NRC	FORM	374	5
(10-1	19)		

U.S. NUCLEAR REGULATORY COMMISSION

			_	
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MATERIALS LICENSE

Amendment No. 19

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, 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.

I	icensee	In accordanc	e with application dated
 Department of the Walter Reed Army I 		July 16, 199 3. License number	
2. Washington, D. C.	20307-5001	4. Expiration date	May 31, 1991
		5. Docket or Reference No.	030-06895
6. By product, source, and/or special nuclear material	7. Chemical and form	d/or physical	8. Maximum amount that licensee may possess at any one time under this license
A. Cobalt 60	A. Sealed sou Models C-1 or C-198)	.66, C-167	A. 2 sources not exceed 16,000 curies each
B. Cesium 137	B. Sealed sou	rces (AECL 1 Type 8)	B. 2 sources not to exceed 2,100 curies each
C. Cobalt 60	C. Sealed sou	rces (AECL	C. 2 sources not to exceed 26,400 curies each
D. Cesium 137	D. Sealed sou Model C-16	irces (AECL	D. 2 sources not to exceed 2,100 curies each
E. Cesium 137	E. Sealed sou		
9. Authorized use	The state of the s		

- A. To be used in AECL Gammacell 220 irradiator for medical research and development and radiation dosimetry.
- B. To be used in AECL Gammacell 40 Irradiator for small animal irradiation, medical research, development and radiation dosimetry.
- C. To be used in AECL Gammacell 220 Irradiator for medical research and development and radiation dosimetry.
- D. To be used in AECL Gammacell 40 Irradiator for medical research and development and radiation dosimetry.
- E. To be used in a products.

irradiator to irradiate blood

CONDITIONS

10. Licensed material shall be used at WRAMC, Washington, D.C., and USAMRILD, Fort Detrick, Maryland.

Information in this record was deleted

in accordance with the Freedom of Information

OFFICIAL RECORD COPY

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NRC Form 374A	U.S. NUC	REGULATORY	COMMISSION	<u> </u>	AGE	2	OF	4	PAGES
(5-84)				License number					
7	MATERIALS LICENSE		08-01738-03						
*	SUPPLEMENTARY SH		Docket or Reference	e number					
				030-	0689	5			
· .					Amen	dmen [.]	t No.	19	•

(Continued)

CONDITIONS

- 11. A. Licensed material shall be used by individuals designated by the individual approved by the Radiation Control Committee.
 - B. The Radiation Safety Officer for this license is Peter H. Myers.
- 12. Sealed sources containing licensed material shall not be opened.
- 13. A. Sealed sources and detector cells shall be tested for leakage and/or contamination at intervals not to exceed 6 months or at such other intervals as are specified by the certificate of registration referred to in 10 CFR 32.210, not to exceed 3 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 3 months.
 - C. In the absence of a certificate from a transferor indicating that a 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 krypton 85; 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.

NRC Form 374A	U.S. NU	EGULATORY COMMISSION		\GE	3	OF	4	PAGES	
(5-84)			License number						
•	MATERIALS LICENSE			08-01738-03					
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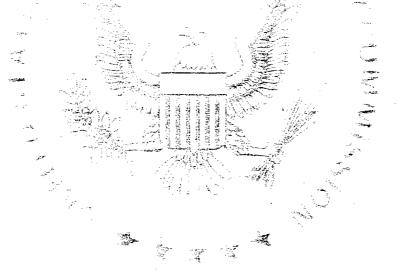
(13. continued)

CONDITIONS

- F. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission. 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 shall be removed from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region I, ATTN: Chief, Nuclear Materials Safety Branch, 475 Allendale Road, King of Prussia, Pennsylvania 19406. The report shall specify the source involved, the test results, and corrective action taken.
- G. The licensee is authorized to collect leak test samples for analysis by individuals approved by the Radiation Control Committee. 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. The licensee shall not perform repairs or alterations of the irradiator involving removal of shielding or access to the licensed material. Removal, replacement, and disposal of sealed sources in the irradiator shall be performed by a person specifically licensed by the Commission or an Agreement State to perform such services.
- 15. Written instructions contained in application dated May 17, 1985 shall be followed and a copy of these instructions shall be made available to each individual using or having responsibility for use of licensed material. Any changes to these instructions shall have the prior approval of the U.S. Nuclear Regulatory Commission, Region I, ATTN: Chief, Nuclear Materials Safety Branch, 475 Allendale Road, King of Prussia, Pennsylvania 19406.

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NRC Form 374A	U.S. NUC	EGULATORY COMMISSION	1	AGE	4	OF	4	PAGES
(5-84)			License number					
•	MATERIALS LIC	08-01738-03						
	SUPPLEMENTARY S	Docket or Referen	ce number					
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(Continued)		CONDITIONS						

- 16. 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 May 17, 1985
 - B. Letter dated April 8, 1986
 - C. Letter dated August 21, 1986
 - D. Application dated October 13, 1989
 - E. Letter dated November 22, 1989
 - F. Application dated July 16, 1990



For the U.S. Nuclear Regulatory Commission

Original Signed By:

JAN 0 8 1991

Date

Thomas K. Thompson

Nuclear Materials Safety Branch
Region I
King of Prussia, Pennsylvania 19406

JAN 0 8 1991

License No. 08-01738-03 Docket No. 030-06895 Control No. 112880

Department of the Army
ATTN: LTC (P) Charles E. Day, III
HQDA (SGPS-PSP-E)
5109 Leesburg Pike
Falls Church, Virginia 22041-3258

Gentlemen:

Please find enclosed an amendment to your NRC Material License.

