

MATERIALS LICENSE

Amendment No. 21

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.

<p>Licensee</p> <p>1. Department of the Army Walter Reed Army Medical Center</p> <p>2. Washington, D. C. 20307-5001</p>	<p>In accordance with letter dated July 11, 1991,</p> <p>3. License number 08-01738-03 is amended in its entirety to read as follows:</p> <hr/> <p>4. Expiration date November 30, 1996</p> <hr/> <p>5. Docket or Reference No. 030-06895</p>
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<p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Cobalt 60</p> <p>B. Cesium 137</p> <p>C. Cesium 137</p>	<p>7. Chemical and/or physical form</p> <p>A. Sealed sources (AECL Models C-166, C-167 or C-198)</p> <p>B. Sealed sources (AECL Model C-161 Type 8)</p> <p>C. Sealed sources</p>	<p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. 3,500 curies per source and 70,000 curies total</p> <p>B. 2,100 curies per source and 8,400 curies total</p> <p>C.</p>
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<p>9. Authorized use</p> <p>A. To be used in AECL Gammacell 220 irradiator for medical research and development and radiation dosimetry.</p> <p>B. To be used in AECL Gammacell 40 Irradiator for small animal irradiation, medical research, development and radiation dosimetry.</p> <p>C. To be used in a [ ] Irradiator to irradiate blood products.</p>
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CONDITIONS

- 10. License material shall be used at WRAMC, Washington, D.C.
- 11. A. Licensed material shall be used by individuals who have satisfactorily completed the training program outlined in the application dated March 18, 1991 and have been designated by the individual approved by the Radiation Control Committee. Records of training shall be maintained by the licensee.

B. The Radiation Safety Officer for this license is Major Arthur G. Samiljan.

Information in this record was deleted in accordance with the Freedom of Information Act, exemptions 2 + b  
FOIA 2006-0238

OFFICIAL RECORD COPY ML 10

Handwritten initials and numbers: JJ/6, Ex 2

MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License number

08-01738-03

Docket or Reference number

030-06895

Amendment No. 21

(Continued)

CONDITIONS

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 a 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.
- 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.

MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License number

08-01738-03

Docket or Reference number

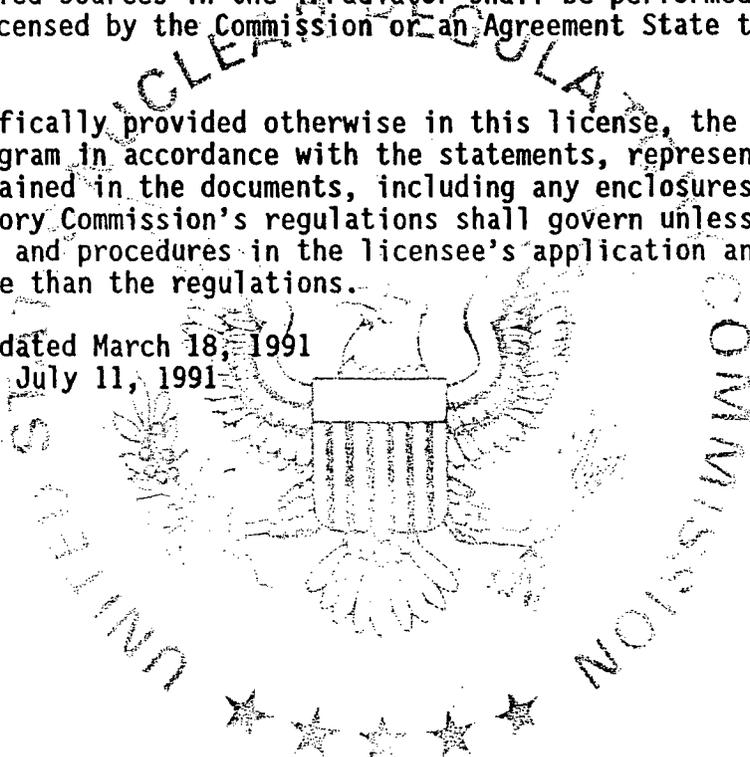
030-06895

Amendment No. 21

(13. Continued)

CONDITIONS

- 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. 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 18, 1991
  - B. Letter dated July 11, 1991



For the U.S. Nuclear Regulatory Commission

Original Signed By:  
Judith A. Joustra

By

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

Date

SEP 17 1992

SEP 17 1992

License No. 08-01738-03  
Docket No. 030-06895  
Control No. 115017

Department of the Army  
Office of the Surgeon General  
ATTN: Peter H. Myers  
Lieutenant Colonel  
HQDA (DASG-PSP)  
5109 Leesburg Pike  
Falls Church, Virginia 22041-3258

Dear Colonel Myers:

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."

With the issuance of License No. 19-11831-01, to USAMRIID, those sources previously listed under your license and belonging to USAMRIID, have been deleted.

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

Department of the Army

-2-

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:  
Judith A. Joustra

Francis M. Costello, Chief  
Industrial Applications Section  
Division of Radiation Safety  
and Safeguards

Enclosures:

1. Amendment No. 21
2. Requirements for Materials License

DRSS:RIK  
Kirkwood/gc

09/15/92

DRSS:RI  
J. Costello

09/14/92

TYPE <input type="checkbox"/> VISIT <input type="checkbox"/> CONFERENCE <input type="checkbox"/> TELEPHONE			ROUTING NAME/SYMBOL    INT	
Location of Visit/Conference:			<input type="checkbox"/> INCOMING <input type="checkbox"/> OUTGOING	
NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU Dave BURTON	ORGANIZATION (Office, dept., bureau, etc.) WRAMC	TELEPHONE NO. (301) 427-5104		
SUBJECT Correct WRAMC license source limits to allow for source changes / Delete USAMRIID sources				

**SUMMARY**

1. As per attached letter of 7/30/91, USAMRIID has licensed its irradiators itself. Mr. Burton agreed to delete USAMRIID sources along with amendment to change RSO and increase source limits.

