

## MATERIALS LICENSE

Amendment No. 03

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.

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## Licensee

1. U.S. Army Medical Research Institute  
for Infectious Diseases2. Fort Detrick, Building 1425  
Frederick, Maryland 21702-5011In accordance with the letter dated  
October 4, 1996,3. License Number 9-11831-03 is amended in  
its entirety to read as follows:

4. Expiration Date December 31, 2000

5. Docket or  
Reference No. 030-317436. 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. As specified in Section  
33.100, Schedule A, of  
10 CFR 33 (Type B Broad  
License)

A. Any

A. See Condition 12

B. Nickel 63

B. Plated sources or foils

B. Not to exceed 15  
millicuries per source  
and 150 millicuries total

9. Authorized use

A. Research and development as defined in 10 CFR 30.4; animal studies.

B. In electron capture detector cells which are distributed under a specific license  
issued by the U.S. Nuclear Regulatory Commission or any Agreement State.

## CONDITIONS

10. Licensed material may be used only at the licensee's facilities located at Fort  
Detrick, Buildings 568, 1301, 1412 and 1425, Frederick, Maryland.11. A. Licensed material shall be used by, or under the supervision of, individuals  
designated in writing by the Radiation Safety Officer.

B. The Radiation Safety Officer for this license is Paul E. Kemp.

12. A. If only one radionuclide is possessed, the possession limit is the quantity  
specified for that radionuclide in 10 CFR 33.100, Schedule A, Column I. If two  
or more radionuclides are possessed, the possession limit is determined as  
follows: For each radionuclide, determine the ratio of the quantity possessed  
to the applicable quantity specified in 10 CFR 33.100, Schedule A, Column I, for  
that radionuclide. The sum of the ratios for all radionuclides possessed under  
the license shall not exceed unity.

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**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License Number

19-11831-03

Docket or Reference Number

030-31743

Amendment No. 03

- B. Notwithstanding Paragraph A of this Condition and 10 CFR 33.100, Schedule A, Column I, the applicable quantities for the following radionuclides are reduced to:

Carbon 14	10 curies
Krypton 85	10 curies
Iodine 129	10 millicuries

Any byproduct material other than alpha emitting byproduct material not listed in 10 CFR 33.100, Schedule A	10 millicuries
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13. 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.

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- 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.
- 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.
14. Licensed material shall not be used in or on human beings.
15. The licensee shall not use licensed material in field applications where activity is released except as provided otherwise by specific condition of this license.
16. Experimental animals, or the products from experimental animals, that have been administered licensed materials shall not be used for human consumption.
17. A. Detector cells containing a titanium tritide foil or a scandium tritide foil shall only be used in conjunction with a properly operating temperature control mechanism which prevents the foil temperatures from exceeding that specified in the certificate of registration referred to in 10 CFR 32.210.
- B. When in use, detector cells containing a titanium tritide foil or a scandium tritide foil shall be vented to the outside.
18. 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.
19. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.
20. 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.
21. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."

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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 March 21, 1990
- B. Letter dated July 16, 1990
- C. Letter dated September 5, 1990
- D. Letter dated May 27, 1992
- E. Letter dated March 11, 1996
- F. Letter dated June 20, 1996
- G. Letter dated July 19, 1996
- H. Letter dated October 4, 1996
- I. Letter dated February 3, 1997

FEB 12 1997

Date \_\_\_\_\_

For the U.S. Nuclear Regulatory Commission

Original Signed By:

John D. Kinneman

By \_\_\_\_\_

Division of Nuclear Materials Safety  
Region I

King of Prussia, Pennsylvania 19406



FEB 12 1997

LTC Daxon  
Headquarters  
U.S. Army Medical Command  
ATTN: MCHL-CL-W  
2050 Worth Road  
Fort Sam Houston, TX 78234-6000

Dear Colonel Daxon:

This refers to your license amendment request. Enclosed with this letter is the amended license.

Please review the enclosed document 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:

**John D. Kinneman**

John D. Kinneman, Chief  
Nuclear Materials Safety Branch  
Division of Nuclear Materials Safety

License No. 19-11831-03  
Docket No. 030-31743  
Control No. 123885

Enclosure:

Amendment No. 03

DOCUMENT NAME: R:\WPS\MLTR\L1911831.03

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	N			
NAME	J. Bondick/jmb		J. Kinneman				
DATE	02/12/97		02/12/97		02/ /97		02/ /97

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**ML 10**

<b>TELEPHONE CONVERSATION RECORD</b>		<b>Date:</b> 2/10/97	<b>Time:</b> 2:10 p.m.
<b>Mail Control No.:</b> 123885	<b>License No.:</b> 19-11831-03	<b>Docket No.:</b> 030-31743	
<b>Person Called:</b> Paul E. Kemp, ARSO	<b>Organization:</b> U.S. Army Medical Research Institute	<b>Telephone Number:</b> 301- 619-4626	
<b>Person Calling:</b> J. Bondick	<b>Organization:</b> NRC	<b>Telephone Number:</b> 6951	
<b>Subject:</b> Additional information: license number for operations at building 1301			
<b>Summary:</b> Mr. Kemp returned my call and left a message that the operations in building 1301 were licensed under license number 19-00915-03, for the USDA HQ and that John T. Jensen was the RSO, and could be contacted at 301-734-4945.			
<b>Action Required/Taken:</b> Note to file, process amendment request.			
<b>Signature:</b> J. Bondick <i>Bondick</i>		<b>Date:</b> 2/10/97	

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3 February 1997

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MEMORANDUM

FOR U.S. Nuclear Regulatory Commission, Division of Radiation  
Safety and Safeguards/Licensing Branch, Region I;  
ATTN: Jim Bondick; 475 Allendale Road; King of  
Prussia, PA 19406-1415

19-11831-03

SUBJECT: Requested additional information (MLCN: 123885)

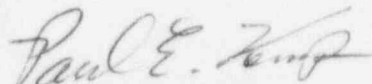
1. Per our telephone conversation on 2 January 1997 this additional information is being provided:

Item #1: New RPO Training and Experience documentation.

Item #2: Authorization and Protocol information for USAMRIID personnel working in Building # 1301 Fort Detrick, MD. 21701.

For further information please contact Mr. Paul E. Kemp, RPO at 301-619-4626.

Encl (9)

  
PAUL E. KEMP  
RPO, Radiation Safety Office  
USAMRIID

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123885  
FEB - 7 1997

# TRAINING AND EXPERIENCE OF AUTHORIZED RADIOISOTOPE USERS

1. Name of Authorized User (Last, First, MI)	Rank/Grade	Organization	Division	Bldg. Room No.
KEMP, PAUL E.	GS-08/6	USAMRIID	HEALTH PHYSICS	1425/AA504

2. FORMAL EDUCATION		HIGHEST ACADEMIC DEGREE ATTAINED
Higher Education Institutions Attended	Type of Program Pursued and Dates of Attendance (Include course title if known)	Degree, Diploma or Certificate Received and Date
a. Academy of Health Sciences	Medical Technology	
b. Academy of Health Sciences	Radiology Science	
c. St. Phillips College	Radiology Science	
d. Hagerstown Junior College	Radiation Science	

3. TRAINING RECEIVED IN BASIC RADIOISOTOPE HANDLING TECHNIQUES			
FIELD OF TRAINING A	LOCATION AND DATE(S) OF TRAINING (Include course title if known) B	TYPE AND LENGTH OF TRAINING	
		LECTURE/ LABORATORY COURSES (Hours) C	SUPERVISED LABORATORY EXPERIENCE (Hours) D
a. RADIATION PHYSICS AND INSTRUMENTATION	Academy of Health Sciences, San Antonio, TX. 82-83 Harvard University, Rad Phys Occ. & Envir. Rad Protection, Aug 94	336 Hrs 36 Hrs	25 Hrs
b. RADIATION PROTECTION	Radiation Safety Officer's Course UV of TX. Health Sc. Ctr., May 95 Radiology Non. Com. Officer's Course Academy of H. S. C. Ft. Sant. TX. Aug 86	36 Hrs 40 Hrs	
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY	Medical Dosimetry, U of TX, Category 1 AMA Physicians Recognition, Nov 96 Radiological Technologist Academy of Health Sc, 82-83	36 Hrs 45 Hrs	
d. RADIATION BIOLOGY	Radiation Safety Officer's Course Academy of Health Sc, May 95 Hagerstown J. C. Radiation Biology, 1991 Radiological Health, U of TX., Feb 92	20 Hrs 40 Hrs 36 Hrs	
e. RADIOPHARMACEUTICAL CHEMISTRY	Nuclear Medicine Tech., Cross Training O.J.T., Silas B. Hayes Army Hosp. Presidio of San Francisco CA. Dec 82	40 Hrs	

4. EXPERIENCE WITH RADIATION (Actual use of Radioisotopes) (Sealed or unsealed source)				
ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
99m-Tc	5.000	Nuclear Med Dept. Silas B. Hayes Army Hosp.	July- Oct 1982	O.J.T. NM Tech
3-H, 14-C 32-P, 35-S 45-Ca, 51-Cr 125-I, 131-I 22-Na, 86-Rb 33-P	1.000-1000.00	Health Physics Dept. United States Army Medical Research Of Infectious Diseases Ft. Detrick, MD.	8 years	Involved with the many Protocols using Radioactive Isotopes with in USAMRIID

4. EXPERIENCE WITH RADIATION (Actual use of Radioisotopes) (Sealed or unsealed source) (Continued)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE

5. EXPERIENCE WITH RADIATION PRODUCING DEVICES (X-Ray, Irradiators, etc.)

DEVICE	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
60-Co 25,030 Ci AFC IRRADIATOR	USAMRIID, FT. DETRICK, MD	6 YRS	OPERATOR & MONITOR
137-Cs 3490 Ci AEC IRRADIATOR	USAMRIID, FT. DETRICK, MD	6 YRS	OPERATOR & MONITOR
X-RAY	FT. CARSON, CO. FRESNO MEPS, FRESNO CA. SILAS B. HAYES ARMY MED. CTR. FT. DETRICK, MD.	6 Mo. 3 Yrs. 5 Mo. 5 Yrs.	OPERATOR & MONITOR

6. CERTIFICATION:

I certify that the information provided hereon is true and complete to the best of my knowledge.