Please review the enclosed document carefully and be sure that you understand all conditions. If there are any errors or questions, please notify the Region I Material Licensing Section, (215) 337-5093, so that we can provide appropriate corrections and answers.

Please be advised that you must conduct your program involving licensed radioactive materials in accordance with the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, please note the items in the enclosed, "Requirements for Materials Licensees."

Since serious consequences to employees and the public can result from failure to comply with NRC requirements, the NRC expects licensees to pay meticulous attention to detail and to achieve the high standard of compliance which the NRC expects of its licensees.

You will be periodically inspected by NRC. A fee may be charged for inspections in accordance with 10 CFR Part 170. Failure to conduct your program safely and in accordance with NRC regulations, license conditions, and representations made in your license application and supplemental correspondence with NRC will result in prompt and vigorous enforcement action against you. This could include issuance of a notice of violation, or in case of serious violations, an imposition of a civil penalty or an order suspending, modifying or revoking your license as specified in the General Policy and Procedures for NRC Enforcement Actions, 10 CFR Part 2, Appendix C.

We wish you success in operating a safe and effective licensed program.

Sincerely,

Original Signed By:
Thomas K. Thompson
Thomas K. Thompson
Nuclear Materials Safety Section C
Division of Radiation Safety
and Safeguards

Enclosures:

- 1. Amendment No. 19
- 2. Requirements for Materials Licensees
- 3. Regulatory Guide 10.9

DRSS:RI G. Roberts DRSS:RI Thompson

1/4/91

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CONVERSATION REC	CORD	11-7-90	DATE 910)_
TYPE VISIT [CONFERENCE	TELEPHON	E INCOMING	ROUTING NAME/SYMBOL INT
Location of Visit/Conference:			OUTGOING	
NAME OF PERSON(S) CONTACTED OR IN CONTACT	ORGANIZATION (Office	THERETON COLL	PHONE NO:	
LTC L.E. Piper	amy			
SUBJECT W.C 1128PD				,
anaul.				
SUMMARY WRAMC localy	en contanel	in last am	enlant.	(letter dated
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DEPARTMENT OF THE ARMY OFFICE OF THE SURGEON GENERAL 5109 LEESBURG PIKE FALLS CHURCH, VA 22041-3258



REPLY TO ATTENTION OF

July 16, 1990

Preventive and Military Medicine Consultants Division

US Nuclear Regulatory Commission Region I 475 Allendale King of Prussia, Pennsylvania 19406

Dear Sir:

Enclosed are two copies of a request to amend Byproduct Material License Number 08-01738-03, Walter Reed Army Medical Center, Washington, DC.

Recommend approval.

Sincerely,

Charles E. Day, III

Lieutenant Colonel, U.S. Army Radiological Hygiene Consultant

Enclosure

112880



DEPARTMENT OF THE ARMY WALTER REED ARMY MEDICAL CENTER WASHINGTON, D.C. 20307-5001

HSHL-H-HP (385-11m)

MEMORANDUM THRU

Commander, US Army Health Services Command, ATTN: HSCL-P, Fort 3 Jul 90
Sam Houston, TX 78234-6000

HQDA (SGPS-PSP-E), 5109 Leesburg Pike, Falls Church, VA 22041-3258

FOR US Nuclear Regulatory Commission, Region I, Nuclear Material Safety Section A, 475 Allendale Road, King of Prussia, PA 19406

SUBJECT: Amendment of US Nuclear Regulatory Commission License No. 08-01738-03

- 1. Request that NRC License No. 08-01738-03 for Walter Reed Army Medical Center be amended to reflect a change in the Radiation Safety Officer from 1Lt. Allen W. Anthony to LTC Peter H. Myers. LTC Myers has been assigned as the Chief, Health Physics Office at Walter Reed AMC since August 1989. A Training and Experience Form and a Curriculum Vitae for LTC Myers are enclosed (Enclosures 1 and 2). LTC Myers was present when our most resent irradiator from J. L. Shepherd was delivered and attended the training session they provided on it's safe operation and maintenance.
- 2. The address where licensed material shall be used (listed in item 10) needs to include Walter Reed Army Medical Center (WRAMC) Washington D.C.. The new irradiator is in the hospital itself while the two irradiators previously listed are at WRAIR (Walter Reed Army Institute of Research) which is also on the main Walter Reed Post. WRAIR could be considered part of WRAMC but not the other way around.

FOR THE COMMANDER:

2 Encls

LEWELLYN E. PIPER

LTC, MS/

Executive Officer

•	•		JTHORIZED RADIOIS				Ì
. NAME OF AUT	HORIZED USER (Last, Fi	irst, MI)			2. ST	ATE OR TERFICH LICENSEI	RITORY IN
MYERS, Pet	er H.						į
RANK/GRADE	ORGANIZATION	OBGAN	IZATIONAL DIVISION	BLDG./ROOM NO.		D. DDS, DVM.	etc.) ORIZATION NO.
LTC	WRAMC	1	lth Physics	Bld 188,FGS,W	1	TIVAMO AO ITI	221
			3. CERTIFICAT		T		
S P	PECIALTY BOARD		CATE	GORY 3	MON	C C	R CERTIFIED
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]	her Educational Institution		Type of Program F	•	Degree,	Diploma or C	ortificate -
	Attended		Dates of Atte	n don c e	R	eceived and D	ate
Техая	s A&M University	. 1	_MS,Biophys <u>ic</u> s	(Rad Hlth) M	S, <u>Bi</u> opl	nysics (R	ad Hith)
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F	TELD OF TRAINING A			ATE(S) OF TRAINING te title if known) B	LAB	CTURE/ ORATORY DURSES (Hours) C	SUPERVISED LABORATORY EXPERIENCE (llours) D
	a. RADIATION PHYSICS AND INSTRUMENTATION		Applied Hlth Phys Crse Oak Ridge Nat'l Lab, TN June 1978			60	20
b. RADIA	TION PROTECTION		Applied Hlth I Cak Ridge Nat June 1978			60	20
THEU	EMATICS PERTAINING TO SE AND MEASUREMENT DIOACTIVITY	o	Applied Hlth ORAU, TN June 1978	Phys Crse		15	5
d. RADIA	TION BIOLOGY		Applied Hlth ORAU, TN	Phys Crse		15	5
• RADIO CHEMI	PHARMACEUTICAL STRY						