**ACTION REQUIRED**

NAME OF PERSON DOCUMENTING CONVERSATION A. Kirkwood	SIGNATURE A. Kirkwood	DATE 8/19/92
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**ACTION TAKEN**

"OFFICIAL RECORD COPY" ML 10

SIGNATURE	TITLE	DATE
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REPLY TO  
ATTENTION OF

DEPARTMENT OF THE SURGEON GENERAL  
OFFICE OF THE SURGEON GENERAL  
5109 LEESBURG PIKE  
FALLS CHURCH, VA 22041-3258

03520

July 30, 1991

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 an application for a new Byproduct Material License (gammacell, sealed-source irradiators) from the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID), Fort Detrick, Maryland, 21701-5011.

This organization has historically been covered under a license issued to the Walter Reed Army Medical Center. Efforts have been underway since last year to develop an application for a separate license. The growth of USAMRIID and our desire to align license accountability under appropriate Army command channels, where feasible, have prompted this application.

Recommend approval.

Sincerely,

Peter H. Myers  
Lieutenant Colonel, U.S. Army  
Radiological Hygiene Consultant

Enclosure

115186

"SECTION COPY"

AUG 02 1991

030-06895



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



REPLY TO  
ATTENTION OF:

HSHL-HP (385-11m)

11 JUL 1991

MEMORANDUM 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 LTC Peter H. Myers to MAJ Arthur G. Samiljan. MAJ Samiljan has been assigned as the Chief, Health Physics Office at Walter Reed AMC since June 1991, before that he was the Chief, Operations Branch of the Health Physics Office and alternate RPO at WRAMC since August 1990. A Training and Experience Form and a Curriculum Vitae for MAJ Samiljan are enclosed (Enclosures 1 and 2).

2. Please be advised that Col Joan T. Zajtchuk is the new Deputy Commander for Clinical Services and in that capacity is the new Chairman of the Radiation Control Committee of Walter Reed Army Medical Center.

FOR THE COMMANDER:

2 Encls

  
ROY D. QUICK, JR.  
MAJ, MS  
Executive Officer

Copies Furnished

Commander, US Army Health Services Command, ATTN: HSCL-P, Fort  
Sam Houston, TX 78234-6000  
HQDA (SGPS-PSP-E), 5109 Leesburg Pike, Falls Church, VA 22041-  
3258

FILE FREIGHT

115017

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JUL 17 1991

**TRAINING AND EXPERIENCE  
OF AUTHORIZED RADIOISOTOPE USERS**

1. NAME OF AUTHORIZED USER (Last, First, MI)  <b>SAMILJAN, ARTHUR G.</b>	2. STATE OR TERRITORY IN WHICH LICENSED:  (MD, DDS, DVM, etc.)
--	--

RANK GRADE  <b>MAJ</b>	ORGANIZATION  <b>WRAMC</b>	ORGANIZATIONAL DIVISION  <b>Health Physics</b>	BLDG./ROOM NO.  <b>Bldg 188 FGS</b>	WRAMC AUTHORIZATION NO.  <b>221</b>
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**3. CERTIFICATION**

SPECIALTY BOARD <b>A</b>	CATEGORY <b>B</b>	MONTH AND YEAR CERTIFIED <b>C</b>

**4. FORMAL EDUCATION                      HIGHEST ACADEMIC DEGREE ATTAINED**

Higher Educational Institutions Attended	Type of Program Pursued and Dates of Attendance	Degree, Diploma or Certificate Received and Date
a. <u>University of FL</u>	<u>MS Env Eng (Rad Hlth)</u>	<u>MS [ ]</u>
b. _____	_____	_____
c. _____	_____	_____
d. _____	_____	_____

**5. TRAINING RECEIVED IN BASIS RADIOISOTOPE HANDLING TECHNIQUES**

FIELD OF TRAINING <b>A</b>	LOCATION AND DATE(S) OF TRAINING <i>(Include course title if known)</i> <b>B</b>	TYPE AND LENGTH OF TRAINING	
		LECTURE LABORATORY COURSES <i>(Hours)</i> <b>C</b>	SUPERVISED LABORATORY EXPERIENCE <i>(Hours)</i> <b>D</b>
a. RADIATION PHYSICS AND INSTRUMENTATION	University of Florida Kirtland AFB, AFRRRI	60	20
b. RADIATION PROTECTION	"	60	20
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY	"	100	20
d. RADIATION BIOLOGY	"	60	20
e. RADIOPHARMACEUTICAL CHEMISTRY			

*Ex 6*

CIRRICULUM VITAE

for

ARTHUR G. SAMILJAN, Major

DATE AND PLACE OF BIRTH: I I

YEARS OF ACTIVE MILITARY SERVICE: Over 18 years

PRESENT ASSIGNMENT: (21 Jun 91 to present)  
Chief, Health Physics Office; Alternate RPO,  
Walter Reed Army Medical Center,  
Washington, DC 20307-5001

MILITARY EDUCATION (pertinent to radiation protection):

1. Medical Effects of Nuclear Weapons Course, 8-12 Sep 86  
Armed Forces Radiobiology Research Institute  
Bethesda, Maryland
2. Army Medical Department Physics and Military Medicine Course,  
26-30 Oct 87  
U.S. Army Environmental Hygiene Agency  
Aberdeen Proving Ground, Maryland  
  