3 January 1997  
(Date signed)

Paul E. Kemp  
(Signature of Applicant)



a. Research Protocol #	<b>RESEARCH PROTOCOL FOR RADIOISOTOPE USAGE</b> (Must be Typed)		Isotope Usage #
<input type="checkbox"/> New	<input checked="" type="checkbox"/> Amendment	<input type="checkbox"/> Renewal	
b. Coworkers Connie Schmaljohn, Ph. D.	c. Trainees David Pennock, Kristin Spik, Tim Nelle Kurt Kamrud, Mary Guttieri, Jay Hooper, Barbara Meyer, Lorna Vanderzanden	d. Technicians Max Custer Carol Bookwalter	
e. Radioisotope <sup>35</sup> S	Physical/Chemical Form and Source Amino acids and nucleoside triphosphates	Maximum Quantity per Experiment (mCi) 10 mCi	
f. Title of Project Molecular and Biological Characterization of Hantaviruses			
g. Beginning Date July 1994		h. Ending Date June 1997	i. Repetitive Study Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
j. Life Cycle of Radioisotope and Brief Summary of Research Procedures  <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Receive Isotope from Mr. Kemp (Room 110, Bldg. 1301)</p> <p>For <i>in vivo</i> labeling studies:            0.1-5.0 mCi added each time to culture media for incorporation into viral or cellular nucleic acids and proteins            (Bldg. 1301, Room 110 or 116 for BL-2 agents)</p> </div> <div style="width: 45%; text-align: right;"> <p>Storage -70 ° freezer (Room 110, Bldg. 1301)</p> <p>For <i>in vitro</i> labeling studies:            (e.g. nucleotide sequencing)            0.01-0.05 mCi added to each reaction            (Bldg. 1301, Room 109)</p> </div> </div> <p style="text-align: center;">Incubation period varies from 10 min to 4 days</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Unincorporated Isotope remaining in reaction mixtures or culture fluids</p> </div> <div style="width: 45%; text-align: right;"> <p>Incorporated Isotope (0.01-1.0 mCi)            Utilized in nucleic acid and protein experiments (1 day - 3 weeks)</p> </div> </div> <p style="text-align: center;">All waste transferred to liquid and dry waste containers upon completion of experiments          (Bldg. 1301; rooms 109, 111 or 116)</p>			
k. Labeling and Transport of Radioactive Material:  <p>All radioactive solutions, tissues, animals and waste will be identified by proper label. Transport of radioactive material between authorized work areas will be conducted in a manner that precludes the spread of contamination and inadvertent exposure of non-participating personnel.</p>			

l. Laboratory Animal Usage: <b>NONE</b> Species: _____ Terminal Nonterminal	Room: _____ Bldg: _____ Animal Usage Protocol Number _____
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**For all nonterminal experiments, the animals will be held until no radioisotope is found in urine, feces, or expired air.**

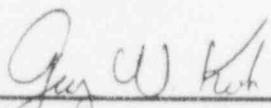
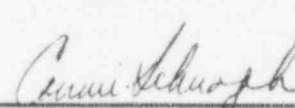
m. Isotope Utilization Location						
	(1)	(2)	(3)	(4)	(5)	(6)
Bldg	1301	1301	1301			
Room	109	111	116			

Maximum Amount in Possession (mCi) <b>10 mCi</b>	n. Isotope Storage Location Bldg <b>1301</b> Room <b>110</b>	Max Amt (mCi) <b>10 mCi</b>
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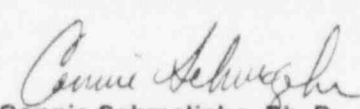
o. Isotope Waste Storage <b>-70° Freezers</b> Solid and Liquid Room: <b>110</b> Bldg: <b>1301</b>	p. Animals and Tissue Storage Location <div style="border: 1px solid black; padding: 5px; text-align: center;">None</div>
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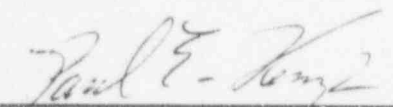
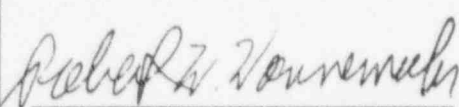
**q. All radioactive waste will be transferred to Health Physics, USAMRIID, as described in USAMRIID Radiation Safety Manual.**

**r. Room Survey**  
**All room surveys will be conducted as outlined in USAMRIID Radiation Safety Manual.**

Reviewed and Approved <div style="text-align: center;">           Division Chief, Signature       </div> <div style="text-align: center;"> <u>31 Jan 97</u>          Date       </div>	Reviewed and Approved <div style="text-align: center;">           Principal User, Signature       </div> <div style="text-align: center;"> <u>1/31/97</u>          Date       </div>
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**The research protocol enumerated above is designed to ensure that occupational radiation exposures and release of radioactive effluents to the environment will be "as low as reasonably achievable" (ALARA) during all phases of the research procedures.**

<u>01-28-97</u> Date	 Connie Schmaljohn, Ph. D. Printed Name and Signature of Coworker
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Approval: Radiation Protection Office <div style="text-align: center;">           Signature       </div> <div style="text-align: center;"> <u>31 Jan 97</u>          Date       </div>	Approval: Ionizing Radiation Control Committee <div style="text-align: center;">           Signature       </div> <div style="text-align: center;"> <u>3 Feb 97</u>          Date       </div>
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a. Research Protocol #	<b>RESEARCH PROTOCOL FOR RADIOISOTOPE USAGE</b> (Must be Typed)		Isotope Usage #
<input type="checkbox"/> New	<input checked="" type="checkbox"/> Amendment	<input type="checkbox"/> Renewal	
b. Coworkers Connie Schmaljohn Ph. D.	c. Trainees David Pennock, Kristin Spik, Tim Nelle Kurt Kamrud, Mary Guttieri, Jay Hooper, Barbara Meyer, Lorna Vanderzanden		d. Technicians Max Custer Carol Bookwalter
e. Radioisotope <b><sup>14</sup>C</b>	Physical/Chemical Form and Source Methylated proteins and amino acids		Maximum Quantity per Experiment (mCi) <b>10 mCi</b>
f. Title of Project <b>Molecular and Biological Characterization of Hantaviruses</b>			
g. Beginning Date <b>July 1994</b>		h. Ending Date <b>June 1997</b>	i. Repetitive Study Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<p>j. Life Cycle of Radioisotope and Brief Summary of Research Procedures</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Receive Isotope from Mr. Kemp (Room 110, Bldg. 1301)</p> <p>For in vivo labeling studies: 0.5-5.0 mCi added each time to culture media for incorporation into viral or cellular nucleic acids and proteins (Room 110, Bldg. 1301 for BL-2 agents)</p> </div> <div style="width: 45%; text-align: center;"> <pre> graph TD     A[Receive Isotope from Mr. Kemp (Room 110, Bldg. 1301)] --&gt; B[Storage -70 ° freezer (Room 110, Bldg. 1301)]     B --&gt; C[For in vivo labeling studies: 0.5-5.0 mCi added each time to culture media for incorporation into viral or cellular nucleic acids and proteins (Room 110, Bldg. 1301 for BL-2 agents)]     B --&gt; D[For in vitro labeling studies: (e.g. protein markers) 0.001-0.010 mCi added to each experiment (Room 116, Bldg. 1301)]     C --&gt; E[Incubation period varies from 10 min to 4 days]     D --&gt; E     E --&gt; F[Unincorporated Isotope remaining in reaction mixtures or culture fluids]     E --&gt; G[Incorporated Isotope (0.01-1.0 mCi) Utilized in nucleic acid and protein experiments (1 day - 3 weeks)]     F --&gt; H[All waste transferred to liquid and dry waste containers upon completion of experiments (Room 110, 116, Bldg. 1301)]     G --&gt; H           </pre> </div> </div>			
<p>k. Labeling and Transport of Radioactive Material:</p> <p>All radioactive solutions, tissues, animals and waste will be identified by proper label. Transport of radioactive material between authorized work areas will be conducted in a manner that precludes the spread of contamination and inadvertant exposure of non-participating personnel.</p>			

