



DEPARTMENT OF THE ARMY
UNITED STATES ARMY AVIATION AND MISSILE COMMAND
REDSTONE ARSENAL AL 35898-5000

November 20, 2006

REPLY TO
ATTENTION OF

Radiation Standards Laboratory

Br. 3

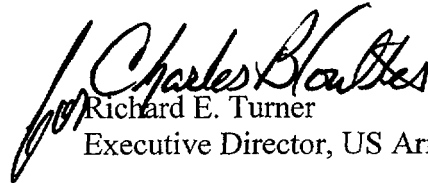
US Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, Pennsylvania 19406-1415

Dear Gentlemen:

Request an amendment to our Materials License 01-00126-16, Docket No. 030-12630. The amendment modifies Item 7 and Item 8 in our renewal application dated January 18, 2002. The changes will allow our Radiation Safety Committee to establish the duration for source/device specific radiation safety training for remote site radiation safety officers and remote site approved users.

Our point of contact is Mr. Patrick Kuykendall, USATA Radiation Safety Officer, 256-876-5593.

Sincerely,



Richard E. Turner
Executive Director, US Army TMDE Activity

Enclosures

REC'D IN LAT 11/24/2006

139762
NMSS/RGM MATERIALS-002

Estimated burden per response to comply with this mandatory collection request: 4.4 hours. Submittal of the application is necessary to determine that the applicant is qualified and that adequate procedures exist to protect the public health and safety. Send comments regarding burden estimate to the Records and FOIA/Privacy Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0120), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

APPLICATION FOR MATERIAL LICENSE

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY
OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

IF YOU ARE LOCATED IN:

ALABAMA, CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, FLORIDA, GEORGIA, KENTUCKY, MAINE, MARYLAND, MASSACHUSETTS, MISSISSIPPI, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, NORTH CAROLINA, PENNSYLVANIA, PUERTO RICO, RHODE ISLAND, SOUTH CAROLINA, TENNESSEE, VERMONT, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

LICENSING ASSISTANCE TEAM
DIVISION OF NUCLEAR MATERIALS SAFETY
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, OR WYOMING, SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TX 76011-4005

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTIONS.

03012630

1. THIS IS AN APPLICATION FOR (Check appropriate item)

- A. NEW LICENSE
- B. AMENDMENT TO LICENSE NUMBER 01-00126-16
- C. RENEWAL OF LICENSE NUMBER _____

2. NAME AND MAILING ADDRESS OF APPLICANT (Include ZIP code)

US ARMY AVIATION AND MISSILE COMMAND
US ARMY TMDE ACTIVITY
AMSAM-TMD-SR
REDSTONE ARSENAL, AL 35898-5000

3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

Department of Defense Installations
and Temporary Job Sites Worldwide

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Patrick Kuykendall

TELEPHONE NUMBER

(256) 876-5593

SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL

- a. Element and mass number; b. chemical and/or physical form; and c. maximum amount which will be possessed at any one time.

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE.

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.

9. FACILITIES AND EQUIPMENT.

10. RADIATION SAFETY PROGRAM.

11. WASTE MANAGEMENT.

12. LICENSE FEES (See 10 CFR 170 and Section 170.31)

FEE CATEGORY	AMOUNT ENCLOSED	\$
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13. CERTIFICATION. (Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39, AND 40, AND THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

CERTIFYING OFFICER -- TYPED/PRINTED NAME AND TITLE

Richard E. Turner, Executive Director, US Army TMDE Activity

SIGNATURE

Charles Blount

DATE

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
			\$		
APPROVED BY				DATE	

Summary of Changes Submitted in This Application:

1. Item 7, paragraph 7b. The wording of the paragraph was changed to allow the US Army, Test, Measurement, and Diagnostic Equipment Activity's Radiation Safety Committee to establish the duration of source specific training for remote site Radiation safety officers from a specific training duration of 8 hours for each major source/device to a source specific training duration that will be based on the source/device's safety consideration and complexity.
2. Provided a copy of AMCOMR 11-2, USATA Worldwide Radiation Safety Program.
3. Item 8, paragraph 2b. The wording of the paragraph was changed to allow the US Army Test, Measurement, and Diagnostic Equipment Activity's Radiation Safety Committee to establish the duration of source specific training for remote site approved users from a specific training duration of 8 hours for each major source/device's safety considerations and complexity.

