Inst. 10985

70-661

NRC Form 313 I (12-81) 10 CFR 30 — U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR BYPRODUCT MATERIAL LICENSE
INDUSTRIAL

See attached instructions for details.

Completed applications are filed in duplicate with the Division of Fuel Cycle and Material Safety, Office of Nuclear Material Safety, and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555 or applications may be filed in person at the Commission's office at 1717 H Street, NW, Washington, D. C. or 7915 Eastern Avenue, Silver Spring, Maryland.

1. APPLICATION FOR: *(Check and/or complete as appropriate)*

	a. NEW LICENSE
	b. AMENDMENT TO: LICENSE NUMBER
X	c. RENEWAL OF: LICENSE NUMBER SNM-608

2. APPLICANT'S NAME *(Institution, firm, person, etc.)*
West Virginia Institute of Technology
Montgomery, WV 25136
TELEPHONE NUMBER: AREA CODE – NUMBER EXTENSION
(304) 442-3071

3. NAME AND TITLE OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION
Keith R. Honey, Ph.D., Professor/Chairman
TELEPHONE NUMBER: AREA CODE – NUMBER EXTENSION
(304) 442-3132

4. APPLICANT'S MAILING ADDRESS *(Include Zip Code)*
(Address to which NRC correspondence, notices, bulletins, etc., should be sent.)
Dr. Keith R. Honey, Chairman
Department of Physics
West Virginia Institute of Technology
Montgomery, WV 25136

5. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED *(Include Zip Code)*
Department of Physics
West Virginia Institute of Technology
Montgomery, WV 25136

(IF MORE SPACE IS NEEDED FOR ANY ITEM, USE ADDITIONAL PROPERLY KEYED PAGES.)

6. INDIVIDUAL(S) WHO WILL USE OR DIRECTLY SUPERVISE THE USE OF LICENSED MATERIAL
(See Items 16 and 17 for required training and experience of each individual named below)

	FULL NAME	TITLE
a.	Keith Ray Honey	Professor, Chairman
b.	Roderick Wayne Wilson	Associate Professor
c.		

Rec'd
Date 12/3/84 II
Log Dec. 19
By Brown
Orig To
Action Compl. 12/10/84

7. RADIATION PROTECTION OFFICER
Roderick W. Wilson

Attach a resume of person's training and experience as outlined in Items 16 and 17 and describe his responsibilities under Item 15.

8. LICENSED MATERIAL

LINE NO.	A ELEMENT AND MASS NUMBER	B CHEMICAL AND/OR PHYSICAL FORM	C NAME OF MANUFACTURER AND MODEL NUMBER *(If Sealed Source)*	D MAXIMUM NUMBER OF MILLICURIES AND/OR SEALED SOURCES AND MAXIMUM ACTIVITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME
(1)	Pu-Be	sealed neutron source (NUMEC)	Nuclear Materials Engineering Corp.	32 grams (2 curie)
(2)	Pu-Be	sealed neutron source (NUMEC)	Nuclear Materials Engineering Corp.	32 grams (2 curie)
(3)	Pu-Be	sealed neutron source (NUMEC)	Nuclear Materials Engineering Corp.	16 grams (1 curie)
(4)				

	E DESCRIBE USE OF LICENSED MATERIAL
(1)	All material in Item 8 is for instructional purposes. The material will be used for sub-critical reactor experiments and for neutron howitzer experiments.
(2)	8505290511 850508 PDR REG2 LIC70 SNM-0608
(3)	
(4)	

FEE EXEMPT State 10.11 (a)(9)
Licensee qualifies for exemption
FEE EXEMPT 2 4 5 13

9. STORAGE OF SEALED SOURCES

LINE NO.	CONTAINER AND/OR DEVICE IN WHICH EACH SEALED SOURCE WILL BE STORED OR USED. A.	NAME OF MANUFACTURER B.	MODEL NUMBER C.
(1)	Neutron Howitzer	Nuclear-Chicago Corp.	NH-3
(2)	Neutron Howitzer	Nuclear-Chicago Corp.	NH-3
(3)	Neutron Howitzer	Nuclear-Chicago Corp.	NH-3
(4)			