I. Laboratory Animal Usage:      Room:      Bldg:		Animal Usage Protocol Number	
<b>NONE</b>			
Species:			
Terminal      Nonterminal			
<b>For all nonterminal experiments, the animals will be held until no radioisotope is found in urine, feces, or expired air.</b>			
m. Isotope Utilization Location			
	(1)	(2)	(3)
	(4)	(5)	(6)
Bldg	1301	1301	
Room	110	116	
Maximum Amount in Possession (mCi) <b>5 mCi</b>		n. Isotope Storage Location	
		Bldg 1301      Room 110      Max Amt (mCi) <b>5 mCi</b>	
o. Isotope Waste Storage <b>-70<sup>0</sup> Freezers</b>		p. Animals and Tissue Storage Location	
Solid and Liquid    Room: 110      Bldg: 1301		<div style="border: 1px solid black; padding: 5px; display: inline-block;">None</div>	
q. All radioactive waste will be transferred to Health Physics, USAMRIID, as described in USAMRIID Radiation Safety Manual.			
r. Room Survey All room surveys will be conducted as outlined in USAMRIID Radiation Safety Manual.			
Reviewed and Approved  <div style="border-bottom: 1px solid black; width: 150px; margin: 10px 0;"></div> Division Chief, Signature		Reviewed and Approved  <div style="border-bottom: 1px solid black; width: 150px; margin: 10px 0;"></div> Principal User, Signature	
<div style="border-bottom: 1px solid black; width: 100px; margin: 10px 0;"></div> Date		<div style="border-bottom: 1px solid black; width: 100px; margin: 10px 0;"></div> Date	
The research protocol enumerated above is designed to ensure that occupational radiation exposures and release of radioactive effluents to the environment will be "as low as reasonably achievable" (ALARA) during all phases of the research procedures.			
<div style="border-bottom: 1px solid black; width: 100px; margin: 10px 0;"></div> Date		<div style="border-bottom: 1px solid black; width: 150px; margin: 10px 0;"></div> Printed Name and Signature of Coworker	
Approval: Radiation Protection Office		Approval: Ionizing Radiation Control Committee	
<div style="border-bottom: 1px solid black; width: 150px; margin: 10px 0;"></div> Signature		<div style="border-bottom: 1px solid black; width: 150px; margin: 10px 0;"></div> Signature	
<div style="border-bottom: 1px solid black; width: 100px; margin: 10px 0;"></div> Date		<div style="border-bottom: 1px solid black; width: 100px; margin: 10px 0;"></div> Date	

a. Research Protocol #	<b>RESEARCH PROTOCOL FOR RADIOISOTOPE USAGE</b> (Must be Typed)		Isotope Usage #
<input type="checkbox"/> New	<input checked="" type="checkbox"/> Amendment	<input type="checkbox"/> Renewal	
b. Coworkers Connie Schmaljohn, Ph. D.	c. Trainees David Pennock, Kristin Spik, Tim Nelle Kurt Kamrud, Mary Guttieri, Jay Hooper, Barbara Meyer, Lorna Vanderzanden	d. Technicians Max Custer Carol Bookwalter	
e. Radioisotope $^{32}\text{P}$	Physical/Chemical Form and Source Orthophosphate, monophosphates, and nucleoside triphosphates	Maximum Quantity per Experiment (mCi) 10 mCi	
f. Title of Project Molecular and Biological Characterization of Hantaviruses			
g. Beginning Date July 1994		h. Ending Date June 1997	i. Repetitive Study Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
j. Life Cycle of Radioisotope and Brief Summary of Research Procedures <div style="margin-top: 20px;"> <pre> graph TD     A[Receive Isotope from Mr. Kemp (Room 110, Bldg. 1301)] --&gt; B[Storage -70 ° freezer (Room 110, Bldg. 1301)]     B --&gt; C[For in vivo labeling studies: 0.5-5.0 mCi added each time to culture media for incorporation into viral or cellular nucleic acids and proteins (Room 110 or 116, Bldg. 1301 for BL-2 agents)]     B --&gt; D[For in vitro labeling studies: (e.g. nucleotide sequencing) 0.01-0.5 mCi added to each reaction (Room 110, Bldg. 1301)]     C --&gt; E[Incubation period varies from 10 min to 4 days]     D --&gt; E     E --&gt; F[Unincorporated Isotope remaining in reaction mixtures or culture fluids]     E --&gt; G[Incorporated Isotope (0.01-1.0 mCi) Utilized in nucleic acid and protein experiments (1 day - 3 weeks)]     F --&gt; H[Greater than 10mCi transferred to Mr. Kemp immediately upon completion of experiment]     G --&gt; I[All waste transferred to liquid and dry waste containers upon completion of experiments (Room 110 or 116, Bldg. 1301)]           </pre> </div>			
k. Labeling and Transport of Radioactive Material: <p>All radioactive solutions, tissues, animals and waste will be identified by proper label. Transport of radioactive material between authorized work areas will be conducted in a manner that precludes the spread of contamination and inadvertant exposure of non-participating personnel.</p>			



l. Laboratory Animal Usage: <b>NONE</b> Species: _____ Terminal Nonterminal	Room: _____ Bldg: _____ Animal Usage Protocol Number _____
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**For all nonterminal experiments, the animals will be held until no radioisotope is found in urine, feces, or expired air.**

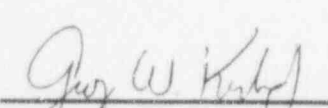
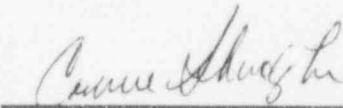
m. Isotope Utilization Location						
	(1)	(2)	(3)	(4)	(5)	(6)
Bldg	1301	1301				
Room	110	116				

Maximum Amount in Possession (mCi) <b>10 mCi</b>	n. Isotope Storage Location Bldg <b>1301</b> Room <b>110</b>	Max Amt (mCi) <b>10 mCi</b>
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o. Isotope Waste Storage <b>-70° Freezers</b> Solid and Liquid Room: <b>110</b> Bldg: <b>1301</b>	p. Animals and Tissue Storage Location <div style="border: 1px solid black; padding: 5px; text-align: center;">None</div>
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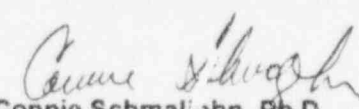
**q. All radioactive waste will be transferred to Health Physics, USAMRIID, as described in USAMRIID Radiation Safety Manual.**

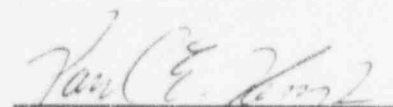
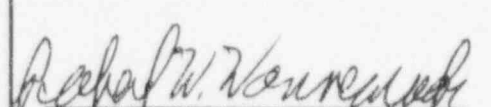
**r. Room Survey**  
**All room surveys will be conducted as outlined in USAMRIID Radiation Safety Manual.**

Reviewed and Approved <div style="text-align: center;">           Division Chief, Signature       </div> <div style="text-align: center;">         31 Jan 97          Date       </div>	Reviewed and Approved <div style="text-align: center;">           Principal User, Signature       </div> <div style="text-align: center;">         1/31/97          Date       </div>
---	--

**The research protocol enumerated above is designed to ensure that occupational radiation exposures and release of radioactive effluents to the environment will be "as low as reasonably achievable" (ALARA) during all phases of the research procedures.**

**01-28-97**  
 Date

  
 Connie Schmaljohn, Ph.D.  
 Printed Name and Signature of Coworker

Approval: Radiation Protection Office <div style="text-align: center;">           Signature       </div> <div style="text-align: center;">         31 Jan 97          Date       </div>	Approval: Ionizing Radiation Control Committee <div style="text-align: center;">           Signature       </div> <div style="text-align: center;">         3 Feb 97          Date       </div>
---	--

a. Research Protocol #	<b>RESEARCH PROTOCOL FOR RADIOISOTOPE USAGE</b> (Must be Typed)		Isotope Usage #
<input type="checkbox"/> New	<input checked="" type="checkbox"/> Amendment	<input type="checkbox"/> Renewal	
b. Coworkers Connie Schmaljohn, Ph. D.	c. Trainees David Pennock, Kristin Spik, Tim Nelle Kurt Kamrud, Mary Guttieri, Jay Hooper, Barbara Meyer, Lorna Vanderzanden	d. Technicians Max Custer Carol Bookwalter	
e. Radioisotope $^3\text{H}$	Physical/Chemical Form and Source Amino acids and nucleoside triphosphates	Maximum Quantity per Experiment (mCi) 10 mCi	
f. Title of Project Molecular and Biological Characterization of Hantaviruses			
g. Beginning Date July 1994		h. Ending Date June 1997	i. Repetitive Study Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<p>j. Life Cycle of Radioisotope and Brief Summary of Research Procedures</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Receive Isotope from Mr. Kemp (Room 110, Bldg. 1301)</p> <p>For <i>in vivo</i> labeling studies: 0.5-5.0 mCi added each time to culture media for incorporation into viral or cellular nucleic acids and proteins (Bldg. 1301, Room 110 or 116 for BL-2 agents)</p> </div> <div style="width: 45%; text-align: center;"> <p>Storage -70 ° freezer (Room 110, Bldg. 1301)</p> </div> </div> <p style="text-align: center;">Incubation period varies from 10 min to 4 days</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Unincorporated Isotope remaining in reaction mixtures or culture fluids</p> </div> <div style="width: 45%; text-align: center;"> <p>Incorporated Isotope (0.01-1.0 mCi) Utilized in nucleic acid, protein experiments (1 day - 3 weeks)</p> </div> </div> <p style="text-align: center;">All waste transferred to liquid and dry waste containers upon completion of experiments (Bldg. 1301; rooms 110, 116)</p>			
<p>k. Labeling and Transport of Radioactive Material:</p> <p>All radioactive solutions, tissues, animals and waste will be identified by proper label. Transport of radioactive material between authorized work areas will be conducted in a manner that precludes the spread of contamination and inadvertent exposure of non-participating personnel.</p>			

l. Laboratory Animal Usage: <b>NONE</b> Species: _____ Terminal Nonterminal	Bldg: _____ Animal Usage Protocol Number _____
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For all nonterminal experiments, the animals will be held until no radioisotope is found in urine, feces, or expired air.