Material License 01-00126-16

Item 7

Individuals Responsible for Radiation Safety Program And Their Training and Experience

1. General. The radiation safety responsibilities are described in the US Army Aviation and Missile Command (AMCOM) Regulation 11-2 (AMCOMR 11-2). This regulation is the governing regulation for the US Army Test, Measurement, and Diagnostic Equipment Activity (USATA) radiation safety program. The current revision dated 1 May 2002 is attached for reference. This document will be updated as the USATA program changes and to conform to changes in directives from higher headquarters and/or the NRC. Unless drastic changes occur which significantly affect the USATA radiation safety program, amendments will not be forwarded based on changes in the regulation. Changes to the AMCOMR 11-2 will require approval from the USATA Radiation Safety Committee as described in Item 7, paragraph 5.

2. USATA Executive Management. The USATA Executive Director and Deputy Executive Director exercise ultimate responsibility for the operation of the USATA radiation safety program. They ensure that adequate resources are made available to support the program and have the authority to respond to emergencies and unauthorized activities. However, they do not participate in the day-to-day management of the radiation safety program. This responsibility is delegated to the Director of the US Army Primary Standards Laboratory (APSL) who functions as vice chairman of the Radiation Safety Committee and Executive Management's representative in the absence of the Executive Director or Deputy Executive Director. Executive management is kept informed of the radiation safety program by approving the radiation safety committee minutes and receiving an annual management report from the Radiation Safety Officer (RSO).

3. Organizational Flow of Authority. The attached organizational chart depicts the USATA as it exists at the time of this amendment. While the RSO always has access to the Executive Director, the normal flow of information is through the Director of the APSL.

4. USATA Radiation Safety Committee (RSC). The USATA Deputy Executive Director is the chairman of the USATA RSC. The RSC is the primary organizational body for ensuring the radiation safety program remains in compliance with the NRC and Army regulations. The RSC consists of the following personnel: USATA Deputy Executive Director, APSL Director, USATA RSO, APSL RSO, and other users designated in writing by the chair. A quorum needed to conduct official business will consist of the Chair (or designee), the USATA RSO (or designee), and two other members. The primary responsibility of the USATA RSC is to ensure safe use of radioactive materials under USATA control. Meetings are held on a semiannual basis or at the call of the chair or vice chair. The duties of the RSC include but are not limited to:

- a. Establishing, developing, and approving radiation health and safety procedures as appropriate.
- b. Reviewing and approving program data such as personnel dosimetry, radiation surveys, and radiation incidents.
- c. Reviewing and approving all applications and amendments for the NRC license.
- d. Reviewing and approving all SOPs required by the license.
- e. Recommending suspending operations of any substandard radiation operations and/or user which results in or has the potential to result in a license or program non-compliance.
- f. Delegating certain administrative functions to the USATA RSO for accomplishment and coordination.
- g. Reviewing license compliance audits of authorized locations.
- h. Recommending qualified personnel to Executive Director, USATA, to serve as the USATA RSO and alternate.

5. Incorporation of Program Changes. This license allows program changes to be made by the RSC without amendment by the NRC. Changes to the procedures discussed in this license application must be formally presented and approved by the RSC. Procedural or policy change requests may be made by any member of the RSC or submitted by an approved user or site RSO. Requests shall be made with sufficient time to provide each RSC member a copy of the request. Major program changes may require additional time to conduct a radiation safety risk analysis and regulatory review. The USATA RSO or designee will provide a recommendation based on the applicable NUREG or regulation to the RSC. The majority of the RSC members present at the meeting must approve the change. Changes will be documented by the USATA RSO and provided to the affected site RSO and users. Major program changes to include increases in activity limits will continue to be submitted to the NRC.

6. USATA Radiation Safety Program. The day-to-day radiation safety program and NRC license oversight is managed by the USATA Radiation Safety Officer and alternates. Training and experience for the following for the following individuals are at the enclosed resumes.