10. RADIATION DETECTION INSTRUMENTS

LINE NO.	TYPE OF INSTRUMENT A	MANUFACTURER'S NAME B	MODEL NUMBER C	NUMBER AVAILABLE D	RADIATION DETECTED (alpha, beta, gamma, neutron) E	SENSITIVITY RANGE (milliroentgens/hour or counts/minute) F
(1)	(See attached	sheets)				
(2)						
(3)						
(4)						

11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10

☒ a. CALIBRATED BY SERVICE COMPANY

NAME, ADDRESS, AND FREQUENCY

(See attached sheet)

☐ b. CALIBRATED BY APPLICANT

Attach a separate sheet describing method, frequency and standards used for calibrating instruments.

12. PERSONNEL MONITORING DEVICES

TYPE (Check and/or complete as appropriate.) A	SUPPLIER (Service Company) B	EXCHANGE FREQUENCY C
☐ (1) FILM BADGE ☐ (2) THERMOLUMINESCENCE DOSIMETER (TLD) ☒ (3) OTHER (Specify): Pocket dosimeters for detection of thermal neutrons, gamma, and x-radiation.	Dosimeter Corporation of America Cincinnati, OH 45242	☐ MONTHLY ☐ QUARTERLY ☒ OTHER (Specify): All dosimeters used for personnel monitoring will be repaired or replaced as needed.

13. FACILITIES AND EQUIPMENT (Check were appropriate and attach annotated sketch(es) and description(s).

☐ a. LABORATORY FACILITIES, PLANT FACILITIES, FUME HOODS (Include filtration, if any), ETC.

☒ b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING (fixed and/or temporary), ETC. (see attached sheet)

☒ c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC. (see attached sheet)

☐ d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC.

14. WASTE DISPOSAL

a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED

N/A

b. IF COMMERCIAL WASTE DISPOSAL SERVICE IS NOT EMPLOYED, SUBMIT A DETAILED DESCRIPTION OF METHODS WHICH WILL BE USED FOR DISPOSING OF RADIOACTIVE WASTES AND ESTIMATES OF THE TYPE AND AMOUNT OF ACTIVITY INVOLVED. IF THE APPLICATION IS FOR SEALED SOURCES AND DEVICES AND THEY WILL BE RETURNED TO THE MANUFACTURER, SO STATE.

The application is for sealed sources and they will be returned to the manufacturer at such time as disposal is deemed necessary or desired.

INFORMATION REQUIRED FOR ITEMS 15, 16 AND 17

Describe in detail the information required for Items 15, 16 and 17. Begin each item on a separate page and key to the application as follows:

15. RADIATION PROTECTION PROGRAM. Describe the radiation protection program as appropriate for the material to be used including the duties and responsibilities of the Radiation Protection Officer, control measures, bioassay procedures *(if needed)*, day-to-day general safety instruction to be followed, etc. If the application is for sealed source's also submit leak testing procedures, or if leak testing will be performed using a leak test kit, specify manufacturer and model number of the leak test kit.

16. FORMAL TRAINING IN RADIATION SAFETY. Attach a resume for each individual named in Items 6 and 7. Describe individual's formal training in the following areas where applicable. Include the name of person or institution providing the training, duration of training, when training was received, etc.

    a. Principles and practices of radiation protection.

    b. Radioactivity measurement standardization and monitoring techniques and instruments.

    c. Mathematics and calculations basic to the use and measurement of radioactivity.

    d. Biological effects of radiation.

17. EXPERIENCE. Attach a resume for each individual named in Items 6 and 7. Describe individual's work experience with radiation, including where experience was obtained. Work experience or on-the-job training should be commensurate with the proposed use. Include list of radioisotopes and maximum activity of each used.

18. CERTIFICATE

(This item must be completed by applicant)

The applicant and any official executing this certificate on behalf of the applicant named in Item 2, 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.