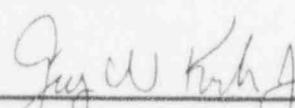
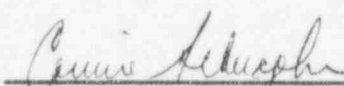
m. Isotope Utilization Location						
	(1)	(2)	(3)	(4)	(5)	(6)
Bldg	1301	1301				
Room	110	116				

Maximum Amount in Possession (mCi) <b>10 mCi</b>	n. Isotope Storage Location Bldg <b>1301</b> Room <b>110</b>	Max Amt (mCi) <b>10 mCi</b>
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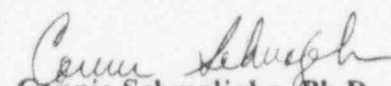
o. Isotope Waste Storage <b>-70<sup>0</sup> Freezers</b> Solid and Liquid Room: <b>110</b> Bldg: <b>1301</b>	p. Animals and Tissue Storage Location <div style="border: 1px solid black; padding: 5px; text-align: center;">None</div>
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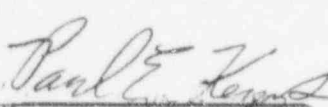
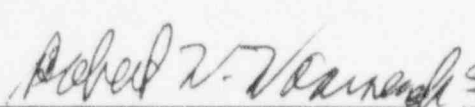
q. All radioactive waste will be transferred to Health Physics, USAMRIID, as described in USAMRIID Radiation Safety Manual.

r. Room Survey  
All room surveys will be conducted as outlined in USAMRIID Radiation Safety Manual.

Reviewed and Approved <div style="text-align: center;">           Division Chief, Signature       </div> <div style="text-align: center;"> <u>3. Jan 97</u>          Date       </div>	Reviewed and Approved <div style="text-align: center;">           Principal User, Signature       </div> <div style="text-align: center;"> <u>1/31/97</u>          Date       </div>
--	---

The research protocol enumerated above is designed to ensure that occupational radiation exposures and release of radioactive effluents to the environment will be "as low as reasonably achievable" (ALARA) during all phases of the research procedures.

<u>01-28-97</u> Date	 Connie Schmaljohn, Ph.D. Printed Name and Signature of Coworker
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Approval: Radiation Protection Office <div style="text-align: center;">           Signature       </div> <div style="text-align: center;"> <u>1/31/97</u>          Date       </div>	Approval: Ionizing Radiation Control Committee <div style="text-align: center;">           Signature       </div> <div style="text-align: center;"> <u>3/1/97</u>          Date       </div>
--	---

a. Research Protocol #	<b>RESEARCH PROTOCOL FOR RADIOISOTOPE USAGE</b> (Must be Typed)		Isotope Usage #
<input type="checkbox"/> New	<input checked="" type="checkbox"/> Amendment	<input checked="" type="checkbox"/> Renewal	
b. Coworkers <b>Kevin Anderson, Ph.D.</b> (GS-13)	c. Trainees <b>Dr. Kevin J. Gilligan, NRC Fellow</b> <b>Dr. Leonard P. Wasieloski, NRC Fellow</b>	d. Technicians <b>Destry Sillivan, E-5</b>	
e. Radioisotope <b><math>^3\text{H}</math></b>	Physical/Chemical Form and Source <b>Amino acids, nucleosides, nucleoside triphosphates, fatty acids, lipid precursors.</b>	Maximum Quantity per Experiment (mCi) <b>10 mCi</b>	
f. Title of Project <b>Expression of Nonreplicating Virus-Like Particles in Eukaryotic Cells</b>			
g. Beginning Date <b>July 1994</b>		h. Ending Date <b>June 1997</b>	i. Repetitive Study Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<p>j. Life Cycle of Radioisotope and Brief Summary of Research Procedures</p> <div style="display: flex; flex-direction: column; align-items: center;"> <div style="display: flex; justify-content: space-between; width: 100%;"> <div style="width: 45%;"> <p>Receive Isotope from Mr. Kemp (Room 110, Bldg. 1301)</p> <p>For <i>in vivo</i> labeling studies: 0.5-5.0 mCi added each time to culture media for incorporation into viral or cellular nucleic acids, proteins or lipids (Bldg. 1301, Room 110 or 116 for BL-2 agents)</p> </div> <div style="width: 10%; text-align: center;"> <pre> graph TD     A[Receive Isotope from Mr. Kemp (Room 110, Bldg. 1301)] --&gt; B[Storage -70° freezer (Room 110, Bldg. 1301)]     B --&gt; C[For in vivo labeling studies: 0.5-5.0 mCi added each time to culture media for incorporation into viral or cellular nucleic acids, proteins or lipids (Bldg. 1301, Room 110 or 116 for BL-2 agents)]     B --&gt; D[For in vitro labeling studies: (e.g. Cell-free Translation) 0.01-0.5 mCi added to each reaction for incorporation into viral or cellular nucleic acids, proteins or lipids (Bldg. 1301, Room 110 or 116)]     C --&gt; E[Incubation period varies from 10 min to 4 days]     D --&gt; E     E --&gt; F[Unincorporated Isotope remaining in reaction mixtures or culture fluids]     E --&gt; G[Incorporated Isotope (0.01-1.0 mCi) Utilized in nucleic acid, protein or lipid experiments (1 day - 3 weeks)]     F --&gt; H[All waste transferred to liquid and dry waste containers upon completion of experiments (Bldg. 1301; rooms 110, 116)]     G --&gt; H           </pre> </div> <div style="width: 45%;"> <p>Storage -70° freezer (Room 110, Bldg. 1301)</p> <p>For <i>in vitro</i> labeling studies: (e.g. Cell-free Translation) 0.01-0.5 mCi added to each reaction for incorporation into viral or cellular nucleic acids, proteins or lipids (Bldg. 1301, Room 110 or 116)</p> </div> </div> <p>Incubation period varies from 10 min to 4 days</p> <div style="display: flex; justify-content: space-between; width: 100%;"> <div style="width: 45%;"> <p>Unincorporated Isotope remaining in reaction mixtures or culture fluids</p> </div> <div style="width: 45%;"> <p>Incorporated Isotope (0.01-1.0 mCi) Utilized in nucleic acid, protein or lipid experiments (1 day - 3 weeks)</p> </div> </div> <p>All waste transferred to liquid and dry waste containers upon completion of experiments (Bldg. 1301; rooms 110, 116)</p> </div>			
<p>k. Labeling and Transport of Radioactive Material:</p> <p>All radioactive solutions, tissues, animals and waste will be identified by proper label. Transport of radioactive material between authorized work areas will be conducted in a manner that precludes the spread of contamination and inadvertent exposure of non-participating personnel.</p>			

l. Laboratory Animal Usage: <b>NONE</b> Species: _____ Terminal Nonterminal	Room: _____ Bldg: _____ Animal Usage Protocol Number _____
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For all nonterminal experiments, the animals will be held until no radioisotope is found in urine, feces, or expired air.

m. Isotope Utilization Location

	(1)	(2)	(3)	(4)	(5)	(6)
Bldg	1301	1301				
Room	110	116				

Maximum Amount in Possession (mCi) **30 mCi**

n. Isotope Storage Location

Bldg **1301**

Room **110**

Max Amt (mCi) **30 mCi**

o. Isotope Waste Storage **-70° Freezers**

Solid and Liquid Room: **110** Bldg: **1301**

p. Animals and Tissue Storage Location

**None**

q. All radioactive waste will be transferred to Health Physics, USAMRIID, as described in USAMRIID Radiation Safety Manual.

r. Room Survey

All room surveys will be conducted as outlined in USAMRIID Radiation Safety Manual.

Reviewed and Approved

*Ray W. Harty*  
Division Chief, Signature

31 Jan 97  
Date

Reviewed and Approved

*Carmie Schuchman*  
Principal User, Signature

1/31/97  
Date

The research protocol enumerated above is designed to ensure that occupational radiation exposures and release of radioactive effluents to the environment will be "as low as reasonably achievable" (ALARA) during all phases of the research procedures.

01-28-97  
Date

Kevin Anderson, Ph.D.  
Printed Name and Signature of Coworker

Approval: Radiation Protection Office

*David E. Harty*  
Signature

31 Jan 97  
Date

Approval: Ionizing Radiation Control Committee

*Robert V. Harty*  
Signature

3 Feb 97  
Date



a. Research Protocol #	<b>RESEARCH PROTOCOL FOR RADIOISOTOPE USAGE</b> (Must be Typed)		Isotope Usage #
<input type="checkbox"/> New	<input checked="" type="checkbox"/> Amendment	<input type="checkbox"/> Renewal	
b. Coworkers <b>Kevin Anderson, Ph.D. (GS-13)</b>		c. Trainees <b>Dr. Kevin J. Gilligan, NRC Fellow</b> <b>Dr. Leonard P. Wasieloski, NRC Fellow</b>	d. Technicians <b>Destry Sillivan, E-5</b>
e. Radioisotope <b><math>^{35}\text{S}</math></b>		Physical/Chemical Form and Source <b>Amino acids, proteins, nucleoside triphosphates</b>	Maximum Quantity per Experiment (mCi) <b>10 mCi</b>
f. Title of Project <b>Expression of Nonreplicating Virus-Like Particles in Eukaryotic Cells</b>			
g. Beginning Date <b>July 1994</b>		h. Ending Date <b>June 1997</b>	i. Repetitive Study Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<p>j. Life Cycle of Radioisotope and Brief Summary of Research Procedures</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Receive Isotope from Mr. Kemp (Room 110, Bldg. 1301)</p> <p>For <i>in vivo</i> labeling studies: 0.1-5.0 mCi added each time to culture media for incorporation into viral or cellular nucleic acids, proteins or lipids (Bldg. 1301, Room 110 or 116 for BL-2 agents)</p> </div> <div style="width: 45%; text-align: right;"> <p>Storage -70° freezer (Room 110, Bldg. 1301)</p> <p>For <i>in vitro</i> labeling studies: (e.g. nucleotide sequencing) 0.01-0.05 mCi added to each reaction (Bldg. 1301, Room 109)</p> </div> </div> <p style="text-align: center;">Incubation period varies from 10 min to 4 days</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Unincorporated Isotope remaining in reaction mixtures or culture fluids</p> </div> <div style="width: 45%; text-align: right;"> <p>Incorporated Isotope (0.01-1.0 mCi) Utilized in nucleic acid, protein or lipid experiments (1 day - 3 weeks)</p> </div> </div> <p style="text-align: center;">All waste transferred to liquid and dry waste containers upon completion of experiments (Bldg. 1301; rooms 109, 111 or 116)</p>			
<p>k. Labeling and Transport of Radioactive Material:</p> <p>All radioactive solutions, tissues, animals and waste will be identified by proper label. Transport of radioactive material between authorized work areas will be conducted in a manner that precludes the spread of contamination and inadvertant exposure of non-participating personnel.</p>			

I. Laboratory Animal Usage: <b>NONE</b> Species: _____ Terminal Nonterminal	Room: _____ Bldg: _____ Animal Usage Protocol Number _____
---	---

For all nonterminal experiments, the animals will be held until no radioisotope is found in urine, feces, or expired air.