(included presentations on management of radiation protection  
programs and topical radiation protection issues)
3. Radiological Hazards Associated with Depleted Uranium  
Munitions Course, 16-20 Nov 87  
U.S. Army, Belvoir Research, Development & Engineering  
Center, Fort Belvoir, Virginia
4. Laser Microwave Hazards Workshop, 25-29 Apr 88  
U.S. Army Environmental Hygiene Agency  
Aberdeen Proving Ground, Maryland
5. The Army Medical Department Radiation Health Sciences Course,  
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)
6. Senior Officer Nuclear Accident Course, 24-27 Apr 89  
InterService Nuclear Weapons School  
Kirtland Air Force Base, New Mexico

Ex 6

MILITARY EDUCATION (continued):

7. Management of Radiation Accidents and Emergency Preparedness Training Course, 5-9 Jun 89  
U.S. Army, Belvoir Research, Development & Engineering Center, Fort Belvoir, Virginia
8. Nuclear Weapons Incident Seminar, 7-8 Mar 91  
Naval Base  
Norfolk, Virginia
9. Medical X-Ray Survey Techniques Course, 15-26 Apr 91  
Academy of Health Sciences  
Fort Sam Houston, Texas

CIVILIAN EDUCATION (relative to radiation protection):

Graduate Study leading to Master of Science Degree in Environmental Engineering (emphasis in Health Physics)  
Aug 84 - Dec 85  
University of Florida  
Gainesville, Florida

HEALTH PHYSICS EXPERIENCE:

1. Nuclear, Biological, and Chemical Officer  
Mar 76 - Jun 77  
44th Medical Brigade  
Fort Bragg, North Carolina  
  
(included designing and supervising the training of 100 personnel in battle field radiation detection, survey techniques, monitoring, decontamination, and protection)
2. Nuclear, Biological, and Chemical Officer  
Jun 77 - Dec 78  
5th General Hospital  
Bad Cannstatt, Germany  
  
(included designing and supervising the training of 350 personnel in battle field radiation detection, survey techniques, monitoring, decontamination, and protection)
3. Manager, Department of the Army, Nuclear Test Personnel Review  
Jan 86 - Dec 87  
Environmental Support Group  
Washington, DC  
  
(included the identification, dose assessments, and notification of all Army personnel who participated in the atmospheric nuclear testing program from 1944 to 1963.

4. Medical Health Physics Consultant  
Dec 87 - Jun 89  
Headquarters, Army Materiel Command  
Office of the Command Surgeon  
Alexandria, Virginia

(included being the Commanding General's action officer for health aspects of ionizing and nonionizing radiation as applied to the command's workforce, and technical advisor on health hazard assessment of new materiel and to related materiel management processes.)

5. Contract Manager, Johnston Island Plutonium Clean-up Project  
Jun 89 - Aug 90  
Field Command  
Defense Nuclear Agency  
Johnston Atoll

(included planning, directing, and supervising the clean-up project, conducting radiological site surveys, and establishing procedures for packaging, storing, and disposal of radioactive waste)

6. Chief, Operations Branch/Assistant RPO  
Aug 90 - Jun 91  
Health Physics Office  
Walter Reed Army Medical Center  
Washington, DC

(included reviewing x-ray compliance surveys and radiisotope laboratory room surveys, monitoring radiation therapy procedures, performing x-ray shielding evaluations and dose assessments, and assisting the RPO in the preparation and execution of all radiation protection policies in support of the medical center's NRC license, and ionizing and nonionizing radiation producing devices)

Armed Forces Radiobiology Research Institute

Defense Nuclear Agency

# Certificate of Completion

This is to certify that

MAJ Arthur G. Samuel Jan  
F [redacted] EX 6

has completed 29 hours of

## MEDICAL EFFECTS OF NUCLEAR WEAPONS

conducted by the  
Armed Forces Radiobiology Research Institute,  
Bethesda, Maryland.



8-12 September 1986

DATE

*James J. Conklin*

JAMES J. CONKLIN  
Colonel, USAF, MC  
Director

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 29 credit hours in Category I of the Physician's Recognition Award of the American Medical Association.

EX 6

## CONTENTS

Welcome and Introduction . . . . .	A
Military Radiobiology: A Perspective . . . . .	B
Physical Principles of Nuclear Weapons . . . . .	C
Blast and Thermal Effects of Nuclear Weapons . . . . .	D
Physical Principles of Ionizing Radiation Effects . . . . .	E
Cellular Radiation Biology . . . . .	F
Effects of Ionizing Radiation on Organ Function . . . . .	G
Performance Decrement Caused by Ionizing Radiation . . . . .	H
The Acute Radiation Syndrome: Diagnosis and Treatment . . . . .	I
Current Concepts in Management of Radiation Injuries and Associated Trauma	J
Medical Operations in Nuclear War . . . . .	K
Impact of Electromagnetic Radiation . . . . .	L
Human Experience in Radiation Injury . . . . .	M
Nuclear Weapons Accidents . . . . .	N
Radiation-Detecting Devices . . . . .	O
Fallout: Its Characteristics and Management . . . . .	P
Thermal Trauma in Nuclear Warfare . . . . .	Q
Long-Term Effects of Ionizing Radiation . . . . .	R
Radiation Sources: Principles and Operations . . . . .	S
Radiation Pathology . . . . .	T
Detection and Decontamination of Radiation Casualties . . . . .	U
Radioprotectants . . . . .	V
Internal Contamination With Medically Significant Radionuclides . . . . .	W
Psychological Effects of Nuclear Weapons . . . . .	X



DEPARTMENT OF THE ARMY  
**CERTIFICATE OF TRAINING**

This is to certify that

MAJ ARTHUR G. SAMILJAN

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*

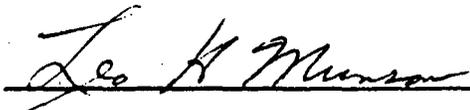
Arthur B. Webb  
LTC, MS  
DRES

# This is to Certify that

MAJ ARTHUR G. SAMILJAN

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has attended the "Radiological Hazards Associated with Depleted Uranium Munitions" training course presented by the United States Army, Belvoir Research, Development and Engineering Center, at Fort Belvoir, Virginia, November 16-20, 1987.