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.

a. LICENSE FEE REQUIRED *(See Section 170.31, 10 CFR 170)* NONE	b. CERTIFYING OFFICIAL *(Signature)* Keith R. Honey
	c. NAME *(Type or print)* Keith Ray Honey
(1) LICENSE FEE CATEGORY: Educational Institution	d. TITLE Professor and Chairman of Physics
(2) LICENSE FEE ENCLOSED: $ None	e. DATE November 26, 1984

ADDENDA

10. RADIATION DETECTION INSTRUMENTS

TYPE OF INSTRUMENT A	MANUFACTURER'S NAME B	MODEL NUMBER C	NUMBER AVAILABLE D	RADIATION DETECTED E	SENSITIVITY RANGE F
(1) Alpha Scintillation Probe	Eberline	AC-3-7	1	alpha	2×10^7 cpm per $\mu Ci/cm^2$
(2) Ion Chamber	Eberline	RO-2	1	beta, gamma, X	0-5, -50, -500, -5000 MR/h
(3) Neutron Rem Detector Model NRD	Eberline	RM-21	1	Fast neutrons	50 cpm per mrem/h
(4) Rate meter	The Nucleus	Model L	1	beta, gamma	0-500, -2000, -5000, -20,200, -50,000 cpm
(5) Single Channel Analyzer	The Nucleus	Model 2010	2		
(6) Scalar/Timer	The Nucleus	Model 500	1		
(7) Single Channel Analyzer Mimi-Scalar	Eberline	Model MS-2	1		
(8) Geiger-Muller Tubes			8	beta, gamma	
(9) Alarming Rate Meter/ Radiation Monitor	Eberline		1	neutrons, beta, gamma	
(10) Dosimeter	Dosimeter Corp.	Model 609	2	X, gamma	0-200 nR
(11) Dosimeter	Dosimeter Corp.	Model 862	2	Thermal neutrons	0-120 mrem
(12) Classmaster w/GM tube	Nuclear-Chicago	Model 1613	1	beta, gamma	
(13) Scalar	Nuclear-Chicago	Model 181B	1		
(14) Scalar	Nuclear-Chicago	Model 8770	3		
(15) Scalar	Canberra	Model 871	2		

(10. continued)

(16) Amplifier	Canberra	Model 816	2		
(17) Power Supply	Canberra	Model 3015	2		
(18) NAI (Tℓ) Scintillation Crystal (1 inch)			5		
(19) Neutron Probe	Nuclear-Chicago	Model DN3	1	neutrons	
(20) Alpha Scintillation Detector	Nuclear-Chicago	Model DS-205	2	alpha	
(21) Dosimeter	Nuclear-Chicago	Model NC-402	5	X, gamma	0-200 MR
(22) Dosimeter	Nuclear-Chicago	Model NC-401	4	thermal neutrons	0-120 mrem
(23) Dosimeter Charger	Dosimeter Corp.	Model 909	2		

APPLICATION FOR BYPRODUCT MATERIAL LICENSE

INDUSTRIAL

11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10

(a) Items (1), (2), (3), and (7) have all been purchased recently (August 20-22, 1984) from the Eberline Instrument Corporation, P.O. Box 3910, Boston, MA 02241. A copy of the CERTIFICATE OF COMPLIANCE and copies of the "Certificates of Calibration" for the appropriate items are attached.

Items (4), (5), (6), and (9) have all been purchased recently (August 20-22, 1984) from The Nucleus, P.O. Box R, Oak Ridge, TN 37830. Appropriate copies of the "Certificates of Calibration" are attached.