- a. Patrick Kuykendall USATA RSO
- b. Jerry D. Gray USATA Alternate RSO
- c. Stephen V. Howard, CHP USATA Alternate RSO

7. Remote Site Radiation Safety Programs. Each Department of the Army installation or activity possessing radioactive material authorized by the license will appoint a RSO to ensure the safe use of radioactive material at that site. The remote site RSO is responsible for developing and implementing a radiation safety program for the remote site and ensuring compliance with all aspects of that program and applicable Federal and Department of Defense regulations. The USATA RSO will review and approve all remote site radiation safety programs. Minimum training and experience for a remote site RSO is as follows:

a. Formal Radiation Safety Training Program. Individuals responsible for local radiation safety programs at remote sites will complete a minimum of 40-hours of formal training in the areas listed in Table 1 of this supplement. The 40-hour Operational Radiation Safety Course, course number 4J/F2/494-F9 taught by the US Army Chemical School meets this requirement. The USATA RSO is the approving authority for all formal radiation safety training.

b. Source Specific Radiation Safety Training Program. In addition to the formal radiation safety training, individuals responsible for the remote site radiation safety program are required to complete source specific training on each major device located at the remote site. The duration of the source specific training will be determined by the USATA Radiation Safety Committee. The duration of training will be based on safety considerations and the complexity of the source/device. As a minimum, the source specific training will cover leak testing, surveys, interlocks (if applicable), safe use of the source/device, specific license conditions, emergency procedures and use of the source/device under the direct supervision of the qualified RSO. The training will be performed by a qualified RSO and approved by the USATA RSO.

Table 1
Formal Radiation Safety Training Requirements
<ul style="list-style-type: none">(1) Principles and practices of radiation safety(2) Radioactivity measurement standardization and monitoring(3) Biological effects of radiation(4) Mathematics and calculations basic to the use and measurement of radioactivity(5) Requirements of pertinent regulations(6) Management of a radiation safety program

BML 01-00126-16
Item 8
Training for Individuals
Working in or Frequenting Restricted Areas

1. Radiation Safety Officer (RSO). Each RSO will have received the training as specified in Item 7 of this application.

2. Radioactive Material Users. Each individual who uses radioactive source/device or frequents a restricted area will receive initial radiation safety training and source specific training (if applicable) from a qualified RSO.

a. Initial radiation safety training will consist of general information on radiation safety, regulatory requirements for the sources/devices the individual is authorized to use, use of radiation detection instrumentation, emergency procedures, biological effects, and license specific requirements.

b. Source specific radiation safety training will cover the safe use of the source/device, specific license conditions for the source/device to be used, specific emergency procedures, and use of the source/device under the direct supervision of the qualified remote site RSO. The duration of the source specific training will be determined by the USATA RSC based on safety considerations and the complexity of the source/device.

3. Training and Experience for Irradiator Operators. In addition to the basic radiation safety training provided to individuals as described above, individuals designated as approved irradiator operators will receive additional training prior to operating irradiators that falls under Title 10 Code of Federal Regulations, Part 36 requirements. This training will, as a minimum, cover the material outlined in NUREG 1556, Volume 6, Appendix G, dated January 1999. Before an individual is allowed to use the irradiator, they must complete 8 hours of operation under the supervision of a qualified operator or RSO.

4. Ancillary Support Personnel Training. Individuals who may be in a restricted area frequently but does not use a source/device will receive sufficient training to ensure they understand what radiological hazards are present and specific restrictions or requirements for being in the area. For example, a janitor who empties the trash and cleans would receive general radiation safety information and be specifically told what the limits were on access, where they could and could not clean, and if allowed to empty any trash receptacles.

5. Refresher Training. Each remote site RSO and individuals who use and/or frequent a restricted area will receive annual refresher radiation safety training. The training may be accomplished through formal courses, reviewing videotapes, reviewing handouts, or other methods appropriate to the duties and responsibilities of the person. The remote site RSO may receive credit for the annual refresher training by preparing and presenting training to their local personnel.