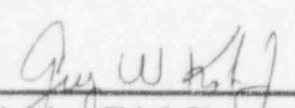
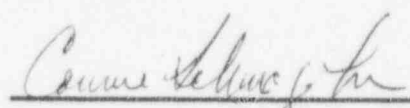
m. Isotope Utilization Location						
	(1)	(2)	(3)	(4)	(5)	(6)
Bldg	1301	1301	1301			
Room	109	111	116			

Maximum Amount in Possession (mCi) <b>30 mCi</b>	n. Isotope Storage Location Bldg <b>1301</b> Room <b>110</b>	Max Amt (mCi) <b>30 mCi</b>
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o. Isotope Waste Storage <b>-70° Freezers</b> Solid and Liquid Room: <b>110</b> Bldg: <b>1301</b>	p. Animals and Tissue Storage Location <div style="border: 1px solid black; padding: 5px; width: 100%;">None</div>
--	---

q. All radioactive waste will be transferred to Health Physics, USAMRIID, as described in USAMRIID Radiation Safety Manual.

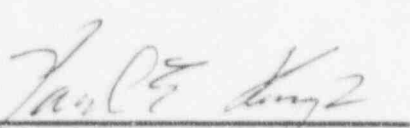
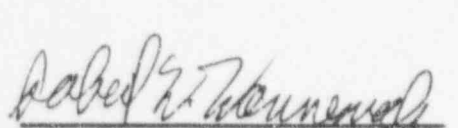
r. Room Survey  
All room surveys will be conducted as outlined in USAMRIID Radiation Safety Manual.

Reviewed and Approved <div style="text-align: center;">           Division Chief, Signature       </div> <div style="text-align: center;"> <u>31 Jan 97</u>          Date       </div>	Reviewed and Approved <div style="text-align: center;">           Principal User, Signature       </div> <div style="text-align: center;"> <u>1/31/97</u>          Date       </div>
--	---

The research protocol enumerated above is designed to ensure that occupational radiation exposures and release of radioactive effluents to the environment will be "as low as reasonably achievable" (ALARA) during all phases of the research procedures.

01-28-97  
Date

Kevin Anderson, Ph.D.  
Printed Name and Signature of Coworker

Approval: Radiation Protection Office <div style="text-align: center;">           Signature       </div> <div style="text-align: center;"> <u>31 Jan 97</u>          Date       </div>	Approval: Ionizing Radiation Control Committee <div style="text-align: center;">           Signature       </div> <div style="text-align: center;"> <u>3 Feb 97</u>          Date       </div>
--	---

a. Research Protocol #	<b>RESEARCH PROTOCOL FOR RADIOISOTOPE USAGE</b> (Must be Typed)		Isotope Usage #
<input type="checkbox"/> New	<input checked="" type="checkbox"/> Amendment	<input type="checkbox"/> Renewal	
b. Coworkers <b>Kevin Anderson, Ph.D. (GS-13)</b>		c. Trainees <b>Dr. Kevin J. Gilligan, NRC Fellow</b> <b>Dr. Leonard P. Wasieloski, NRC Fellow</b>	d. Technicians <b>Destry Sullivan, E-5</b>
e. Radioisotope <b><math>^{14}\text{C}</math></b>		Physical/Chemical Form and Source <b>Amino acids, proteins, fatty acids, lipid precursors</b>	Maximum Quantity per Experiment (mCi) <b>5 mCi</b>
f. Title of Project <b>Expression of Nonreplicating Virus-Like Particles in Eukaryotic Cells</b>			
g. Beginning Date <b>July 1994</b>		h. Ending Date <b>June 1997</b>	i. Repetitive Study Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
j. Life Cycle of Radioisotope and Brief Summary of Research Procedures  <div style="display: flex; flex-direction: column; align-items: center;"> <div style="display: flex; justify-content: space-between; width: 100%;"> <div style="width: 45%;"> <p>Receive Isotope from Mr. Kemp (Room 110, Bldg. 1301)</p> <p>For <i>in vivo</i> labeling studies: 0.5-5.0 mCi added each time to culture media for incorporation into viral or cellular nucleic acids, proteins or lipids (Room 110, Bldg. 1301 for BL-2 agents)</p> </div> <div style="width: 10%; text-align: center;"> </div> <div style="width: 45%;"> <p>Storage -70° freezer (Room 110, Bldg. 1301)</p> <p>For <i>in vitro</i> labeling studies: (e.g. protein markers) 0.001-0.010 mCi added to each experiment (Room 116, Bldg. 1301)</p> </div> </div> <p>Incubation period varies from 10 min to 4 days</p> <div style="display: flex; justify-content: space-between; width: 100%;"> <div style="width: 45%;"> <p>Unincorporated Isotope remaining in reaction mixtures or culture fluids</p> </div> <div style="width: 45%;"> <p>Incorporated Isotope (0.01-1.0 mCi) Utilized in nucleic acid, protein or lipid experiments (1 day - 3 weeks)</p> </div> </div> <p>All waste transferred to liquid and dry waste containers upon completion of experiments (Room 110, 116, Bldg. 1301)</p> </div>			
k. Labeling and Transport of Radioactive Material:  <p>All radioactive solutions, tissues, animals and waste will be identified by proper label. Transport of radioactive material between authorized work areas will be conducted in a manner that precludes the spread of contamination and inadvertent exposure of non-participating personnel.</p>			

l. Laboratory Animal Usage: <b>NONE</b> Species: _____ Terminal Nonterminal	Room: _____ Bldg: _____ Animal Usage Protocol Number _____
---	---

For all nonterminal experiments, the animals will be held until no radioisotope is found in urine, feces, or expired air.

m. Isotope Utilization Location

	(1)	(2)	(3)	(4)	(5)	(6)
Bldg	1301	1301				
Room	110	116				

Maximum Amount in Possession (mCi) **30 mCi**

n. Isotope Storage Location

Bldg Annex Room **110**

Max Amt (mCi) **30 mCi**

o. Isotope Waste Storage **-70° Freezers**  
 Solid and Liquid Room: **110** Bldg: **1301**

p. Animals and Tissue Storage Location

None

q. All radioactive waste will be transferred to Health Physics, USAMRIID, as described in USAMRIID Radiation Safety Manual.

r. Room Survey

All room surveys will be conducted as outlined in USAMRIID Radiation Safety Manual.

Reviewed and Approved

Reviewed and Approved

*Greg W. Kelly*  
 Division Chief, Signature

31 Jan 97  
 Date

*Carmel Schaefer*  
 Principal User, Signature

1/31/97  
 Date

The research protocol enumerated above is designed to ensure that occupational radiation exposures and release of radioactive effluents to the environment will be "as low as reasonably achievable" (ALARA) during all phases of the research procedures.

01-28-97  
 Date

Kevin Anderson, Ph.D.  
 Printed Name and Signature of Coworker

Approval: Radiation Protection Office

Approval: Ionizing Radiation Control Committee

*Paul E. King*  
 Signature

31 Jan 97  
 Date

*Robert W. Zimmerman*  
 Signature

31 Jan 97  
 Date

a. Research Protocol #	<b>RESEARCH PROTOCOL FOR RADIOISOTOPE USAGE</b> (Must be Typed)		Isotope Usage #
<input type="checkbox"/> New	<input checked="" type="checkbox"/> Amendment	<input type="checkbox"/> Renewal	
b. Coworkers Kevin Anderson, Ph.D. (GS-13)	c. Trainees Dr. Kevin J. Gilligan, NRC Fellow Dr. Leonard P. Wasieleski, NRC Fellow	d. Technicians Destry Sullivan, E-5	
e. Radioisotope $^{32}\text{P}$	Physical/Chemical Form and Source Orthophosphate, nucleoside mono-phosphates, nucleoside tri-phosphates	Maximum Quantity per Experiment (mCi) 10 mCi	
f. Title of Project Expression of Nonreplicating Virus-Like Particles in Eukaryotic Cells			
g. Beginning Date July 1994		h. Ending Date June 1997	i. Repetitive Study Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
j. Life Cycle of Radioisotope and Brief Summary of Research Procedures  <div style="display: flex; flex-direction: column; align-items: center;"> <div style="display: flex; justify-content: space-between; width: 100%;"> <div style="width: 45%;"> <p>Receive Isotope from Mr. Kemp (Room 110, Bldg. 1301)</p> <p>For <i>in vivo</i> labeling studies: 0.5-5.0 mCi added each time to culture media for incorporation into viral or cellular nucleic acids, proteins or lipids (Room 110 or 116, Bldg. 1301 for BL-2 agents)</p> </div> <div style="width: 45%; text-align: right;"> <p>Storage -70° freezer (Room 110, Bldg. 1301)</p> <p>For <i>in vitro</i> labeling studies: (e.g. nucleotide sequencing) 0.01-0.5 mCi added to each reaction (Room 110, Bldg. 1301)</p> </div> </div> <div style="margin: 10px 0;"> <p>Incubation period varies from 10 min to 4 days</p> </div> <div style="display: flex; justify-content: space-between; width: 100%;"> <div style="width: 45%;"> <p>Unincorporated Isotope remaining in reaction mixtures or culture fluids</p> </div> <div style="width: 45%; text-align: right;"> <p>Incorporated Isotope (0.01-1.0 mCi) Utilized in nucleic acid, protein or lipid experiments (1 day - 3 weeks)</p> </div> </div> <div style="margin: 10px 0;"> <p>All waste transferred to liquid and dry waste containers upon completion of experiments (Room 110 or 116, Bldg. 1301)</p> </div> <div style="width: 45%;"> <p>Greater than 10mCi transferred to Mr. Kemp immediately upon completion of experiment</p> </div> </div>			
k. Labeling and Transport of Radioactive Material:  <p>All radioactive solutions, tissues, animals and waste will be identified by proper label. Transport of radioactive material between authorized work areas will be conducted in a manner that precludes the spread of contamination and inadvertent exposure of non-participating personnel.</p>			