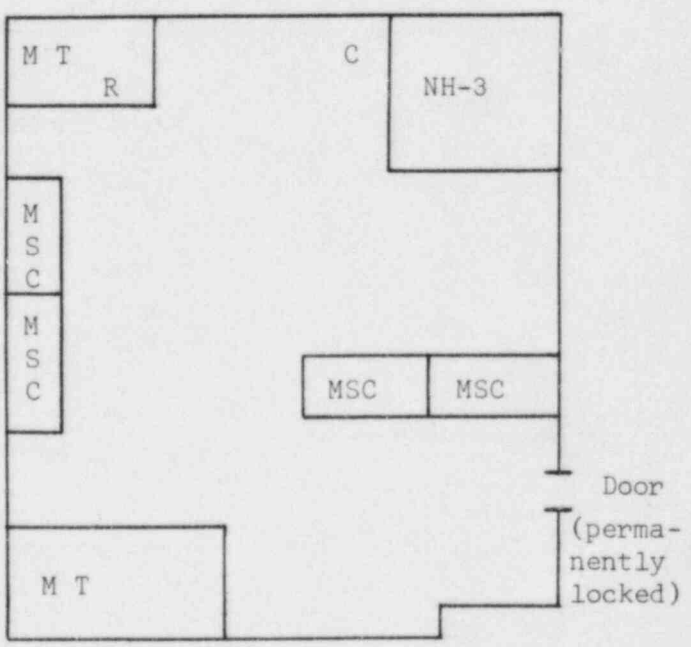
All other items requiring calibration are somewhat older in age and are either not in use at this time or are being used as survey instruments.

13. FACILITIES AND EQUIPMENT

(b) The five curies of Pu-Be currently held are stored in a Nuclear-Chicago Neutron Howitzer Model NH-3. The howitzer is stored in a permanently locked cabinet in Room 102 of Science Hall on the West Virginia Tech campus. There are two keys to the locked cabinet, one held by the Radiation Protection Officer and one held by the person named in Item 3.

Room 102, Science Hall

RH-3 = neutron howitzer
C = storage cabinet
R = remote handling equipment
M T = metal table
MSC = metal storage cabinets



Room 102, Science Hall, is currently used only as a storage area.

13. FACILITIES AND EQUIPMENT (continued)

(c) One remote handling device 1.07 m long for holding sealed sources. One set of tongs 0.92 m long for holding wipe paper during wipe test.

15. RADIATION PROTECTION PROGRAM

Day-to-day general safety procedures will include keeping the sealed sources stored as outlined in Item 13-b above. At such time as the sources are to be used, it will be the responsibility of the Radiation Protection Officer to ensure that radiation detection equipment capable of monitoring beta, gamma, x-, and neutron radiation levels is present in the working area.

Leak tests of the sealed sources will be performed each semester prior to the use of the sources. The leak test procedure is as follows: Filter paper moistened in ethyl alcohol is placed in a styrofoam cup which is, in turn, placed in a circular, lead radiation shield. The radiation shield is placed on top of the inner drum of the neutron howitzer. Also on top of this inner drum are a cadmium plate (61.0 cm x 30.7 cm x 0.1524 cm) and water-filled plastic jugs; these items are placed in such a way as to minimize the neutron flux (both fast and thermal) in the direction of the work area. A sealed source is then removed from the permanent storage port with the remote handling device (described in Item 13-c above) and is wiped on the filter paper. The sealed source is then placed in the transfer port. (To ensure that there be no difficulty in removing the sealed source from the transfer port, a cardstock paper tube closed at its lower end serves as a liner for the transfer port during the entire leak test procedure. The paper tube is left in place following the test.) The styrofoam paper cup containing the wiped filter paper is then removed from the radiation shield and placed so that no one in the work area can come in contact with it. A second styrofoam cup containing fresh filter paper is then placed in the radiation shield, and the second sealed sources is similarly removed from the permanent storage port, wiped, and placed in the transfer port. This procedure is then repeated for the third sealed source, the only difference being that after the third source has been wiped it is not placed in the transfer port but is returned directly to the permanent storage port. Each of the other sealed sources is then returned to the permanent storage port. The top of the inner drum, the inner wall surface, and the outer wall surface of the neutron howitzer are then also wiped with filter paper.

Each of the wiped filter papers is then counted with an Alpha Scintillation Probe (Eberline Model AC-3-7, as described in Item 10 above).