ISOTOPE	THUOMA MUMIXAM	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
Pu-239 Ar-241 Cs-137 Sr-90 Co-60		Enewetok Atoll Radiologi- cal Clean-up	1 year	Environmental Clean-up Pro- ject Debris & Soil
I-131 Ir-192 Cs-137	400 mCi	WRAMC WRAMC WRAMC	10 months 10 months 10 months	Radiotherapy Radiotherapy Radiotherapy
	7. EXP	ERIENCE WITH RADIATION PRODUCING DE	VICES (X-ray, Irradiators, etc.)	
	DEVICE	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
	imar 250-III herapy X-ray Un	Texas A&M University	2 years	Research Pro-
	ch/Teaching r Reactor	Texas A&M University	1 year	General Radi- ation Program OJT (1) Waste Managemen (2) Env Moni- toring (3) Dosimetry (4) Isotope

8. CERTIFICATION:

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

25 Mg 11

(Signature of Applicant)

for use in Research

CURRICULUM VITAE

for

PETER HALL MYERS, Lieutenant Colonel

DATE AND PLACE OF BIRTH:

?

YEARS OF ACTIVE MILITARY SERVICE: Over 22 years

PRESENT ASSIGNMENT: (3 Aug 89 to present)

Chief, Health Physics Office; Alternate RPO,
Walter Reed Army Medical Center,
Washington, DC 20307-5001

MILITARY EDUCATION (pertinent to radiation protection):

Senior Officers' Nuclear Accident Course,
 3 1/2 days (8 hours related to 10CFR35.900), 24-27 Apr 78
 InterService Nuclear Weapons School
 Kirtland Air Force Base, New Mexico

(included presentations on basic radiation protection principals used in managing nuclear weapons accidents, e.g., characteristics of radiological materials to be encountered, contamination monitoring and identification, hot line operations)

Nuclear Medical Science Officers Workshop
 1 week (11 hours related to 10CFR35.900), 19-23 Oct 81
 U.S. Army Environmental Hygiene Agency
 Aberdeen Proving Ground, Maryland

(included presentations on management of radiation protection programs and topical radiation protection issues)

- 3. Nuclear Weapons Orientation Advanced Course 1 week (2 hours related to 10CFR35.900), 1-5 Mar 82 InterService Nuclear Weapons School Kirtland Air Force Base, New Mexico
- 4. Medical Effects of Nuclear Weapons Course, 1 week (17 hours related to 10CFR35.900), 28 Feb-4 Mar 83 Armed Forces Radiobiology Research Institute Bethesda, Maryland

(included presentations on predicted human response to both high and low doses of ionizing radiation; receipt and processing (by medical treatment facilities) of patients contaminated by nuclear material; and basic and advanced medical techniques for the management and treatment of patients having received ionizing radiation exposures)

Ex6

Curriculum Vitae, LTC Peter H. Myers (continued)

MILITARY EDUCATION (continued):

5. U.S. Army Medical Department Radiation Health Sciences Course 1 week (16 hours related to 10CFR35.900), 24-28 Oct 88 U.S. Army Environmental Hygiene Agency Aberdeen Proving Ground, Maryland

(included presentations on management of radiation protection programs and topical radiation protection issues)

CIVILIAN EDUCATION (relative to radiation protection):

Applied Health Physics Course
 weeks (200 hours related to 10CFR35.900), 30 May-1 Jul 77
 Oak Ridge Associated Universities
 Oak Ridge, Tennessee

(see attachment 7 for course curriculum)

 Graduate Study leading to Master of Science Degree in Biophysics (emphasis in Health Physics)
 years, Jul 79-Jun 81 (52 Semester Hours)
 Texas A&M University
 College Station, Texas

(see attachment 8 for details of courses taken)

(included one-year of practical experience (4-8 hours a week) working with Texas A&M's Dosimetry Program, Cyclotron and Research Reactor's Radiation Protection Programs, Radioactive Waste Management Program, Environmental (air, water and soil) Monitoring Program)

3. ABHP Certification Examination Preparation Course
21 Weeks (57 hours related to 10CFR35.900), 11 Jan-31 May 90
Baltimore-Washington Chapter, Health Physics Society
(Classes at NRC Headquarters, Rockville, MD)

(see attachment 9 for details of course curriculum)

HEALTH PHYSICS EXPERIENCE:

Instructor, Radiation Protection
July 1977 - April 1978
Radiological/Chemical Protection Branch
Academy of Health Sciences
Fort Sam Houston, Texas

(included preparing and presenting classes on Battlefield

Curriculum Vitae, LTC Peter H. Myers (continued)

HEALTH PHYSICS EXPERIENCE (continued);