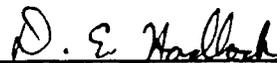
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**L. H. Munson**  
Pacific Northwest Laboratory



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**F. J. Lenoach, Chief**  
Training and Development Division  
Civilian Personnel Office



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**D. E. Hadlock**  
Pacific Northwest Laboratory

RADIOLOGICAL HAZARDS ASSOCIATED  
WITH DEPLETED URANIUM MUNITIONS

COURSE OUTLINE

<u>Topics</u>	<u>Reference Text</u>
- <u>Purpose of Radiation Safety Program</u>	Chapter 3, pages 3-26
Controls	
Regulations	Chapter 6, pages 3-26
Implementation	Chapter 8, pages 15-34
Inspection and Enforcement	
Radiation Safety Program and Depleted Uranium	
- <u>History of Depleted Uranium Production</u>	
- <u>Military Uses of Depleted Uranium</u>	
Uses of Depleted Uranium	
Advantages of Depleted Uranium	
Disadvantages of Depleted Uranium	
- <u>Characteristics of Depleted Uranium</u>	
Isotopic	
Physical Properties	
Chemical Properties	
Nuclear Properties	

Topics

Reference Text

- Uranium Processing

Uranium Processing to Green Salt

Mining

Milling

Conversion

Uranium Processing, Green Salt to Metal

Orange Salt

Green Salt

Metal

Purification

Uranium Metal Processing

Conversion of DU Derby to Components

Conversion of DU Derby to Rod

Conversion of DU Rod to Penetrator

Hazards Associated with Mechanical Processes

Hazards Associated with Machining/Lathing

- Radiation Physics

Natural Radiation

Manmade Radiation

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Isotopes

Chapter 1, pages 5-33

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Topics

Reference Text

Radioactive Decay

Properties of Ionizing Radiation

Radiation Quantities and Units

Types of Radiation Exposure

- Radiation Biology and Toxicology

Chapters 1, pages 31-41

Radionuclide Pathways Into the Body

Chapter 5, pages 3-37

Radionuclide Transport Within the Body

Chapter 7, pages 6-13

Maximum Permissible Concentrations

Threshold Limit Value

- Radiation Protection Program Surveillance

Chapter 4, pages 5-35

Program Administration

Radiological Measurements

Protective Measures

- Dosimetry and Instrumentation

Chapter 2, pages 5-52

Personnel Dosimetry Program

Personnel Dosimetry Types

Factors in Accurate Dose Assignment

Radiation Detector Instruments

Demonstration Workshop

Topics

Reference Text

- Depleted Uranium Storage and Transportation
  - Typical Radiation Levels
  - Transportation and Mechanical Damage
  - Demilitarization
  
- Aerosol Sampling and Environmental Monitoring
  - Aerosol Sampling
    - Respirable Particulates Chapter 4, pages 21-23
    - Routine Air Sampling Chapter 5, page 6
    - Selection of Sampling Locations and Equipment Chapter 13, pages 5-50
    - Sampling Frequency
    - Records
  
  - Environmental Monitoring
    - Relationship to Radiation Safety Program Chapter 4, page 30
    - Elements of the Environmental Monitoring Program Chapter 3, page 8
    - Records Requirements
  
- Fire Hazards of Depleted Uranium Munitions
  - Heat Test (XM774)
  - Heat Test (XM829)
  - Los Alamos Heat Test

Topics

Reference Text

EMERGENCY RESPONSE

- Depleted Uranium Munitions Impact Testing  
Testing Hard and Soft Target Range  
Operations

- Recovery and Restoration  
Property  
Equipment  
Approvals

Chapter 7, pages 14-16  
pages 31-44

- Waste Management

Chapter 10, pages 3-14



DEPARTMENT OF THE ARMY  
**CERTIFICATE OF TRAINING**

This is to certify that

MAJ ARTHUR G. SAMILJAN

has successfully completed

LASER MICROWAVE HAZARDS WORKSHOP 6H-17

25 - 29 April 1988

Given at US Army Environmental Hygiene Agency

*Arthur B. Webb*

ARTHUR B. WEBB  
LTC, MS  
C, Laser Microwave Division

1. USE OF LASERS IN INDUSTRY AND SOCIETY
2. USE OF LASERS IN G. M. OF CANADA
3. BASIC CONCEPTS AND LASER LIGHT PROPERTIES
4. BIOLOGICAL EFFECTS OF LASER LIGHT
5. HAZARDS OTHER THAN LIGHT
6. LASER CLASSIFICATION
7. CONTROL MEASURES



DEPARTMENT OF THE ARMY  
**CERTIFICATE OF TRAINING**

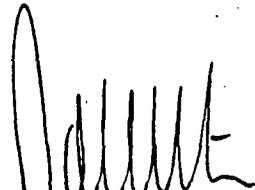
This is to certify that

MAJ ARTHUR G. SAMILJAN

has successfully completed

AMEDD PHYSICS AND MILITARY MEDICINE COURSE  
26 - 30 Oct 87

Given at US Army Environmental Hygiene Agency

  
\_\_\_\_\_  
RALPH R. CARESTIA, COLONEL, MS  
Director, Radiation and Environmental  
Sciences