15. RADIATION PROTECTION PROGRAM (continued)

During the leak test, no one (other than the handler) is closer to the source than required by the length of the remote handling device. Approximately 1 m separates the body of the handler and the source at closest approach. The source is observed indirectly using a mirror conveniently placed on top of the inner drum of the neutron howitzer. Thus, the hand and arm are the only parts of the body of the handler receiving direct radiation during the entire procedure.

Only persons named in this application will perform the leak tests.

(Please refer to the attached report for results of the most recent leak test performed.)

Eberline
Thermo Electron CORPORATION
Post Office Box 2108
Santa Fe, New Mexico 87504-2108
(505) 471-3232 TWX: 910-985-0678

QUALITY CONTROL AND INSPECTION

SHIP TO

SHIPPING ORDER NO.

CUSTOMER ORDER NUMBER	PRIORITY RATING	CONTRACT NUMBER

DATE ENTERED	DATE SHIPPED	F.O.B.	PACKAGED BY	NO. PKGS.		VIA		CARRIER I.D. NUMBER
						☐ UPS ☐ PARCEL POST ☐ AIR FREIGHT ☐ F.E.C.	☐ MOTOR FREIGHT ☐ HAND CARRY ☐ GOVT. TRUCK ☐ OTHER	

CERTIFICATE OF COMPLIANCE

The materials, items, supplies, equipment, instruments, systems or services comprising this order have been subjected to and have passed all examinations, inspections, tests and calibrations of the Eberline Instrument Corporation (Instrument Division) quality assurance procedures, and, as applicable, are in compliance with specif. ations imposed by the above referenced contract/purchase order number.

Calibration of the above listed items, as applicable, has been accomplished in accordance with EIC calibration procedures. Sources for calibration and/or dose rates have calibration traceable to National Bureau Standards. The performance of any instrument might be altered by shock or vibration caused by mis-handling during shipment or by other external conditions of humidity, temperature or barometric pressure. For this reason, Eberline Instrument Division cannot guarantee 100% function within the check-out procedures parameters, after it has left our premises.

The undersigned as the authorized representative of the Eberline Instrument Corporation (Instrument Division) warrants the information contained within this document to be a true statement of fact.

Julian C. Wells
Quality Assurance Manager

NOTICE

Request for "Certificates of Calibration", when made a part of the original purchase order/contract, will be furnished at no charge. Request for "Certificates of Calibration" after instruments have been shipped from EIC will be furnished at an additional charge of $10.00 per instrument per copy.

Eberline

A DIVISION OF Thermo Electron CORPORATION

CERTIFICATION OF CALIBRATION

Instrument RO-2

Serial No. 2606

Type of Source Cs-137 S/N 125 - 25 Ci

Cs-137 S/N 123 - .5 Ci
Cs-137 S/N 120 - 3.42 mCi

Range	Calibration Point	Reading
5000 mR/hr @ 5 R/hr	4000 mR/hr	4000 mR/hr
500 mR/hr @ 500 mR/hr	400 mR/hr	400 mR/hr
50 mR/hr @ 50 mR/hr	40 mR/hr	40 mR/hr
5 mR/hr @ 5 mR/hr	4 mR/hr	4 mR/hr
5000 mR/hr @ 1500 mR/hr	1200 mR/hr	1200 mR/hr
500 mR/hr @ 150 mR/hr	120 mR/hr	120 mR/hr
50 mR/hr @ 15 mR/hr	12 mR/hr	11 mR/hr
5 mR/hr @ 1.5 mR/hr	1.2 mR/hr	1.2 mR/hr

Linearity ± 5% of full scale.

Calibration compensated to read correctly at sea level.

Calibration sources used have calibration traceable to the National Bureau of Standards.