Nuclear Radiation Protection to Army Medical Department Officers; classes included characteristics of ionizing radiation (alpha, beta and gamma), monitoring for ionizing radiation contamination, decontamination procedures and principles of radiation protection (time, distance and shielding)

Assistant Radiation Protection Officer
 May 1978 - 1 May 1979
 Joint Task Group
 Enewetak Atoll Cleanup Project
 Enewetak Atoll,
 Trust Territories of the Pacific Islands

(included assisting the RPO in the preparation and execution of all radiation protection policies in support of the three-year multi-Agency project to remove debris and radiologically-contaminated soil from the islands of Enewetak Atoll; part of the Atomic weapons Pacific Test Site, 1948 - 1958. Radionuclides encountered included those typical to nuclear weapons detonations: Plutonium-239, Americium-241, Cesium-137, Strontium-90, Cobalt-60. Significant radiation protection programs involved: personnel dosimetry, personnel and equipment contamination control, hot-line operations, and air sampling.)

3. Course Director, Medical Effects of Nuclear Weapons Course 6 March 1984 - 6 January 1986 Armed Forces Radiobiology Research Institute National Naval Medical Center Bethesda, MD

(included presentations on predicted human response to both high and low doses of ionizing radiation; receipt and processing (by medical treatment facilities) of patients contaminated by nuclear material; and basic and advanced medical techniques for the management and treatment of patients having received ionizing radiation exposures)

 Nuclear, Biological, Chemical Staff Officer January 1986 - July 1987 Office of The Surgeon General Headquarters, Department of the Army Washington, DC

> (included sponsoring and staying abreast of latest research on medical treatment of ionizing radiation exposure patients; of specific interest was the development of radioprotectants and medicaments to maintain effective performance during times

Curriculum Vitae, LTC Peter H. Myers (continued)

HEALTH PHYSICS EXPERIENCE (continued):

when early radiation sickness ordinarily would interfere with performance effectiveness -- also included development of procedures to be used by battlefield medical units to maximize effectiveness within environments affected by nuclear weapons detonations, e.g., unit preparation in anticipation of nuclear weapons detonations (shielding from prompt ionizing radiation exposures) and unit procedures subsequent to nuclear weapons detonations (shielding from residual radiation exposures and prevention of residual radiation contamination.)

5. Commander
14 July 1987 - 13 July 1989
US Army Pacific Environmental Health Engineering Agency
Camp Zama, Japan

(included directly supervising Health Physics Division whose responsibility was to perform surveys of Tripler Army Medical Center's (TAMC's) Radiation Protection Program which, in part, supported their Nuclear Medicine Clinic -- direct supervision involved reviewing and approving all survey reports written in evaluation of TAMC's Radiation Protection Program.)

FIDD STATES ATT

CPT PETER H. MYERS

KIRTLAND AIR FORCE BASE, NEW HEXICO 87117 PDS CODE: NPR DURATION: 34 DAYS

and is herewith awarded this

CERTIFICATE of TRAINING

T. FRANKLIN, Lt Col, USAF

Commandant

Interservice Nuclear Weapons School

24 - 27 Apr 1978

Date



DEPARTMENT OF THE ARMY

This is to certify that

MAJ PETER H. MYERS

has successfully completed

NUCLEAR MEDICAL SCIENCE OFFICERS WORKSHOP 19 - 23 OCT 81

Given at us Army Environmental Hygiene Agency

CHARLES E. DAY, III

MAJ, MSC

Course Director

NUCLEAR MEDICAL SCIENCE OFFICERS' CONFERENCE.

18 October 1981

Sunday

0001-2400 Sign-in & Register

SDO & SDNCO

f. 1.

19 October 1981

Monday

TIME	TITLE	INSTRUCTOR
0815-0830 0830-0845 0845-0900 0910-0950 1000-1100	In-processing Welcome Course Introduction Orientation/Task Assignments Nuclear Medical Science Officers in the Army MSC Affairs LUNCH	Mrs. Donley COL Whitlaw MAJ Day MAJ Day/CPT Vreuls COL McDermott BG Jordan
1300-1330 1335-1425 1435-1525 1535-1600 1605-1630	Litigation of Speaking Out(JAG) Radiological Technician(91P) Health Physics Technician(91M) Naval Health Physics Air Force Health Physics	MAJ Reilly 1LT Watts CPT Harrison CDR Beuchler LTC Kopp
	20 October 1981	
	Tuesday	
0800-1630	201/Branch File Review with Personnel Interview	COL McDermott
0800-0850 0850-0900 0900-0950 1000-1050 1100-1150	Rad Contaminated Patients Physician's Perspectives Class Photo WRAMC-RAMI! NUWAX-8] Nuc Med Sci Officers in the Field	CPT Tupin MAJ Mathewson CPT(P) Connock
1300-1330 1335-1425 1435-1525 1535-1625	LUNCH AFFRI Orientation Non-Ionizing Rad: What's New INRAD Internal Dosimetry	COL Adcock/MAJ Hagan LMD (TBA) MAJ Potter MAJ(P) Williams