OFFICIAL RECORD COPY  
ML 10



# The United States Air Force



CERTIFIES THAT

MAJ ARTHUR G. SAMILJAN

HAS SUCCESSFULLY COMPLETED THE  
SENIOR OFFICER NUCLEAR ACCIDENT COURSE (G30ZP0515-001)  
KIRTLAND AIR FORCE BASE, NEW MEXICO 87117  
PDS CODE: NPR DURATION: 3 DAYS (24 HRS)  
AND IS HEREWITH AWARDED THIS

## Certificate of Training

  
WALTER L. BRADSHAW III, Lt Col, USAF  
Commander  
Interservice Nuclear Weapons School

27 Apr 89  
DATE



**This is to Certify that**

---

ART SAMILJAN

---

**has successfully completed**

*Scinta, inc.*

(40 Hours)

5-9 June 1989

**MANAGEMENT OF RADIATION ACCIDENTS and  
EMERGENCY PREPAREDNESS TRAINING COURSE**

**Bernard Shleien, Pharm. D.  
Certified Health Physicist  
American Board of Health Physics  
President, Scinta, Inc.**

# MANAGEMENT OF RADIATION ACCIDENTS and EMERGENCY PREPAREDNESS TRAINING COURSE

## AGENDA

Monday, June 5, 1989

8:30 Introduction

Overview - Dr. B. Shleien  
Pretest - R. Johnson

9:15 Radiation and Radioactivity -

Radiation Basics and Units - T. Osborne

10:15 Coffee

10:30 Sources of Radiation - B. Shleien

11:15 Radiation Bioeffects - B. Shleien

12:00 Lunch

1:00 Principles of Radiation Protection - R. Johnson

1:30 Radiation Standards - R. Johnson

2:00 Coffee

2:15 Radiation Survey Instruments and Operations - T. Osborne

3:00 Exercise - T. Osborne

Demonstration and Use of Survey Meters, Pocket Dosimeters,  
Air Samplers.

Monitoring Exercise

5:00 Adjourn

# Wednesday, June 7, 1989

**8:30 Protective Action Guides and Protective Actions - B. Shleien**

**Plume Pathway  
Ingestion Pathway  
Thyroid Blocking  
Access Control  
Respiratory Protection  
Sheltering  
Evacuation  
Potassium Iodide  
Protective Actions for Food Chain**

**9:30 Coffee**

**9:45 Pre-Hospital Response to Accidents - Video**

**10:15 Radioactive Contamination at the Accident Site - R. Johnson**

**Contamination Control  
Surface Contamination Guides  
Measuring Ground Contamination  
Decontamination Procedures  
Air Monitoring  
Herbage Sampling  
Milk Measurements  
Whole Body Counting and Bioassay  
Meteorological Factors**

**11:30 SOP's for Police, Firemen, and First Responders - B. Shleien**

**12:15 Lunch**

**1:15 Exercise - T. Osborne**

**Hotline and Contamination Control  
Protective Clothing  
Respiratory Protection**

**2:00 Writing an Emergency Response Plan -  
B. Shleien, R. Johnson, T. Osborne**

**Radiation Accident at a Storage Facility  
Materials Common to U.S. Army Facilities**

**5:00 Adjourn**

U.S. Army

This is to certify that

MAJOR ARTHUR G. SAMILJAN

has successfully completed the

MEDICAL X-RAY SURVEY TECHNIQUES COURSE  
6H-F18/323-F18

Given at Fort Sam Houston, Texas

from

15 April 1991

to

26 April 1991



*Dr. P. Hobbaugh*  
Colonel, DC, Dean  
Medical Field Service School

*Paul R. Sheller*  
Colonel, MC  
Acting Commandant

512-221  
512-6632

5H-F18 CLASS 91-1 TEACHING SCHEDULE

WEEK NUMBER: 1

DAY NUMBER: 1

Day	Date	Start	Stop	LP No.	Subject	Instructor	Remarks
MON	15-04-1991	07:00	07:40	85-999-101	Inprocessing	Pavlick	Bring course notebooks for students, post classroom number on door of 0410, remind students to always bring scientific calculator
		07:40	08:00	76-350-332	Radiation Safety Briefing	Bland	Read Christensen's Chapter 26 (pp 401 - 406), DD 1952, Slides
		08:00	08:20	85-999-102	Course Opening	Gaston	
		08:30	09:10	76-350-300	Overview of Diagnostic Radiology	Bresell	Slides
		09:20	11:00	76-350-305	Production of X-rays	Lee	Read Christensen's Chapter 2, Slides
		11:10	11:55	76-350-900	Lunch	Staff	
		12:05	13:50	76-350-310	X-ray Generators	Bland	Read Christensen's Chapter 3, Slides
		14:00	15:10	76-350-315	Interactions Between X-rays and Matter	Schlapper	Read Christensen's Chapter 4, Slides
		15:20	16:35	76-350-320	Attenuation of X-rays	Collins	Read Christensen's Chapter 5, Slides

DAY NUMBER: 2

Day	Date	Start	Stop	LP No.	Subject	Instructor	Remarks
TUE	16-04-1991	07:30	09:10	76-350-325	Measurement of X-rays	Lee	Read Mimeo 76-350-325 Prior to Class, Slides
		09:20	10:05	76-350-330	Filters, Collimators, and Grids	Collins	Read Christensen's Chapters 6, 7, and 8, Slides
		10:15	11:00	76-350-355	The Image Receptor	Schlapper	Read Christensen's Chapters 10 and 11, Slides
		11:10	11:55	76-350-395	Operation and Limitation of Selected	Collins	Slides, MDH, Timer, Light Meter, kVp Meter