Date JUL 5 1984 Signature Stanley Shroulote

No. 29832 B

Eberline

A DIVISION OF Thermo Electron CORPORATION

CERTIFICATION OF CALIBRATION

Instrument MS-2/AC-3-7

Serial No. 1457

Type of Source Eberline MP-1 S/N 207

Fluke DVM Model 8000A

Range	Calibration Point	Reading	
High Voltage:			
Dial @ 2.0	220-280	221	VDC
Dial @ 5.0	665-815	688	VDC
Dial @ 9.0	1215-1485	1285	VDC
High Voltage Dial	set @		VDC

Calibration sources used have calibration traceable to the National Bureau of Standards.

Date JUL 5 1984 Signature R. Montoya

Eberline — A DIVISION OF Thermo Electron CORPORATION

CERTIFICATION OF CALIBRATION

Instrument MS-2 / AC-3-7

Serial No. 1457

Type of Source Eberline MP-1 S/N 207
Pu239 SN 1976 1,210,000 cpm

Range	Calibration Point	Reading
.1 min. @ 1K cpm	100 ± 2 counts	100 counts
.2 min. @ 1K cpm	200 ± 2 counts	200 counts
.5 min. @ 1K cpm	500 ± 10 counts	500 counts
1 min. @ 1K cpm	1,000 ± 10 counts	999 counts
10 min. @ 1K cpm	10K ± 25 counts	10K counts
1 MIN	393,853 cpm	32.5% Eff.

Calibration sources used have calibration traceable to the National Bureau of Standards.

Date JUL 5 [illegible] Signature R. Montoya

Eberline

A DIVISION OF Thermo Electron CORPORATION

CERTIFICATION OF CALIBRATION

Instrument MS-2 / AC-3-7

Serial No. 1457

Type of Source Eberline MP-1 S/N 207

Range	Calibration Point	Reading
X1 @ 400 cpm	400 cpm	400 cpm
X10 @ 4K cpm	4K cpm	4K cpm
X100 @ 40K cpm	40K cpm	40K cpm
X1K @ 400K cpm	400K cpm	400K cpm
X1 @ 100 cpm	100 cpm ± 5%	100 cpm
X10 @ 1K cpm	1K cpm ± 5%	1K cpm
X100 @ 10K cpm	10K cpm ± 5%	10K cpm
X1K @ 100K cpm	100K cpm ± 5%	100K cpm

Calibration sources used have calibration traceable to the National Bureau of Standards.

Date JUL 5 1984 Signature R. Mendoza

Eberline

A DIVISION OF Thermo Electron CORPORATION

CERTIFICATION OF CALIBRATION

Instrument RM-21-4

Serial No. 230

Type of Source Eberline MP-1 S/N 163
PuBe SN 143 9.8Ci

Range	Calibration Point	Reading
count @ 4K cpm	80 mrem/hr	80 mrem/hr
count @ 40K cpm	800 mrem/hr	800 mrem/hr
count @ 400 cpm	8 mrem/hr ± 10%	7.8 mrem/hr
count @ 400K cpm	8K mrem/hr ± 10%	8.2K mrem/hr
27 mRem/hr	27 mRem/hr ± 5%	25 mRem/hr
H.V. Reading		1900 V
Input		2 mV

Calibration sources used have calibration traceable to the National Bureau of Standards.

Date 7-31-84 Signature

No. 25389 B

RESUME'

1. PERSONAL

a. NAME: Keith Ray Honey
b. BORN: June 8, 1940 PLACE: Stoutland, Missouri
c. GRADUATED HIGH SCHOOL: Newburg High School, Newburg, Missouri, May, 1958
d. MARRIED: Janet L. Finley, January 27, 1963
e. CHILDREN: Brian Keith (October 18, 1967, Columbia, Missouri); Jennifer Beth (July 23, 1974, Columbia, Missouri); Shawn Brandon (January 11, 1977, Beckley, West Virginia)
f. HEIGHT: 5 ft. 8 in.
g. WEIGHT: 160 lbs.
h. HAIR: Brown
i. EYES: Blue
j. CURRENT POSITION: Professor (with Tenure) and Chairman, Department of Physics, West Virginia Institute of Technology, Montgomery, WV 25136
k. CURRENT RESIDENCE: Rt. 2, Box 65 R, Fayetteville, WV 25840
l. TELEPHONE: (304) 442-3132 (Office)
(304) 574-3596 (Home)