**AMCOM
Regulation 11-2**

Radiation Safety

**Worldwide
Radiation
Safety
Program**

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RECEIVED
REGION 1

**Headquarters
US Army Aviation and Missile Command
Redstone Arsenal, AL 35898-5000
01 May 2002**

UNCLASSIFIED

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY AVIATION AND MISSILE COMMAND
Redstone Arsenal, Alabama 35898-5000

AMCOM Regulation 11-2

01 May 2002

Radiation Safety: US Army Test, Measurement, and Diagnostic Equipment Activity
Worldwide Radiation Safety Program

FOR THE COMMANDER:

EDWARD L. STONE
Colonel, OD
Chief of Staff

OFFICIAL:

//s//

LINDA B. READUS
Secretary of the General Staff

HISTORY.

This document was first published on 21 June 1999 as AMCOM Regulation 385-25. The regulation updates the US Army Test, Measurement, and Diagnostic Equipment Activity (USATA) Worldwide Radiation Safety Program to reflect changes in the Department of the Army and Federal regulations.

SUMMARY.

This regulation provides policy, responsibilities, and safety requirements for personnel, facilities, and systems operating under the USATA Worldwide Radiation Safety Program. The guidance implements the USATA Radiation Safety Program in accordance with the US Army Test, Measurement, and Diagnostic Equipment Activity Nuclear Regulatory Commission (NRC) licenses.

APPLICABILITY.

This regulation is applicable to all organizational elements within the USATA. The regulation is also applicable to any organization that has been authorized to use radioactive material under the management control of the USATA Nuclear Regulatory Commission licenses.

AMCOMR 11-2

PROPONENT AND EXCEPTION AUTHORITY.

The proponent of this regulation is the USATA (AMSAM-TMD-SR). Only the proponent has the authority to approve exceptions to this regulation.

INTERNAL CONTROL SYSTEMS.

This regulation does not contain internal control provisions as outlined in the Management Control Evaluation Process.

SUPPLEMENTATION.

Further supplementation is prohibited without prior approval of USATA.

SUGGESTED IMPROVEMENTS.

Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications) to Department of the Army, USA TMDE Activity (AMSAM-TMD-SR), US. Army Aviation and Missile Command, Redstone Arsenal, AL 35898-5000.

DISTRIBUTION.

This publication is approved for public release; distribution unlimited.

SUPERSESSION.

This regulation supersedes AMCOM Regulation 385-25, dated 21 June 1999.

CONTENTS (Listed by paragraph number)

PURPOSE - 1

SCOPE - 2

REFERENCES - 3

EXPLANATION OF TERMS - 4

POLICY - 5

RESPONSIBILITIES - 6

IONIZING RADIATION SAFETY PROGRAM - 7

LASER SAFETY PROGRAM - 8

MICROWAVE RADIATION SAFETY PROGRAM - 9

PROPONENT - 10

APPENDIX A REFERENCES

APPENDIX B RADIATION INCIDENT NOTIFICATION TREE

APPENDIX C INTERNAL RADIATION SAFETY AUDIT PROGRAM

APPENDIX D FORMAT FOR LASER OR HIGH INTENSITY
OPTICAL SOURCE SOP

APPENDIX E DECLARING AND RESCINDING PREGNANCY
NOTIFICATION

GLOSSARY

AMCOMR 11-2

1. PURPOSE.

a. This regulation provides policy, responsibilities, and safety requirements for personnel, facilities, systems, and operations within USATA.

b. This regulation implements the USATA Radiation Safety Program in accordance with the USATA Nuclear Regulatory Commission (NRC) licenses and any US Army radioactive commodity license used by USATA operations.

2. SCOPE.

a. This regulation is applicable to all organizational elements of USATA involved in the use, handling, storage, transportation, and/or disposal of radioactive materials and/or ionizing and nonionizing radiation producing devices. This includes radioactive material, radiographic devices, microwave, radio frequency, and laser producing devices.

b. This regulation applies to any organization that has been authorized to possess radioactive material identified on USATA NRC licenses or any US Army radioactive commodity license.