21 October 1981

Wednesday

TIME	TITLE	INSTRUCTOR
0800-0850 0900-0950 1000-1050 1100-1150	Rad Waste Management at a MEDCEN Rad Waste Management in the Army Air Gan Technique HSC in Perspective	CPT Cherry Byron Morris MAJ Day LTC Field
1300-1330	LUNCH Army Nuclear Chemical Agency	MAJ Myers
1335-1425	Orientation , Dosimetry: Estimated Fetal	MAJ Wright
1435-1625	Exposure Utilizing Radiographs Instrument and Monitoring Methods for Health Physicists	CPT Cherry
	22 October 1981	
	Thursday	·
0800-0850	American Society of Radiological	Ms Dorothy Foutf
0900-0950 1000-1050 1100-1150	Technologist Society of Nuclear Medicine Nuclear Regulatory Commission Bureau of Radiological Health	Dr. Hendee Mrs. P. Vacca John Villforth
1300-1330 1335-1425	LUNCH DARCOM Orientation American Association of	MAJ Gaston Dr. Wright
1435-1525 1535-1625	Physicists in Medicine Health Physics Society National Committee on Radiation Protection	Mr. Holeman Dr. Taylor
1800-1900 1900-2000 2000-	Banquet Eat Dr. Hendee	
	23 October 1981	
	Friday	
0800-1030 1040-1120 1130-1145 1150-1215	Discussion of Tasks Open Discussion Critique Summary & Closing Remarks LUNCH	MAJ Day All Students All Students MAJ Day
1315-1630	Out-Processing Sign-Out	SM SDO & SDNCO





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MUCLEAR WEAPONS ORIENTATION ADVANCED DOURSE (6302P409 KIRTLAND AIR FORCE BASE, NEW MEXICO, 87117 PDS CODE: EHX, DURATION A 1/3 I

CERTIFICATE of TRAINING

FRANCIS M. GULLICK, Lt Col, USAF

Interservice Nuclear Weapons School

Armed Forces Radiobiology Research Institute

Defense Nuclear Agency

certificate of Completion

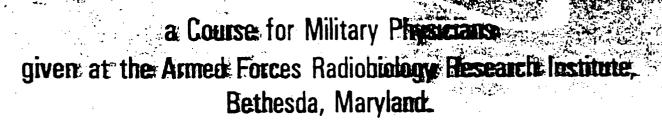
This is to certify that

MAJ Peter H. Myers; MSC, USA

has completed ______ hours of



MEDICAL EFFECTS OF NUCLEAR WEAPONS



4 March 1983
DATE

BOBBY R. ADCOCK Colonel, MSC, USA Director, AFRRI

As an organization accredited for continuing medical education, the Naval Health Sciences Education and Training Command designates this continuing medical activity as meeting the criteria for and credit hours in Category I of the Physician's Recognition Award of the American Medical Association.

CONTENTS

Welcome and Introduction
History of Nuclear Weapons
The Threat and U.S. Concept of Nuclear War
Physical Principles of Nuclear Weapons
Blast and Thermal Effects of Nuclear Weapons
Physical Principles of Ionizing Radiation Effegts
Cellular Radiation Biology
Effects of Ionizing Radiation on Organ Function
Performance Decrement Caused by Ionizing Radiation
The Acute Radiation Syndrome: Diagnosis and Treatment
Nuclear Weapon Fallout
Nuclear Warfare Reporting: Tactical and Strategic L
Medical Operations in Nuclear Wary
Impact of Electromagnetic Radiation
Biomedical Effects of Nonionizing Radiation
Human Experience in Radiation Injury
Nuclear Weapons Accidents
Nuclear Emergency Search Team (NEST)
Radiation-Detecting Devices
Current and Future Directions in Radiobiology Research
Long-Term Effects of Ionizing Radiation
Radiation Sources: Principles and Operations
Potential Hazards of Chemical Agents on the Nuclear Battlefield
Detection and Decontamination of Radiation Casualties
- Radiation Exposure: Values and Risks



DEPARTMENT OF THE ARMY OF TRAINING

This is to certify that

LTC PETER H. MYERS

has successfully completed

THE ARMY MEDICAL DEPARTMENT RADIATION HEALTH SCIENCES COURSE 24-28 Oct 88

Given by: U.S. Army Environmental
Hygiene Agency

Arthur B. Webb

LTC, MS

OAK RIDGE ASSOCIATED UNIVERSITIES

This is to certify that

PETER H. MYERS

has completed

A FIVE-WEEK APPLIED HEALTH PHYSICS COURSE

conducted by Special Training Division of
Oak Ridge Associated Universities
Operating under contract with the
Energy Research and DevelopHent Administration

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Chairm	an opecial Training	Division	

May 30 - June 3, 1977

FIRST WEEK

DATE	TIME	TOPIC	LECTURER	ROOM
Monday,	8:00 AM	Welcome, Registration, Orientation	Beck/Kent	E-4
May 30	9:00 AH	ATOMIC AND NUCLEAR STRUCTURE	PAULSON	E-4
	11:00 AM	Math Review	Beck	E-4
	1:00 PM	INTRODUCTION TO RADICACTIVITY	PAULSON	E-4
	2:30	COMPUTER ORIENTATION	GLEASON	W-14
Tuesday,	8:00 AM	MODES AND RATES OF DECAY	PAULSON	E-4
May 31	9:30 AM	Lab: Computational Techniques	Beck	E-4
	10:30 AM	COUNTING STATISTICS	GLEASON	E-4
	1:00 PM	PARTICLE INTERACTIONS	PAULSON	E-4
	2:30 PM	GAS DETECTORS: G-M COUNTERS	BECK	E-4
	3:30 PM	Lab: HP-1 Laboratory Techniques	Kent/Auxier	W-19
Wednesday	, 8:00 AM	GAMMA INTERACTIONS	PAULSON	E-4
June 1	MA 08:9	Lab: HP-2 G-M Counting	Auxier/Beck	W-15
	1:00 PM	GAS DETECTORS: PROPORTIONAL COUNTERS	KENT	E-4
	2:30 PM	Lab: HP-3 Beta Characteristics	Auxier/Paulson	W-1
Thursday,	MA 00:8	QUANTITIES AND UNITS I	BECK	E-4
June 2	MA 0E: 0	Review & Problem Session	Kent	E-4
	10:30 AM	GAS DETECTORS: IONIZATION CHAMBERS	KENT	E-4
	1:00 PM	SCINTILLATION SPECTROMETRY I	GLEASON	E-4
	2:30 PM	Lab: HP-8 Proportional Counting	Beck/Kent	W-1
Friday,	8:00 AM	QUANTITIES AND UNITS II	BECK	E-4
June 3	9:30 AM	Review and Quiz	Beck/Kent	E-4
	10:30 AM	SCINTILLATION SPECTROMETRY II	GLEASON	E-4
	1:00 PM	BIOLOGY REVIEW	GIST	E-4
	2:30 PM	Lab: HP-5 Gamma Ray Spectrometry	Gleason	W-]