2. EDUCATIONAL BACKGROUND

a. B.S., Physics, University of Missouri-Rolla, Rolla, MO 65401; May, 1963
b. M.S., Astronomy, University of Iowa, Iowa City, IA 52240; February, 1967
c. Ph.D., Physics, University of Missouri-Columbia, Columbia, MO 65201; December, 1972
d. During the course of my formal studies in physics, astronomy, and astrophysics I became familiar with the mathematical and physical bases of radioactivity, nuclear fission, and nuclear fusion. Moreover, I am familiar with the concept of half-life, the nature of radioactive isotopes, the various modes of radioactive decay, the various ways of quantifying the radiation associated with such decay, the general way in which a nuclear fission reactor functions, and with the necessity of properly monitoring the radiation levels to which biological systems may be exposed. At no point, however, did any of my studies or research require the handling of radioactive sources or materials.

3. ACADEMIC WORK EXPERIENCE

a. Graduate Teaching Assistant, University of Iowa, Iowa City, IA 52240, 1965-1967
b. Graduate Teaching Assistant, University of Missouri-Columbia, Columbia, MO 65201, 1967-1972
c. Instructor of Physics, Lincoln University, Jefferson City, MO 65101, 1972-1974
d. Assistant Professor of Physics, Glassboro State College, Glassboro, NJ 02028, 1974-1976

3. ACADEMIC WORK EXPERIENCE (continued)

e. Assistant Professor of Physics, West Virginia Institute of Technology, Montgomery, WV 25136, 1976-1977
f. Associate Professor of Physics, West Virginia Institute of Technology, Montgomery, WV 25136, 1977-present
g. During the course of my teaching duties in physics I have demonstrated in the classroom and laboratory such radioactive sources as cesium -137, strontium -90, and cobalt -60. The radiations from these sources were monitored using a proportional counter monitoring system. I have done no formal research as a teacher of physics requiring the use of radioactive sources or materials.

4. NON-ACADEMIC WORK EXPERIENCE

a. Physicist, U.S. Naval Ordnance Test Station (now U.S. Naval Weapons Center), China Lake, CA, 1963-1965
b. My work in this position did not require the use of radioactive sources or materials. My rank in this position was initially GS-7 with a later promotion to GS-9. My security clearance was initially at the level of CONFIDENTIAL and this was later extended to the level of SECRET.

5. PROFESSIONAL ACTIVITY

a. American Association of Physics Teachers
b. American Association of Physics Teachers, Appalachian Section
c. Astronomical Society of the Pacific

6. RESEARCH ACTIVITY

a. orbit for Halley's Comet
b. retention of atmospheres by planets and satellites
c. structure of white dwarf stars
d. radiation from accelerated, charged particles
e. pulsating stars undergoing rotation

7. INSTITUTIONAL RESPONSIBILITIES

a. Library Committee (Chairman) (past)
b. Student-Faculty Discipline Committee (past)
c. Teacher Education Committee (current)
d. Personnel Review Committee (past)
e. Ad-Hoc Student Recruitment Committee (current)
f. Engineering-Physical Sciences Council (current)
g. Engineering-Physical Sciences Curriculum Committee (current)

8. OTHER ACTIVITIES

a. involved in local Little League baseball and Ben Argento Basketball League basketball programs
b. judge for many local and regional science fairs

9. NON-PROFESSIONAL ACTIVITY

a. Member, Fayetteville Rotary Club, Fayetteville, WV 25840

RESUME'

I. PERSONAL

Name: Roderick W. Wilson
Address: Box 6, WVIT
Montgomery, WV 25136
Telephone: (304) 442-4914 (Home)
(304) 442-3132 (Office)

II. EDUCATIONAL BACKGROUND

A.B., Physics/Math, West Virginia University, 1956
MS.S., Physics, West Virginia University, 1957