l. Laboratory Animal Usage: <b>NONE</b> Species: _____ Terminal Nonterminal	Room: _____ Bldg: _____ Animal Usage Protocol Number
--	--

**For all nonterminal experiments, the animals will be held until no radioisotope is found in urine, feces, or expired air.**

m. Isotope Utilization Location

	(1)	(2)	(3)	(4)	(5)	(6)
Bldg	1301	1301				
Room	110	116				

Maximum Amount in Possession (mCi) **30 mCi**

n. Isotope Storage Location

Bldg **1301**

Room **110**

Max Amt (mCi)  
**30 mCi**

o. Isotope Waste Storage **-70° Freezers**

Solid and Liquid Room: **110** Bldg: **1301**

p. Animals and Tissue Storage Location

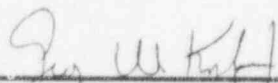
**None**

q. All radioactive waste will be transferred to Health Physics, USAMRIID, as described in USAMRIID Radiation Safety Manual.

r. Room Survey

All room surveys will be conducted as outlined in USAMRIID Radiation Safety Manual.

Reviewed and Approved

  
Division Chief, Signature

31 Jan 97  
Date

Reviewed and Approved

  
Principal User, Signature

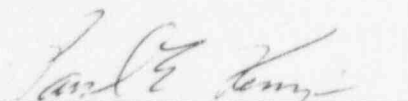
1/31/97  
Date

The research protocol enumerated above is designed to ensure that occupational radiation exposures and release of radioactive effluents to the environment will be "as low as reasonably achievable" (ALARA) during all phases of the research procedures.

01-28-97  
Date

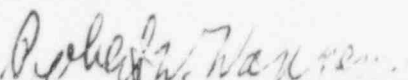
Kevin Anderson, Ph.D.  
Printed Name and Signature of Coworker

Approval: Radiation Protection Office

  
Signature

31 Jan 97  
Date

Approval: Ionizing Radiation Control Committee

  
Signature

3 Feb 97  
Date

<b>TELEPHONE CONVERSATION RECORD</b>		<b>Date:</b> 12/24/96	<b>Time:</b> 8:15 a.m
<b>Mail Control No.:</b> 123885		<b>License No.:</b> 19-11831-03	<b>Docket No.:</b> 030-31743
<b>Person Called:</b> Paul E. Kemp, ARSO		<b>Organization:</b> U.S. Army Medical Research Institute	<b>Telephone Number:</b> 301- 619-4626
<b>Person Calling:</b> J. Bondick		<b>Organization:</b> NRC	<b>Telephone Number:</b> 6951
<b>Subject:</b> Clarification of request and additional information for new RSO			
<p><b>Summary:</b> Spoke to Mr. Kemp about the amendment request. Mr. Kemp clarified that the correct license to be amended is <del>19</del>-11831-03, and will provide additional information: 1) the license number USDA Building 1301 that they state is presently licensed and 2) additional information regarding his qualifications (he is currently the ARSO). They are amending the license to change the RSO since the RSO (Mr. Beckwith Jr. is deceased). Mr. Kemp expects to provide the information by 1/1/97.</p>			
<b>Action Required/Taken:</b> MS 15; await response			
<b>Signature:</b> <i>Bondick</i>		<b>Date:</b> 12/24/96	

OFFICIAL RECORD COPY

ML 10



DEPARTMENT OF THE ARMY

U.S. ARMY MEDICAL RESEARCH INSTITUTE OF INFECTIOUS DISEASES  
FORT DETRICK, FREDERICK, MARYLAND 21702-5011



REPLY TO  
ATTENTION OF

MCMR-UIZ-S (385-11m)

4 October 1996

MEMORANDUM THRU

Commander, U.S. Army Medical Research and Materiel Command,  
ATTN: MCMR-PLA, Fort Detrick, Frederick MD 21702-5012

USAMC (MCHL-CL-W/LTC Daxon), 2050 Worth Road, Fort Sam Houston, TX 78234-6000

FOR U.S. Nuclear Regulatory Commission, Division of Radiation  
Safety and Safeguards\Licensing Branch, Region I;  
ATTN: Anthony Kirkwood; 475 Allendale Road; King of  
Prussia, PA 19406-1415

SUBJECT: Request for Amendment to NRC License Number 19-11831-03

1. Request U.S. Department of Agriculture (USDA) building 1301, Fort Detrick, Frederick MD 21702-5011 be added to License Number 19-11831-03.

a. USDA building 1301 is presently licensed to use radioactive materials. The requested action is being made because U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID) personnel will occupy some laboratories within this building.

b. Qualified employees of USAMRIID in building 1301 have been appointed to the USAMRIID Ionizing Radiation Control Committee, and all workers that will occupy laboratory space have been properly trained to meet the conditions of USAMRIID's NRC License.

c. Currently there is one Principal Radioisotope User at Bldg. 1301 using S-35, P-32.

2. Request name change, Radiation Protection Officer,  
From: William L. Beckwith Jr., To: Paul E. Kemp

123885

NOV 12 1996

MCMR-UIZ-S

SUBJECT: Request for Amendment to NRC License Number 19-11831-03

3. A copy of the floor plan/room drawings for Bldg. 1301 and Mr. Kemp's Curriculum Vitae is attached.

Encl

A handwritten signature in black ink, appearing to read 'DAVID R. FRANZ', with a large, stylized loop at the beginning and a horizontal line extending to the right.

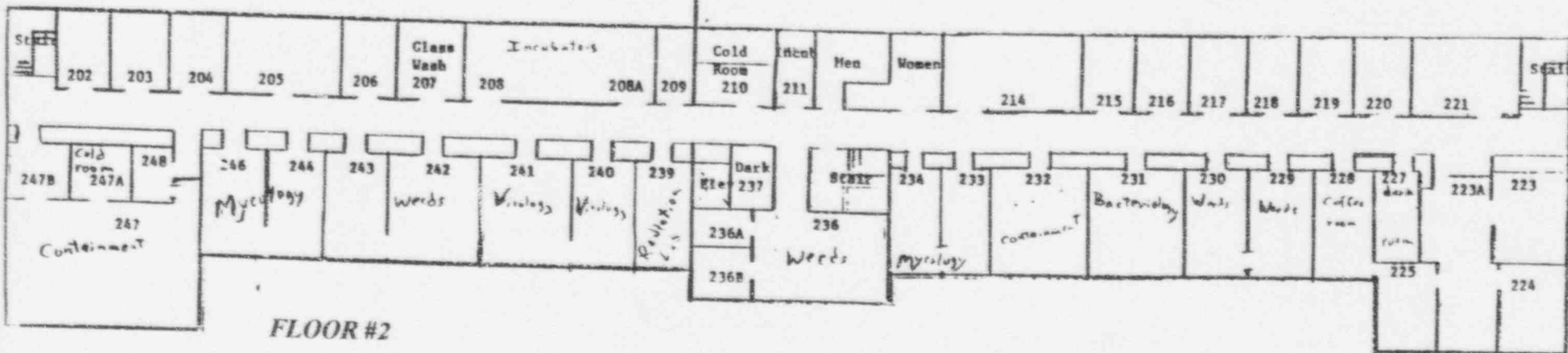
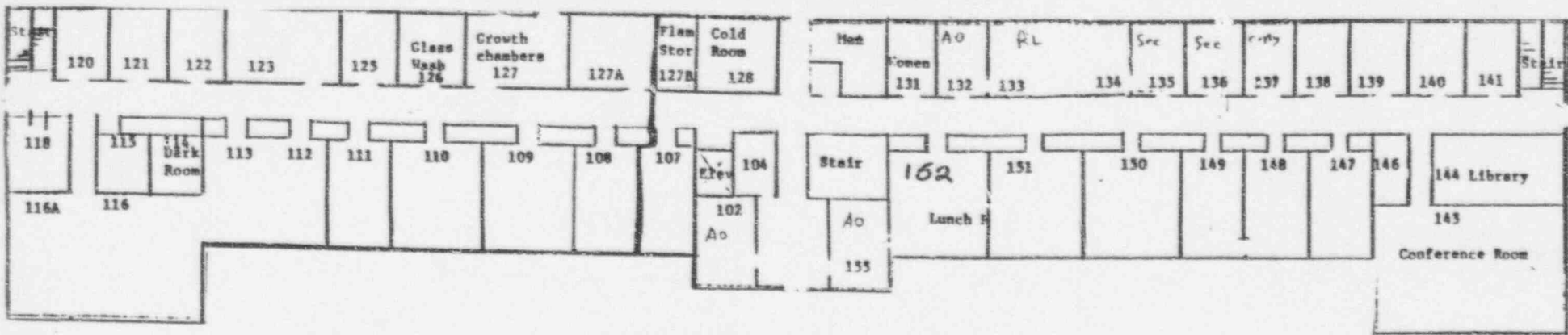
DAVID R. FRANZ  
COLONEL, VC  
Commanding