3. REFERENCES. Required and related publications are listed in appendix A.

4. EXPLANATION OF TERMS. Abbreviations and special terms used in these regulations are explained in the glossary.

5. POLICY FOR USE OF RADIOACTIVE MATERIALS.

a. Radioactive materials and/or ionizing and nonionizing radiation producing devices will be used only when necessary for accomplishment of the assigned mission and when practical substitutes are nonexistent.

b. Each organization or activity which uses radioactive material and/or ionizing and nonionizing radiation producing devices shall establish a written standing operating procedure (SOP) to ensure adequate operating facilities, equipment, qualified personnel, controls, and reporting procedures. The SOP shall be coordinated through the host installation Radiation Safety Officer (RSO) and approved by the USATA Radiation Safety Office.

c. Each organization or activity that has been approved to use and possess radioactive material authorized under the USATA NRC license shall comply with the conditions of the license.

AMCOMR 11-2

d. Each organization or activity that has been approved to use and possess radioactive material authorized under any US Army NRC radioactive commodity license shall comply with all conditions of the respective license.

e. Procurement, use, and movement of items containing radioactive material shall be coordinated through the USATA RSO.

f. A Radiation Control Committee (RCC) shall be established at USATA headquarters to assist the USATA Director in developing and recommending policy for the USATA Ionizing and Nonionizing Radiation Safety Program.

g. The USATA field operations and organizations that have been authorized to possess radioactive material identified on USATA NRC licenses are not required to have an RCC. However, these operations should be represented on the host Installation Ionizing Radiation Control Committee.

h. All personnel who use radioactive material and/or radiation producing devices will follow acceptable radiological safety procedures to keep occupational exposure to ionizing radiation as low as is reasonably achievable (ALARA).

i. Personnel who possess, use, and/or store US Army radioactive commodities shall be familiar with and shall comply with all conditions of the NRC license governing that commodity.

j. Declared pregnant female radiation workers will not be restricted from working in the controlled area. However, pregnant female radiation workers shall be subject to the restricted dose limits for a declared pregnant female and/or the fetus.

k. Minors identified as radiation workers will not be restricted from working in the controlled area. Occupational dose limits for minors will be based on the limits in 10 CFR 20.

l. The Radiation Standards and Dosimetry Laboratory (AMSAM-TMD-SR) will serve as the license manager for all USATA NRC Licenses and as the point of contact (POC) for all radiological issues.

6. RESPONSIBILITIES.

a. The Director, USATA will:

(1) Establish a formal radiation safety program to include a comprehensive laser/microwave safety program consistent with Federal and Army regulations and status-of-forces agreements.

AMCOMR 11-2

(2) Designate in writing an RSO, alternate RSO, and members of the USATA RCC.

(3) Ensure that subordinate commanders/office chiefs and directors of primary organizational elements (POE) have adequate radiation safety resources and ensure proper safety precautions are followed.

(4) Ensure that organizations identified as approved users of USATA licensed radioactive material have adequate radiation safety resources.

(5) Ensure that any non-USATA organization requesting NRC license management support will sign a Memorandum of Agreement addressing specific compliance provisions.

b. Primary Organizational Elements (POE).

(1) Will ensure that a qualified individual is assigned as the local RSO to each radiological operation under their command. An alternate RSO is not required at each operation; however, the POE should consider appointing an ARSO at each radiation, detection, indication and computation (RADIAC) operation.

NOTE: RADIAC calibration operations can only occur when either the RSO or the ARSO is physically present in the calibration laboratory.

(2) Will ensure that the RSO and alternate(s) are technically qualified by virtue of education, training, and experience commensurate with the type and hazard of the radiation source(s) for which they are responsible.

(3) Will ensure that personnel approved as RSO or alternate for operations possessing USATA NRC licensed material will have training equivalent to requirements established in the conditions of the NRC license.

(4) Submit the original letter order assigning the RSO or alternate with a copy of the individual's training certificate and documented experience, as appropriate, to the USATA RSO for written approval. A resume of training and experience shall also be submitted with the letter orders for the local Laser Safety Officer (LSO).

