 mCi

Where Experience was gained: Jefferson County Civil Defense

Duration of Experience: Twelve years

Type of Use: Training for Civil Defense

Isotope: SrY⁹⁰

Maximum Amount: 30mCi

Where Experience was gained: Pine Bluff Arsenal

Duration of Experience: Seven Years

Type of Use: TS 784/PD Radiac Calibrator

2. K. F. Conrad, Jr. (Analytical Chemist):

Isotope: SrY⁹⁰

Maximum Amount: 30mCi

Where Experience was gained: Pine Bluff Arsenal

Duration of Experience: Seven Years

Type of Use; TS 784/PD Radiac Calibrator

3. Jerry Gilmore (Analytical Chemist): Physical Chemistry, 10 hours, Northeast Louisiana University; Atomic Physics, 3 hours, Northeast Louisiana University

SUPPLEMENT #3

Resume of Training and Experience of Frank L. Cumnock (RPO) and Thomas L. Ashcraft (Alternate RPO):

1. Frank L. Cumnock successfully completed Course No. 212, Occupational Radiation Protection, 80 course hours, Radiological Health Laboratory, U.S. Public Health Service, Rockville, MD, 13 Dec 68. He has been Radiation Protection Officer, Pine Bluff Arsenal, Pine Bluff, Arkansas 71611, for ten years.

2. Thomas L. Ashcraft is a chemist with over 25 years experience related to material characteristics and quality and is listed in American Men of Science. Training related to Radiological Safety:

a. Radiological Safety Course and Radiological Protection Officer Training, Ft. McClellan, Ala., 80 hours, 11-04-60.

b. Inspector of Radiological Material, Army Chemical Center, Md, 11 Dec 61.

c. Occupational Radiation Protection, National Center for Radiological Health, 80 hours, Rockville, Md.

SUPPLEMENT #4

Method, Frequency, and Standards used in calibrating Detection Instruments:

1. The PDR 27 is calibrated every 3 months if it is to be used for radiation protection and every 8 months if used for other purposes. This instrument is calibrated with the AN/UDM2 by our Quality Inspection Specialist, who is a Certified Radiac Calibrator, having completed 40 hours OJT in proper handling of Radiac Calibrators AN/UDM2 and AN/UDM6.

2. The PDR-54 and PDR-60 are calibrated every 3 months if used for radiation protection and every 8 months if used for other purposes. The AN/UDM6 is used for this purpose by our Quality Inspection Specialist.

3. The Victoreen 440 is sent to Lexington-Blue Grass Depot Activity for calibration. At this time, the instrument is calibrated only on a request basis.

SUPPLEMENT #5

Description of Facilities and Equipment:

1. The Laboratory Room in which the instrument described in 6b and 7 will be located is constructed on a reinforced concrete floor, sheetrock and concrete block walls, and celetex (fiberboard) ceiling. Walls are painted with epoxy paint, and floor is covered with vinyl tile.

2. The instrument is floor mounted and will be positioned approximately thirty (30) inches from any wall to allow for ease of servicing and radiation leak testing. Radiation warning signs are placed on the equipment in accordance with AR 385-30, and Title 10, Code of Federal Regulation, Part 20.

SUPPLEMENT #6

Radiation Protection Program:

1. A Radiation Control Committee has been established by Pine Bluff Arsenal Regulation No. 15-4, 5 May 81, and this committee is responsible for staff supervision of all Pine Bluff Arsenal's radiation activity and to assure compliance with federal, state and local regulations. All wipe testing is performed by Mr. Charles E. Holmes, Quality Inspection Specialist, and Mr. Holmes has successfully completed the following courses:

a. Ionizing Radiation Safety Course, Pine Bluff Arsenal, December 1958, 16 hours.

b. Basic Radiological Health, Phase I, HEW, NCRH, Rockville, Md, July 1969, 80 hours.

c. Ionizing Radiation Safety Review, Pine Bluff Arsenal, April 1970, 13 hours.

2. Mr. Holmes has been an authorized radiation worker for 21 years, with experience in handling the following ionizing radiation sources:

a. 184 mCi RA²²⁶ (300 Sealed Sources), used in determining liquid level, 5 years.

b. 1.4 micro curies Pu²³⁹ AN/UDM-6 Calibrator, 5 years.

c. 30 Ci Kr⁸⁵, Munition Leak Detector, 6 years.

d. 120 mCi SrY⁹⁰, AN/UDM2 Calibrator, 5 years.

e. One each Industrial X-ray Units, 100 KVP @ 5 ma for determining height of fill of munitions, 3 years.



DEPARTMENT OF THE ARMY
US ARMY IONIZING RADIATION DOSIMETRY CENTER
LEXINGTON, KENTUCKY 40511

DRSMI-MCI-DCN

17 April 1981

SUBJECT: Wipe Test of Radioactive Sources

Commander
Pine Bluff Arsenal
ATTN: SARPB-SF
Pine Bluff, Arkansas 71611

The wipe test made on the radioactive sources at your installation on 8 April 1981 indicate the following amounts of removable contamination:

<u>SWAB NO.</u>	<u>MICROCURIES</u>
2726	0.0
H1318	.00007
H0859	0.0
H0360	0.0
H1355	0.0

NOTE: Minimum detectable activity (MDA) of ^{63}Ni is .000002 microcuries.

Joseph M. King
JOSEPH M. KING
C, US Army Ionizing Radiation
Dosimetry Center

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