III. ACADEMIC WORK EXPERIENCE

Masters Thesis in Gamma Pulse Spectroscopy, West Virginia University, 1956
Instructor of Physics, West Virginia University, 1960-64
Radiological Safety Officer, West Virginia University, 1962-63
Professor of Physics, West Virginia Institute of Technology, 1964-present
Radiological Safety Officer, West Virginia Institute of Technology, 1983-present

IV. NON-ACADEMIC WORK EXPERIENCE

National Security Agency, Fort Meade, MD, 1957-60
NSF Summer Research Institute, University of South Carolina, working in Mossbauer Spectroscopy, 1968-69
Have worked regularly with standard introductory nuclear experiments in basic introductory physics courses

STATEMENT OF RESULTS OF NUCLEAR WIPE TEST

On Wednesday, November 14, 1984, a wipe test was performed on the sealed nuclear sources (License No. SNM-608) currently held by the Department of Physics, West Virginia Institute of Technology, Montgomery, WV 25136. These sealed nuclear sources are stored in the manner described in Item 13 above. The wipe test was performed in the manner described in Item 15 above, except that the filter papers used for the test were moistened with water rather than with ethyl alcohol. Ethyl alcohol will be used for all future wipe tests.

To monitor radiation levels during the wipe test procedure, a Neutron Rem Detector (Eberline Model RM-21) and the Ion Chamber (Eberline Model RO-2) (as described in Item 10 above) were placed in the working area. In addition, four pairs of thermal neutron and gamma ray dosimeters were placed along the walls inside the room. A fifth dosimeter pair (one thermal neutron and one gamma ray) was placed in the hallway outside the room. This hallway was blocked to public traffic during the wipe test. All rooms adjacent to the room in which the wipe test was performed were vacant during the entire procedure. Finally, the individuals performing the wipe test carried upon their person (during the entire procedure) a thermal neutron-gamma ray dosimeter pair.

Following the wipe test, the filter papers were counted with the Alpha Scintillation Counter (Eberline Model AC-3-7) (as described in Item 10 above). The resulting count was entirely negligible -- i.e., the same as the background radiation count. Thus, the contamination is $<< 0.005$ μCi. The Ion Chamber registered a maximum reading of 0.5 rem/h during the test. The Neutron Rem Detector registered zero during the entire test. The maximum reading on any of the gamma ray dosimeters during the test was 1 mrem, and the maximum reading on any of the thermal neutron dosimeters was 2 mrem.

Keith R. Honey

Keith R. Honey, Ph.D.
Professor and Chairman
Department of Physics

WEST VIRGINIA INSTITUTE OF TECHNOLOGY
Montgomery, West Virginia 25136

SCHOOL of
ENGINEERING and PHYSICAL SCIENCES

November 29, 1984

Dr. Kenneth R. Bailey
Vice President for Administrative Affairs
West Virginia Institute of Technology
Montgomery, WV 25136

Dear Dr. Bailey:

As you are aware, a neutron howitzer (Model NH-3) containing sealed Pu-Be nuclear sources is now in the possession of the Department of Physics and is being stored in Room 102 of Science Hall. For this reason, access to Room 102 should be strictly limited. Thus, I hereby request that the lock to Room 102, Science Hall, be re-keyed and that seven (7) keys be issued for the new lock. These seven (7) keys would be distributed to the six (6) faculty members of the Department of Physics and to Dr. Robert L. Myers, Professor of Chemistry, who is the building supervisor for Science Hall. Note that there should not be any keys for custodial personnel. Any custodial services required in Room 102 can be done upon specific request from -- and under the direct supervision of -- a member of the physics department faculty or Dr. Myers.

Your immediate consideration of this matter would be greatly appreciated.

I remain

Sincerely yours,

Keith R. Honey

Keith R. Honey, Ph.D.
Professor and Chairman
Department of Physics

jb

cc: Mr. Dale Allman, Director of the Physical Plant
Nuclear Regulatory Commission