## 6H-F18 CLASS 91-1 TEACHING SCHEDULE

14:00 16:35 76-350-380 Federal Performance Standards Martin Browse 21 CFR Subchapter J, TB MED 521, Slides

DAY NUMBER: 4

Day	Date	Start	Stop	LP No.	Subject	Instructor	Remarks
HR	18-04-1991	07:30	08:10	76-350-350	Review of Labs II - IV	Bresell	
		08:25	11:55	76-350-425	Lab VII - Survey of Mobile Units	Staff	Group A - Lab VII; X-ray Survey Kit
		08:25	11:55	76-350-420	Lab VIII - Survey of Fluoroscopic Unit	Staff	Group B - Lab VIII; X-ray Survey Kit
		08:25	11:55	76-350-415	Lab IX - Survey of General Purpose Radiographic Unit	Staff	Group C - Lab IXb; X-ray Survey Kit
		08:25	11:55	76-350-415	Lab IX - Survey of General Purpose Radiographic Unit	Staff	Group D - Lab IXa; X-ray Survey Kit
		12:05	12:55	76-350-900	Lunch	Staff	
		13:05	16:35	76-350-420	Lab VIII - Survey of Fluoroscopic Unit	Staff	Group A - Lab VIII; X-ray Survey Kit
		13:05	16:35	76-350-425	Lab VII - Survey of Mobile Units	Staff	Group B - Lab VII; X-ray Survey Kit
		13:05	16:35	76-350-415	Lab IX - Survey of General Purpose Radiographic Unit	Staff	Group C - Lab IXa; X-ray Survey Kit
		13:05	16:35	76-350-415	Lab IX - Survey of General Purpose Radiographic Unit	Staff	Group D - Lab IXb; X-ray Survey Kit

DAY NUMBER: 5

Day	Date	Start	Stop	LP No.	Subject	Instructor	Remarks
FRI	19-04-1991	07:30	11:00	76-350-415	Lab IX - Survey of General Purpose Radiographic Unit	Staff	Group A - Lab IXa; X-ray Survey Kit

6H-F18 CLASS 91-1 TEACHING SCHEDULE

14:00	15:40	76-350-375	Legal Aspects of Occupational Exposure	Schlapper	Slides, Calculators
15:50	16:35	85-999-103	Open (Research/Study)	Staff	

DAY NUMBER: 2

Day	Date	Start	Stop	LP No.	Subject	Instructor	Remarks
TUE	23-04-1991	07:30	08:15	76-350-470	Organ Dose Estimation in Diagnostic	Bland	Slides, Overheads, Scientific Calculator
		08:25	09:10	76-350-475	Selected Diagnostic X-ray Radiation Protection Survey	Schlapper	Slides
		09:20	10:05	76-350-500	JCAHO Standards	Marx	Slides, Overheads, Scientific Calculator
		10:15	11:55	76-350-900	Lunch	Staff	
		12:05	16:35	76-350-385	X-ray Survey Data Analysis Practical Exercise	Bresell	X-ray Survey Form, Overheads, Calculator

DAY NUMBER: 3

Day	Date	Start	Stop	LP No.	Subject	Instructor	Remarks
WED	24-04-1991	07:30	09:25	76-020-435	Examination II: Survey of General Purpose	Staff	Group 1a - Exam IIb, X-ray Survey Kit
		07:30	09:25	76-020-435	Examination II: Survey of General Purpose	Staff	Group 2a - Exam IIa; X-ray Survey Kit
		07:30	09:25	76-020-445	Examination IV: Survey of Mobile Unit	Staff	Group 3a - Exam IV; X-ray Survey Kit
		07:30	09:25	76-020-440	Examination III: Survey of Fluoroscopic Unit	Staff	Group 4a - Exam III; X-ray Survey Kit
		07:30	09:10	76-010-395	Examination I: Principles of X-ray Production, Image	Staff	Group B - Exam I; Scientific Calculator

6H-F18 CLASS 91-1 TEACHING SCHEDULE

14:30	16:35	85-999-103	Open (Research/Study)	Staff	Group B
14:35	16:30	76-020-440	Examination III: Survey of Fluoroscopic Unit	Staff	Group 1a - Exam III; X-ray Survey Kit
14:35	16:30	76-020-445	Examination IV: Survey of Mobile Unit	Staff	Group 2a - Exam IV; X-ray Survey Kit
14:35	16:30	76-020-435	Examination II: Survey of General Purpose	Staff	Group 4a - Exam IIb; X-ray Survey Kit
14:35	16:30	76-020-435	Examination II: Survey of General Purpose	Staff	Group 3a - Exam IIa; X-ray Survey Kit

DAY NUMBER: 4

Day	Date	Start	Stop	LP No.	Subject	Instructor	Remarks
THR	25-04-1991	07:30	09:25	76-020-435	Examination II: Survey of General Purpose	Staff	Group 1b - Exam IIb; X-ray Survey Kit
		07:30	09:25	76-020-435	Examination II: Survey of General Purpose	Staff	Group 2b - Exam IIa; X-ray Survey Kit
		07:30	09:25	76-020-445	Examination IV: Survey of Mobile Unit	Staff	Group 3b - Exam IV; X-ray Survey Kit
		07:30	09:25	76-020-440	Examination III: Survey of Fluoroscopic Unit	Staff	Group 4b - Exam III; X-ray Survey Kit
		07:30	09:10	76-010-395	Examination I: Principles of X-ray Production, Image	Staff	Group A, Scientific Calculator
		09:20	09:50	85-999-103	Open (Research/Study)	Staff	Group A
		10:00	10:45	76-350-405	Exam I Critique	Lee	Group A