June 5 - 10, 1977

SECOND WEEK

2775	TIME	TOPIC	LECTURER	RO01
Monday,	3:00 AM	SCINTILLATION SPECTROMETRY III	GLEASON	E-4
June 6	9:30 AM	Lab: HP-6 Multichannel Analyzer	Paulson/Gleason	₩-1-
	1:00 PM	RADIATION BIOLOGY I	CLOUTIER	E-4
	2:30 PM	Lab: HP-45 Bio. Effects of Radiation	Gist/Auxier	E-9
Tuesday,	8:00 AM	LIQUID SCINTILLATION COUNTERS	GIST	E-4
June 7	9:30 AM	Lab: HP-20 Liquid Scintillation Counters	Gist/Kent	W-1:
	1:00 PM	RADIATION BIOLOGY II	CLOUTIER	E-4
	2:30 PM	RADIATION PROTECTION GUIDES I	BECK	E-4
Wednesday,	MA 00:8	X-RAY PRODUCTION AND CHARACTERISTICS	CLOUTIER	E-4
June 8	9:30 AM	Review and Problem Session	Kent	E-4
•	10:30 AM	SHIELDING I	BECK	E-4
	1:00 PM	SHIELDING II	KENT	E-4
	2:30 PM	Lab: HP-18 Shielding	Kent/Beck	W-1
Thursday,	MA 00:8	RADIATION PROTECTION GUIDES II	BECK	E-4
June 9	9:30 AM	ACUTE EFFECTS OF RADIATION	ANDREWS	E-4
	10:45 AM	Shielding Evaluation Problem	Kent	E-4
	1:00 PM	IONIZATION SURVEY INSTRUMENTS	KENT	E-4
	2:30 PM	Lab: HP-13 Ionization Survey Meter Characteristics	Beck/Kent	E-4
Friday,	MA 00:8	GEIGER-MUELLER SURVEY INSTRUMENTS	BECK	E-4
June 10	9:00 AM	Lab: HP-21 Condenser R Meter	Beck/Kent	MED
	11:00 AM	Review and Quiz	Beck/Kent	E-4
	1:00 PM	SOURCES OF HEALTH PHYSICS INFORMATION	BECK	E-4
	2:00 PM	Lab: HP-14 G-M Survey Instruments	Beck/Kent	E-4

June 13 - 17, 1977

THIRD WEEK

DATE	TIME	TOPIC	LECTURER	ROOM
Monday,	8:00 AM	SPECIAL SURVEY INSTRUMENTS	KENT	E-4
June 13	9:00 AM	Lab: (A) γ Scintillation Instruments (B) α Instruments	Beck Kent	E-4 E-4
	11:00 AM	NEUTRON PRODUCTION	PAULSON	E-4
	1:00 PM	NEUTRON INTERACTIONS AND DETECTION	PAULSON	E-4
	2:30 PM	Lab: (B) γ Scintillation Instruments (A) α Instruments	Beck Kent	E-4 E-4
Tuesday, June 14	8:00 AM 9:30 AM	STANDARDIZATION Lab: HP-35 Standardization	GLEASON Gleason	E-4 W-14
	1:00 PM	NEUTRON SURVEY INSTRUMENTS		E-4
	2:30 PM	Lab: (A) HP-15 BF ₃ Detectors (B) HP-16 Neutron Survey Instruments	Beck Kent	W-15 E.B.
Wednesday,	MA 00:8	FACILITY DESIGN		E-4
June 15	9:30 AM	Review and Problem Session	Ke nt	E-4
	11:00 AM	NEUTRON SHIELDING		E-4
	1:00 PM	FILM DOSIMETRY	KENT	E-4
	2;30 PM	Lab: (B) HP-15 BF ₃ Detectors (A) HP-16 Neutron Survey Instruments	Beck Kent	W-15 E.B.
Thursday	, 8:00 AM	THERMOLUMINESCENT DOSIMETRY	BECK	E-4
June 16	9:30 AM	Lab: (A) HP-25 Thermoluminescent Dosimetry (B) HP-22 Film Dosimetry	Beck Kent	W-1 W-14
	1:00 PM	INTERNAL DOSIMETRY I	CLOUTIER	E-4
	2:30 PM	Lab: (B) HP-25 Thermoluminescent Dosimetry (A) HP-22 Film Dosimetry	Beck Kent	W-1 W-14
Friday,	MA 00:8	INTERNAL DOSINETRY II	CLOUTIER	E-4
June 17	MA 08:0	Review and Quiz	Beck/Kent	E-4
	MA 00:11	INTERNAL DOSIMETRY III	CLOUTIER	E-4
	1:00 PM	TRITIUM HAZARDS	GIST	E-4
	2:30 PM	Lab: Internal Dosimetry	Cloutier/Kent	E-4