# FORT DETRICK, MARYLAND

## DEPARTMENT OF ALGRICULTURE ALGRICULTURAL RESEARCH SERVICE

FLOOR #1

BLDG# 1301



FLOOR #2

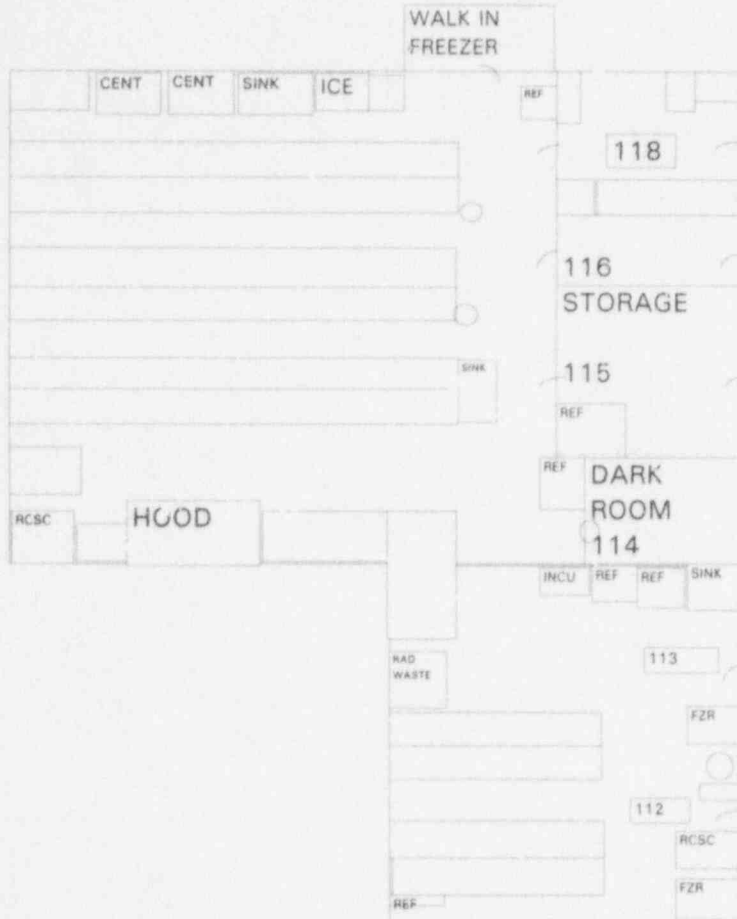
123885



# HEALTH PHYSICS LABORATORY SURVEY

Point of Contact: <b>SCHMALJOHN, CONNIE</b>			Surveyor(s):		Date:
Division:			Survey Meter:	Meter Model:	
Building No: <b>1301</b>	Room No: <b>112-118</b>	Phone No:	Serial No:	Cal. Due:	

## ROOM SKETCH



## QUESTIONS:

1. Appropriate Signs and Labels Posted? ( ) YES ( ) NO
2. No Smoking, Eating, Drinking Policy Followed? ( ) YES ( ) NO
3. Radiation Safety Manual Followed? ( ) YES ( ) NO
4. ALARA Program Followed? ( ) YES ( ) NO
5. Appropriate Personnel Dosimetry Worn? ( ) YES ( ) NO

## COMMENTS:

## SMEAR ANALYSIS

- ( ) All Smears Show Removable Contamination of < 100 DPM
- ( ) All Smears Show Removable Contamination of < 100 DPM with the Exception of the Following:

Smear No.	dpm/100cm <sup>2</sup>	Radionuclide	Location

Smear Results > 100dpm/100cm<sup>2</sup>

- ( ) YES ( ) N/A Informed Investigator on \_\_\_\_\_ and Decon Performed

Smear Results > 500 dpm/100cm<sup>2</sup>

- ( ) YES ( ) N/A Re-Survey Required

## COMMENTS:

Date of Analysis:

Analysis Performed by:

# HEALTH PHYSICS LABORATORY SURVEY

Point of Contact: SCHMALJOHN, CONNIE			Surveyor(s):		Date:
Division:			Survey Meter:	Meter Model:	
Building No: 1301	Room No: 111	Phone No:	Serial No:	Cal. Due:	

## ROOM SKETCH



## QUESTIONS:

1. Appropriate Signs and Labels Posted? ( ) YES ( ) NO
2. No Smoking, Eating, Drinking Policy Followed? ( ) YES ( ) NO
3. Radiation Safety Manual Followed? ( ) YES ( ) NO
4. ALARA Program Followed? ( ) YES ( ) NO
5. Appropriate Personnel Dosimetry Worn? ( ) YES ( ) NO

## COMMENTS:

## SMEAR ANALYSIS

- ( ) All Smears Show Removable Contamination of < 100 DPM
- ( ) All Smears Show Removable Contamination of < 100 DPM with the Exception of the Following:

Smear No.	dpm/100cm2	Radionuclide	Location

Smear Results > 100dpm/100cm2

- ( ) YES ( ) N/A Informed Investigator on \_\_\_\_\_ and Decon Performed

Smear Results > 500 dpm/100cm2

- ( ) YES ( ) N/A Re-Survey Required

## COMMENTS:

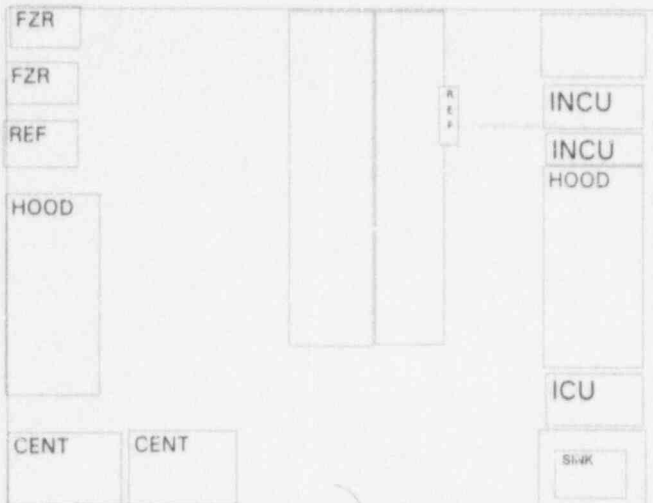
Date of Analysis:

Analysis Performed By:

# HEALTH PHYSICS LABORATORY SURVEY

Point of Contact: <div style="text-align: center;">SCHMALJOHN, CONNIE</div>			Surveyor(s):	Date:
Division:			Survey Meter:	Meter Model:
Building No: <div style="text-align: center;">130</div>	Room No: <div style="text-align: center;">110</div>	Phone No:	Serial No:	Cal. Due:

## ROOM SKETCH



## QUESTIONS:

1. Appropriate Signs and Labels Posted?    ☐ YES   ☐ NO
2. No Smoking, Eating, Drinking Policy Followed?    ☐ YES   ☐ NO
3. Radiation Safety Manual Followed?    ☐ YES   ☐ NO
4. ALARA Program Followed?    ☐ YES   ☐ NO
5. Appropriate Personnel Dosimetry Worn?    ☐ YES   ☐ NO

## COMMENTS:

## SMEAR ANALYSIS

- ☐ All Smears Show Removable Contamination of < 100 DPM
- ☐ All Smears Show Removable Contamination of < 100 DPM with the Exception of the Following:

Smear No.	dpm/100cm <sup>2</sup>	Radionuclide	Location

Smear Results > 100dpm/100cm<sup>2</sup>

- ☐ YES   ☐ N/A Informed Investigator on \_\_\_\_\_ and Decon Performed

Smear Results > 500 dpm/100cm<sup>2</sup>

- ☐ YES   ☐ N/A Re-Survey Required

## COMMENTS:

Date of Analysis:

Analysis Performed by:

# HEALTH PHYSICS LABORATORY SURVEY

Point of Contact: <b>SCHMALJOHN, CONNIE</b>			Surveyor(s):		Date:
Division:			Survey Meter:	Meter Model:	
Building No: <b>1301</b>	Room No: <b>109</b>	Phone No:	Serial No:	Cal. Due:	

## ROOM SKETCH



## QUESTIONS:

1. Appropriate Signs and Labels Posted? ( ) YES ( ) NO
2. No Smoking, Eating, Drinking Policy Followed? ( ) YES ( ) NO
3. Radiation Safety Manual Followed? ( ) YES ( ) NO
4. ALARA Program Followed? ( ) YES ( ) NO
5. Appropriate Personnel Dosimetry Worn? ( ) YES ( ) NO

## COMMENTS:

## SMEAR ANALYSIS

- ( ) All Smears Show Removable Contamination of < 100 DPM
- ( ) All Smears Show Removable Contamination of < 100 DPM with the Exception of the Following:

Smear No.	dpm/100cm <sup>2</sup>	Radionuclide	Location

Smear Results > 100dpm/100cm<sup>2</sup>

- ( ) YES ( ) N/A Informed Investigator on \_\_\_\_\_ and Decon Performed

Smear Results > 500 dpm/100cm<sup>2</sup>

- ( ) YES ( ) N/A Re-Survey Required

## COMMENTS:

Date of Analysis:

Analysis Performed by:

# HEALTH PHYSICS LABORATORY SURVEY

Point of Contact: <b>KRISTIN SPIK</b>			Surveyor(s):	Date:
Division:			Survey Meter:	Meter Model:
Building No: <b>1301</b>	Room No: <b>108</b>	Phone No: <b>694-7632</b>	Serial No:	Cal. Due:

## ROOM SKETCH



## QUESTIONS:

1. Appropriate Signs and Labels Posted? ( ) YES ( ) NO
2. No Smoking, Eating, Drinking Policy Followed? ( ) YES ( ) NO
3. Radiation Safety Manual Followed? ( ) YES ( ) NO
4. ALARA Program Followed? ( ) YES ( ) NO
5. Appropriate Personnel Dosimetry Worn? ( ) YES ( ) NO

## COMMENTS:

## SMEAR ANALYSIS

- ( ) All Smears Show Removable Contamination of < 100 DPM
- ( ) All Smears Show Removable Contamination of < 100 DPM with the Exception of the Following:

Smear No.	dpm/100cm <sup>2</sup>	Radionuclide	Location

Smear Results > 100dpm/100cm<sup>2</sup>

- ( ) YES ( ) N/A Informed Investigator on \_\_\_\_\_ and Decon Performed

Smear Results > 500 dpm/100cm<sup>2</sup>

- ( ) YES ( ) N/A Re-Survey Required

## COMMENTS:

Date of Analysis:

Analysis Performed by:

123885



## CURRICULUM VITAE

30 September 1996

NAME: Paul E. Kemp

DATE OF BIRTH:

WIFE:

HOME ADDRESS:

BUSINESS ADDRESS: United States Army Medical Research Institute of  
Infectious Diseases  
Fort Detrick, MD., 21702  
Telephone: (301) 619-4626

### EDUCATION:

1991-CURRENT (3 SH)	Hagerstown Junior College, Hagerstown, Maryland Radiation Biology, Radiation Science
1982-1983 (360 SH)	St. Phillips College, San Antonio, Tx. Radiology Science
1982-1983 (26 weeks)	Academy Of Health Sciences, Ft. Sam Houston Tx. Medical Specialist, Radiological Technologist
1979-1979 (6 SH)	Behavioral Sciences, Sacred Circle of Life Tulsa University, Tulsa, OK.,
1972-1975	South High School Bakersfield, CA.

### OTHER SCHOOLS OR TRAINING:

1995-May (36 Hrs)	Radiation Safety Officer's Course University of Texas, Health Science Center
1994-Sep (24 Hrs)	POSH Facilitator Training Course Ft. Detrick Training Center, Ft. Detrick, MD.
1994-Aug (40 Hrs)	Occupational and Environmental Radiation Protection Harvard School Of Public Health, Boston, Mass.
1993-July (40 Hrs)	Radioactive Waste Transportation & Disposal Chemical Command, Rock Island, Il.

CURRICULUM VITAE: PAUL E. KEMP

1993-May (8 Hrs)	Computer Program (EXCEL. POWER POINT.) Frederick, Md. (Wk Smrt Corp.)
1993-Apr (8 Hrs)	Computer Program (EXCEL) Frederick, Md. (Wk Smrt Corp.)
1992-March (32 Hrs)	Basic Equal Opportunity Facilitator's Course Ft. Detrick, Training Center, Ft Detrick, Md.
1992-Feb (36 Hrs)	Basic Radiological Health University of Texas Health Science Center, San Antonio, Tx.
1992	Instructor Sacred Music Harrison Mason Bible College, Baltimore Md.
1992	Old Testament Survey Harrison Mason Bible College, Baltimore Md.
1991-Sep (8 Hrs)	Defensive Driving Course Training Center, Ft. Detrick Md.
1991-Jan (8 Hrs)	Defense Hazardous Materials/Waste Handling Course Ft. Detrick, Training Fasc, Ft. Detrick, Md.
1986-Aug (2 Wks)	Radiology Non-Commissioned Officer's Course Ft. Sam Houston, Tx.
1986-Mar (4 Wks)	Primary Leadership Development Ft. Dix, New Jersey
1983-May (1 Wk)	Army Hearing Conservation Course Environmental Conservation Academy, Aberdeen Md.
1981-1982 (5 Wks)	Hospital Counseling Specialist Army chaplain Academy, Staten Island, NY.
1979-Feb (5 Wks)	Chapel Activities Specialist Army Chaplain Academy, Staten Island, Ny.
1979 (6 SH)	Behavioral Sciences, Sacred Circle of Life Tulsa University, Tulsa, OK.,
1979-Feb	Pastoral Coordinator Chaplain School and Center Staten Island, NY.
1979-Apr	Prescribed Projectionist Training Training Center Ft. Huachuca, AZ

CURRICULUM VITAE: PAUL E. KEMP

1976-Oct (7 Wks)	Administration Specialist US Army School of Administration Ft. Jackson, SC.
1974-1975	Emergency Rescue Training Kern County Fire Dept. Bakersfield, CA.

TRAINING AND EXPERIENCE

1996-Jan	Duties of Assist RPO, United States Army Institute of Infectious Diseases, Ft. Detrick, MD.,
1992-Present	Equal Employment Opportunity Counselor USAMRIID, Ft. Detrick, MD.,
1992	Instructor, Sacred Music Harrison Mason Bible College Baltimore Division Baltimore, MD.,
1989-Present	Physical Science, Technician United States Army Medical Institute of Infectious Diseases, Ft. Detrick, MD.,
1988-1995	Founder & Superintendent for 8 Yrs of the Western Progressive District Greater Maryland Jurisdiction
1987-Present	Founder, Pastor Sanctuary Progressive Community Church Frederick, MD.
1986-1987	Founder, Ft. Detrick, Gospel Service Frederick, MD.
1985-1989	Radiology Technologist, United States Army Medical Institute of Infectious Diseases, Ft. Detrick, MD.
1982-1985	RPO, Radiology Technologist, Hearing Conservationist, Military Entrance Processing Station Fresno, CA.
1979-1982	Drug & Alcohol Counseling Specialist Ft. Huachuca, AZ. (Hospital)

CURRICULUM VITAE: PAUL E. KEMP

1976-1979      Legal Administrative Specialist  
Ft. Hood, TX.

PROFESSIONAL ORGANIZATIONS:

(Alumni) Trinity Hall Seminary and Bible College  
American Radiological Tech. Society  
American Lyricist Association  
American Ministerial Association

PROFESSIONAL EXPERIENCE:

1989-CURRENT      Physical Science Technician/Assisted the RPO  
Health Physics, USAMRIID  
Fort Detrick, Frederick, Maryland 21701-5011

Assisted the RPO in the Oversight of all aspects  
of the radiation safety program and insure that  
the Institute is in compliance with NRC license  
requirements and all rules and regulations from  
DA to local authority.

1985-1989      Radiology Department Non-Commissioned Officer in  
Charge. USAMRIID, Fort Detrick, MD., 21701-5011

Oversaw the day to day operations of the  
department. Responsible for assigning personnel  
to work units and other administrative tasks to  
insure an ongoing smooth operation of the  
departments missions.

1982-1985      Radiology Technician/Radiation Protection Officer  
Medical Department  
Fresno, Military Entrance Station  
Fresno, CA.

Oversaw all aspects of the radiation safety  
program and insured that the MEPS was in  
compliance with NRC license requirements and all  
rules.

1977-1980      Counseling Specialist  
Medical, Hospital  
Ft. Huachuca, AZ.

Oversight of the Chaplain's Counseling Program  
which covered; Spousal Abuse/Drug & Alcohol  
Abuse/Death and Dying.

CURRICULUM VITAE: PAUL E. KEMP

1975-1977      Administrative Specialist  
2nd Admin. Div.  
Ft. Hood, TX.

Generated correspondence and supervised 5 other  
administrative workers

1977-1980      Legal Clerk  
2/41 Calvery  
Infantry Division  
Ft. Hood, TX.

Generated all legal Correspondence  
Supervised 7 administrative workers

AWARDS AND HONORS:

Honorary Doctorate of Divinity  
Trinity Hall Seminary Honor Society  
Exceptional Non-Profit CORPORATION, Merit Award  
(President)

LICENSE AND CERTIFICATES:

Parent Effectiveness Trainer  
Ordained Elder, COGIC  
Pastoral Counselor  
District Superintendent

COMMUNITY ACTIVITIES:

Director, Sanctuary Progressive Mission  
Board of Trustees, Sanctuary Progressive  
Community Church, (Chairman)

MILITARY AWARDS & DECORATIONS

Army Commendation Medal  
Army Good Conduct Medal (3)  
Army Service Ribbon  
Joint Meritorious Unit Award  
(Non-Commissioned Officer Professional  
Development Ribbon)  
M16 Weapons Qualification Badge (Expert)  
Hand Grenade Qualification Badge (Expert)



BETWEEN:

```

: PROGRAM CODE: 03611
: STATUS CODE: 0
: FEE CATEGORY: EX 3L
: EXP. DATE: 20001231
: FEE COMMENTS: V
: DECOM FIN ASSUR REQD: Y

```

A. REGION

APPLICANT/LICENSEE: ARMY, DEPARTMENT OF THE  
RECEIVED DATE: 961112  
DOCKET NO: 3031743  
CONTROL NO.: 123885  
LICENSE NO.: 19-11831-03  
ACTION TYPE: AMENDMENT

AMOUNT: \_\_\_\_\_  
CHECK NO.: \_\_\_\_\_

SIGNED Rebecca L. Brown  
DATE 1/14/96

1. FEE CATEGORY AND AMOUNT: -----

AMENDMENT  
RENEWAL  
LICENSE

SIGNED \_\_\_\_\_  
DATE \_\_\_\_\_