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6H-F18 CLASS 91-1 TEACHING SCHEDULE

14:35	16:30	76-020-445	Examination IV: Survey of Mobile Unit	Staff	Group 2b - Exam IV; X-ray Survey Kit
14:35	16:30	76-020-435	Examination II: Survey of General Purpose	Staff	Group 4b - Exam IIb; X-ray Survey Kit
14:35	16:30	76-020-435	Examination II: Survey of General Purpose	Staff	Group 3b - Exam IIa; X-ray Survey Kit

DAY NUMBER: 5

Day	Date	Start	Stop	LP No.	Subject	Instructor	Remarks
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FRI	26-04-1991	07:30	10:05	76-350-445	Radiation Protection Program Management Seminar	Staff	
		10:15	11:00	76-999-101	Critique and Graduation	Gaston	Critique Sheets

NUCLEAR WEAPON INCIDENT SEMINAR- 7-8 MAR 1991

AGENDA

7 MAR

0630-0755	REGISTRATION/CONTINENTAL BREAKFAST (COLLECTION OF ORDERS)	
0800	OVERVIEW/SEMINAR OBJECTIVES	CAPT S. M. MONDUL, USN DIRECTOR OF OPERATIONS
0810	WELCOMING REMARKS	RADM B. E. TOBIN, JR., USN COMMANDER, NAVA BASE, NORFOLK, VA
0820	CINCLANTFLT REMARKS	MR. WILLIAM H. AUSTIN, JR. NUCLEAR WPNS READINESS OFFICER
0830	DAMASCUS, ARKANSAS INCIDENT '80 15 MIN VHS TAPE	CAPT S. M. MONDUL, USN DIRECTOR OF OPERATIONS
0850	INITIAL RESPONSE FORCE	CDR S. KOTZ, USN PUBLIC WORKS OFFICER/ DISASTER PREPAREDNESS OFFICER
0920	SERVICE RESPONSE FORCE OPS	CAPT S.M. MONDUL, USN DIRECTOR OF OPERATIONS
0950	SECURITY	CAPT DONALD R. DENAULT, USN DIRECTOR OF SECURITY
1020	BREAK	
1035	WEAPONS RECOVERY	CAPT MICHAEL A. MURRAY, USN COMEODGRUTWO (PRI) CDR THOMAS M. LIGON, USN CHIEF STAFF OFFICER (SEC)

1105	PUBLIC AFFAIRS	LCDR MIKE TODD, USN PUBLIC AFFAIRS OFFICER MRS JUDY CONDRA, DEPUTY PAO (SEC)
1135	LUNCH	
1230	FLTIMGCOMLANT	LT STEVEN M. HOWELL, USN FLTIMAGCOMLANT
1300	COMMUNICATIONS	MR. PAUL W. POISSON AREA OPERATIONS OFFICER
1330	LOGISTIC SUPPORT	LCDR STAN HETTICH, USN SRF SUPPLY & PROCUREMENT OFFICER
1400	LEGAL	CAPT JOHN P. CLUM, USN STAFF JUDGE ADVOCATE
1430	BREAK	
1450	RECOVERY OPERATIONS	LCDR ROBERT EADIE, USN BASE CIVIL ENGINEER
1520	RADIOLOGICAL HEALTH/SAFETY	CDR J. P. McBRIDE, MC NUCLEAR MEDICINE OFFICER/ LCDR ANTHONY R. PULCRANO, MSC RADIATION HEALTH OFFICER
1550	FRIGID DIGIT 90 EXERCISE/ LESSONS LEARNED	CAPT ROGER A. FRANCIS/ CDR MICHAEL D. TEMPLE NLO FEMA REGION X

1620 GROUP/OPEN DISCUSSION

MR. STEVE GIBSON  
DEPUTY DIRECTOR OPERATIONS

1700 ADJOURN

1730-  
1930 COCKTAIL HOUR (CASH BAR)

8 MAR

0700 CONTINENTAL BREAKFAST

0800 ADMINISTRATIVE COMMENTS

CAPT S.M. MONDUL, USN  
DIRECTOR OF OPERATIONS

0815 NUCLEAR WEAPON SAFETY

LCDR LOUIS F. RILL, USN  
HEAD OF THE TECHNICAL  
INSPECTION DEPT.

0830 DEPARTMENT OF ENERGY RESPONSE  
CAPABILITIES

MR. STEVEN H. CHAPMAN  
U.S. DEPARTMENT OF ENERGY

0900 FEDERAL EMERGENCY MANAGEMENT  
AGENCY

MR. VERNON WINGERT  
CHIEF OF PROGRAM  
DEVELOPMENT BRANCH

0930 NUCLEAR WEAPONS SAFETY  
12 MIN VHS TAPE

OFFICE OF THE CHIEF OF  
NAVAL OPERATIONS

0950 BREAK

1015	U.S. ARMY RADIOLOGICAL CONTROL TEAM (RADCON)	MR. JOSEPH M. SANTASIERO CHIEF, RADIOLOGICAL ENGINEERING BRANCH (PRI) MR. STEVEN A. HORNE CHIEF, CECOM SAFETY OFFICE (SEC)
1045	U.S. ARMY RADIOLOGICAL ADVISORY MEDICAL TEAM	MAJ ARTHUR G. SAMILJAN USA, WALTER REED ARMY MEDICAL CENTER
1115	INTER-SERVICE NUCLEAR SCHOOL (SONAC/FONAC) ORIENTATION	MAJ ROBERT SIMMONS, USMC BRANCH CHIEF
1145	LUNCH (1300-1330 HOTEL CHECKOUT, LUGGAGE STORAGE AVAILABLE AT THE BELLMAN'S STATION)	
1330	GROUP/OPEN DISCUSSION	MR. STEVE GIBSON DEPUTY DIRECTOR OPERATIONS
1400	CLOSING REMARKS	CAPT S.M. MONDUL, USN DIRECTOR OF OPERATIONS
1415	BREAKOUT SEMINAR/PM SODA	
1430	CLOSE- DISTRIBUTION OF ORDERS	