June 20 - 24, 1977

FOURTH WEEK

DATE	TIME	TOPIC	LECTURER	MOOR
Monday,	MA CO:3	RADIATION ACCIDENTS	LUSHBAUGH	E-4
June 20	9:00 AM	PROTECTIVE CLOTHING AND RESPIRATORS	BERGER	E-4
	10:30 AM	Lab: Protective Clothing & Respirators C.	Berger/Beck	E.B.
	1:00 PM	BIOASSAY AND WHOLE-BODY COUNTING	CLOUTIER	E-4
	3:00 PM	Lab: HP-32 Bioassay	Beck/Kent	W-15
Tuesday,	8:00 AM	ELEMENTS OF EMERGENCY PLANNING	SMALLEY .	E-4
June 21	9:30 AM	MEDICAL ASPECTS OF INTERNAL CONTAMINATION		E-4
	10:30 AM	ACCIDENT DOSIMETRY	BECK	E-4
	1:00 PM	EMERGENCY PROCEDURES	BECK	E-4
	2:30 PM	Lab: Accident Dosimetry	Beck/Kent	W-14
Wednesday,	MA 00:8	ADVANCED ABSOLUTE COUNTING	GLEASON	E-4
June 22	9:30 AM	Review and Problem Session	Kent	E-4
	11:00 AM	SEMICONDUCTOR DETECTORS	KENT	E-4
	1:00 PM	PARTICLE SPECTROSCOPY	KENT	E-4
	2:30 PM	Lab: (A) HP-28 Particle Spectroscopy (B) HP-38 Advanced Absolute Counting	Kent/Paulson Gleason	W-15 W-14
Thursday,	8:00 AM	AIR SAMPLING AND ANALYSIS		E-4
June 23	9:30 AM	Lab: (B) HP-28 Particle Spectroscopy (A) HP-38 Advanced Absolute Counting	Kent/Paulson Gleason	W-15 W-14
	1:00 PM	NEUTRON ACTIVATION ANALYSIS	GLEASON	E-4
	2:30 PM	Lab: (A) HP-36 Air Sampling (B) HP-42 Neutron Activation Analysis	Kent/Beck Paulson/Gleason	W-15 E.B.
Friday,	8:00 AM	ENVIRONMENTAL MONITORING	GIST	E-4
	MA 06:6	Review and Quiz	Beck/Kent	E-4
	11:00 AM	CRITICALITY AND FISSION	CLOUTIER	E-4
	1:00 PM	DECONTAMINATION	KENT	E-4
	2:30 PM	Lab: (A) HP-42 Neutron Activation Analysis (B) HP-36 Air Sampling	Gleason/Paulson Beck/Kent	E.B. W-15
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June 27 - July 1, 1977

FIFTH WEEK

DATE	TIME	TOPIC	LECTURER	2002
Honday,	3:00 AM	WATER SAMPLING AND AMALYSIS		2-4
June 27	9:30 AM	Lab: (B) Decontamination	Beck/Kent	N-15
	1:00 PM	CONTAMINATION & SMEAR SURVEYS	BERGER	E-4
	2:30 PM	Lab: (A) HP-33 Decontamination (B) HP-37 Water Analysis	Beck/Kent Kent/Beck	M-18 M-18
Tuesday,	8:00 AM	LOW LEVEL COUNTING	GLEASON	E-4
June 28	9:30 AM	Lab: HP-12 Low Level Counting	Gleason/Paulson	W-1!
	1:00 PM	CRITICALLITY SAFETY		E-4
	2:30 PM	Lab: Practice Survey	. Beck/Kent	E-4
Wednesday,	8:00 AM	WASTE DISPOSAL	BERGER	E-4
June 29	9:30 AM	Review and Problem Session	Kent	E-4
	11:00 AM	X-RAY FLUORESCENCE	PAULSON	E-4
	1:00 PM	TRANSPORTATION		E-4
	2:30 PM	Lab: (A) HP-47 X-Ray Fluorescence	Paulson/Gleason	E.B
Thursday,	8:00 AM	SEALED SOURCE DESIGN AND TESTING	BERGER	E-4
June 30	9:30 AM	LICENSING REGULATIONS	BECK/BERGER Cloutier/Kent	E-4
	1:00 PM	PUBLIC INFORMATION	ALEXANDER	E-4
	2:00 PM	Field Exercise	Beck/Kent	E-4
Friday,	8:00 AM	Critique	Beck/Kent	E-4
July 1	MA 00:0	Final Exam	Beck/Kent	E-4
	10:00 AM	HEALTH PHYSICS CHALLENGES	CLOUTIER	E-4
•	11:00 AM	Commencement	Beck/Kent	E-4
	12:00 N	END OF COURSE		

- 880 STARCREST DR APT TA BAN ANTONIO, TEXAS

DATE AND PLACE OF BIRTH:

GRADUATE, BA. UNIV OF KANSAS

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1990 HEALTH PHYSICS CERTIFICATION EXAMINATION PREPARATION COURSE

Preliminary Schedule

Date	Topic	Assignment
Jan 11	Introduction to the Course Charlie Willis, Director, 301-492- Joel Rabovsky, Co-director, 202-60	
Jan 18	Radioactivity & Decay Charlie Willis, NRC	Cember Chapter 4 Prob. 1, 2, 4, 5, 6, & 15; Exam 28: #10
Jan 25	Interaction With Matter James Rogers, GU, 202-687-2173	Cember Chapter 5 Probs 1, 3, 19-21, 25, 28, 36
Feb 1	External Radiation Dosimetry Charlie Willis	Cember Chapter 6 Prob. 1-6, 13-15
Feb 8	Shielding Francis M. Roddy, Bechtel 301-258-3097	Cember Chapter 10 Ex 28 #4; Ex 29 #5 Probs. 1,2,3,5,6,8,13,16
Feb 15	Internal Dosimetry Allen Brodsky, 301-840-5443	Cember Chapter 8 Ex 28: 3, 5; Ex 29 9
Feb 22	Bioassay Allen Brodsky	Handouts
Mar 1	TLD & Film Dosimetry, Eric E. Kearsley, 301-295-5414	Cember, pp 257-262 Exam 28: 11 & 13
Mar 8	Instrumentation & Spectroscopy Timothy Osborn, ESA, 301-498-1514	Cember Chapter 9 Problems 12-20
Mar 15	Biological Effects of Radiation Kenneth Mossman, GU, 202-653-5505	Cember Ch 7 & NCRP 91 Exam 29: 1 & 6
Mar 22	Criticality Charlie Willis	Cember Chapter 12 Problems: all Ch. 12
Mar 29	Environmental Health Physics Harold Paterson, NRC, 301-492-3640	Cember pp 339-352 Ex 28 8, 14 Ex 29 7
Apr 5	Break: Chapter Meeting Recommended	
Apr 12	Industrial Radiography Steve McGuire, NRC, 301-492-3757	NUREG/BR-0024
	Statistics Warren Keene, CU, 202-635-5206	Cember pp 282-290 Problems 2, 3, 5, 7
Apr 19	Transportation / Alfred Grella, NRC, 301-492-3381	Handouts

Apr 26	Medical Health Physics Coleman Rosen, Fairfax, 703-698-3	705
May 3	Reactor Health Physics, John Serabian, CIA,	Handouts Exam 29: #3
May 10	Radon Robert Watters, ENRAD, 301-948-80	
	Accelerator Health Physics Lester A. Slaback, NIST, 975-5810	
May 17	Beta Dosimetry Sidney Porter, Porter Cons., 215-	Handouts
May 24	Uranium Fuel Cycle / Frank Congel, NRC, 301-492-1091	Handouts Exam 29: #8
May 31	Practice Examination John Serabian Charlie Willis	Handouts

NAME		COMPANY	ADDRESS				5 44 5 44 5
							PHONE
Arnaudo	Joseph	FDA	1390 Piccard Dr.	Rockville	Ю	20850	427-1050
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Camper	Larry	MRC	(<u>Washington</u>	DC	20555	492-0573
Clark	James	MIST	Bldg 235, Rm A132	Rockville	MD	20899	975-8516
Dolce	Kethleen	MIH	9000 Rockville Pk	Bethesda	Ю	20892	496-574
Donamus	Staven	Meval Hed. (: .	Bethesde	10	20814	295-5 422
Foraz	Yawar	WUS	910 Clopper Rd	Gei thereburg	HD.	20877	258-8750
Fenton	Horm	MPS1	4 Research Pt #148	Rockville	HD.	20850	670-1818
Haapala	Marvin		1307 Lake Eleo Dr.	Billings	MT.	59 105 (406)	259-4443
Hill	Pan	MPS 1	4 Research PL 8140	Rockville		20850 (800)	
Kerns	Kenneth	DMA/AFRRI		Bethesda		20814-5145	
Krueger	Suzanne	K-G HP	8114 Sandpiper Cr	Baltimore		21236	529-4440
Lavake	Thomas	MIK	9000 Rockville Pk.	Sethescie	MD.	20892	496-5774
Liotta	Philip	Naval Med C	Code 047	Bethesda .	HD:	20814	295-5426
Melanson	Mark	Army	107 Chell Rd.	Joppe	ND	21085	679-8528
Mengers	Timothy	MIST	Bldg 235 Am A106	Gal thersberg	M	20899	975-5810
Hyers	Pete	Army	Walter Reed	Washington	DC	20307	427-5104
Nicholson	Nora	VEPCO	PO Box 402	Hineral	VA	23117	894-2419
Numerk	Neil	ERC Env.	321 Germantoun Rd.	Feirfax	VA	22030	246-0421
Ortando	Nick	NPS1	4 Research Pt #140	Rockville	M	20852	670-1818
Pierpont	Sujita	U. HD	Bidg 018 Rm 1102	College Park	HD	20742	454-5294
Rao	Kimi	MSWC	New Hampshire Ave	Silver Spring	M	20906-5000	394-4292
Schlueter	Janet	MRC	Mail Stop 6-H-3	Weshington		20555	492-0633
Shandruk	Petro	FDA	5600 Fishers Ln	Rockville		20857	443-2850
Vassar ,	John	Edison	6026 Tree Swallow	Columbia	MD	21044	992-4217
Matson	Bruce	BGE	Calvert Cliffs	Lusby	M D	20657	260-4740
Webb	Arthur	AFRRI	Hat. Haval Hed. Ct	.Sethesda	ю	20814-5145	
Williams	Betty Ann	AFRR1	Nat. Navel Hed. Ct	.Bethesda		20814-5145	
Zarembe	Loren	CDRH	1390 Piccard Dr.	Rockville		20850	427-1050