# UNIVERSITY OF FLORIDA

## GAINESVILLE FLORIDA 32611

PAGE

DATE PRINTED

STUDENT NO. 6

1

JANUARY 07, 1986

STUDENT NAME

LAST: SAMILJAN

FIRST: ARTHUR

MIDDLE: G

01

TEG

RESIDENCE  
FLA

MAJOR: ENE

SEX  
M

HIGH SCHOOL LAST ATTENDED

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COURSE TYPE  
BLANK - INST. CREDIT  
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-ACT PROGRAM  
-OTHER EXT. CR.  
-GRADE FORGIVEN  
-TRANSFER REPEAT COURSE, NO CREDIT

G-CSE NOT APP TO UF DEG.  
AU-AUDIT, NO CREDIT  
L-CREDIT, BELOW ACCEPTABLE LEVEL  
V-NO CREDIT VOCATIONAL TECH  
R-REPEAT COURSE, NO CREDIT  
S-NO CREDIT, UNDER SUSPENSION  
M-REPEATED, CREDIT ALLOWED

GRADE SYSTEM

A -4.0 GP EXCELLENT  
B+ -3.5 GP ]- GOOD  
B -3.0 GP ]- GOOD

C+ 2.5 GP ]- AVERAGE  
C 2.0 GP ]- AVERAGE  
D+ 1.5 GP ]- POOR  
D -1.0 GP ]- POOR

E -0.0 GP FAIL  
W -0.0 GP WITHDREW  
WF -0.0 GP WITHDREW FAIL  
EW -0.0 GP DROP NON ATTEND.  
I -0.0 GP INCOMPLETE  
X -0.0 GP ABSENT FROM EXAM

S -SATISFACTORY  
S+ -LAW SCHOOL HON.  
P -PASSING

N - NO CREDIT  
U - UNSATISFACTORY  
H - DEFERRED  
AU - AUDIT-NO CREDIT

COURSE

SEM/QTR CREDITS

COURSE

SEM/QTR CRE

PREFIX & CSE NO.	TITLE	TYPE	GRADE	COURSE CREDIT	CREDIT EARNED	CREDIT FOR GPA	PREFIX & CSE NO.	TITLE	TYPE	GRADE	COURSE CREDIT	CREDIT EARNED	CREDIT FOR GPA
<p>RECEIVED THE DEGREE BACHELOR OF ARTS</p>							<p>UNIVERSITY OF FLORIDA TEG 1985 SUMMER MAY-JUNE - 6 WEEKS</p>						
<p>RECEIVED THE DEGREE MASTER OF EDUCATION</p>							<p>UNIVERSITY OF FLORIDA TEG 1985 SUMMER MAY-AUGUST - 12 WEEKS</p>						
<p>ADMITTED TO GRADUATE SCHOOL</p>							<p>UNIVERSITY OF FLORIDA TEG 1984 FALL</p>						
ENV 5005	FUND OF REACTOR ENG	B		0300	0300	0300	ENV 5005	ENVIRONMENTAL HEALTH	B+		0300	0300	0300
ENV 6061	INTRO MED RADIOL PHYS	B		0100	0100	0100	ENV 5615	NUC RAD DETEC/INSTRU	B		0300	0300	0300
ENV 6006	GRAD ENV ENGR SEMINAR	S		0100	0100	0100	ENV 5615 L	NUC RAD DETEC/INST LB	A		0100	0100	0100
ENV 6211	HEALTH PHYSICS	C+		0300	0300	0300	ENV 6916	NON-THESIS PROJECT	A		0200	0200	0200
ENV 6236	RADIOLOGICAL TECHNIQUES	B		0400	0400	0400	<p>AWARDED MASTER OF SCIENCE GRADUATED DEC 21 1985 MAJOR ENVIRONMENTAL ENGINEERING SCI</p>						
EARNED HRS	12.00	GRADE PTS	31.50	HRS	CARRIED	11.00	EARNED HRS	12.00	GRADE PTS	40.50	HRS	CARRIED	12.00
<p>UNIVERSITY OF FLORIDA TEG 1985 SPRING</p>							<p>EARNED HRS 47.00 GRP 141.00 HRS CARRIED 46.00</p>						
OP 3212	COMPU PROG FOR ENGRS	C		0200	0200	0200	<p>END OF TRANSCRIPT. MAY NOT BE RELEASED TO THIRD PARTY WITHOUT STUDENT PERMISSION</p>						
ES 6207	ENVIRONMENTAL CHEM	B		0300	0300	0300							
NU 5626	RADIATION BIOLOGY	B+		0400	0400	0400							
ENV 6006	GRAD ENV ENGR SEMINAR	A		0100	0100	0100							
ENV 6216	RADIOACTIVE WASTES	A		0300	0300	0300							
ENV 6932	POST-ACCIDENT SAMPLE	A		0100	0100	0100							
EARNED HRS	14.00	GRADE PTS	47.00	HRS	CARRIED	14.00							

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