(5) Provide written notification to the USATA RSO concerning any personnel status changes involving radiation protection personnel.

(6) Ensure all operational SOPs are forwarded to USATA RSO for approval.

AMCOMR 11-2

(7) An LSO will be appointed to each operation possessing a Class 3b or Class 4 laser or laser system. This individual will be appointed based on training/experience. The duties of the LSO can be assigned to the RSO if the RSO has the appropriate laser training/experience.

c. Commanders and Chiefs of Subordinate USATA Elements.

(1) Will recommend to the 95th Maintenance Company commander or to the director of the primary organizational element individuals who are qualified to assume the duties of RSO or alternate for each radiological operation.

(2) Develop an SOP for each site or operation utilizing radioactive material and/or ionizing or nonionizing producing devices. The SOP shall be forwarded to the USATA RSO/LSO for review and approval prior to any use. See appendix D for guidance in preparing a laser SOP.

(3) Provide written notification to the USATA RSO of any personnel status changes involving RSO/alternates and/or any change to the local radiation protection program.

(4) Ensure that personnel using radioactive material and/or ionizing or non-ionizing producing devices and supporting equipment receive adequate instructions and training in the use of operational and safety equipment. Operations involving high voltage hazards will include cardiopulmonary resuscitation (CPR) and first aid training.

(5) Ensure that all appropriate notices and warning signs are posted.

(6) Report any accidents, unusual incidents, or personnel injuries involving radioactive material and/or ionizing and nonionizing producing devices to the USATA RSO/LSO and immediately refer personnel with injuries to a medical treatment facility.

d. Organizations not within the USATA chain of command that have been approved to possess USATA NRC licensed material shall:

(1) Ensure that a local Radiation Safety Officer (RSO) is assigned to each radiological operation. An alternate RSO is not required; however, commanders should consider appointing an ARSO.

(2) Submit the original letter order assigning the local RSO or alternate with a copy of the individual's training certificate and experience to the USATA RSO for written approval.

(3) Provide a listing of all approved users with a copy of each individual training record to the USATA RSO.

AMCOMR 11-2

(4) Provide written notification to the USATA RSO concerning any personnel status changes involving radiation protection personnel.

(5) Ensure all operational SOPs are forwarded to USATA RSO for approval.

(6) Comply with the conditions of the USATA NRC license and its supporting documentation.

e. USATA RCC

(1) The RCC is an advisory committee for the Director, USATA, concerning all matters pertaining to the USATA Radiation Protection Program. The committee will meet semiannually or at the call of the chairman or at the call of the USATA RSO in the absence of the chairman. Personnel appointed to the committee shall be knowledgeable either through training or experience in the safe use of radioactive materials and radiation producing devices. The committee shall consist of the following personnel:

Deputy Director, USATA	- Chairman,
Director, Army Primary Standards Laboratory Directorate (APSLD)-	Vice Chairman
USATA Radiation Safety Officer	- Member
APSL Radiation Safety Officer	- Member
Designated Individuals	- Member

(2) The duties of the RCC will include:

(a) Establishing, developing, and approving radiation health and safety procedures as appropriate.

(b) Reviewing radiation safety program data, such as, personnel dosimetry, radiation surveys, and radiation incidents.

(c) Reviewing and approving all applications for NRC licenses.

(d) Reviewing and approving all Army Radiation Authorization (ARA) applications for radioactive materials not under NRC control.

(e) Recommending suspension of operations of any substandard radiation operations and/or user facility.

(f) Delegating certain administrative functions to the RSO for accomplishment and coordination.

AMCOMR 11-2

(g) Recommending qualified personnel to Director, USATA, to serve as the USATA RSO and alternate.

(h) Reviewing license compliance audits of authorized user locations.

f. The USATA RSO will:

(1) Review and approve in writing the selection of each local RSO and alternate.

(2) Take action when a qualified RSO is not available to control the unit's radioactive sources and lasers. These actions can include, but are not limited to, the following:

(a) Stop requisitions for the possession of radioactive material or lasers and laser systems.

(b) Stop use of on-hand radioactive material or lasers until qualified personnel have been trained.

(c) Transfer radioactive material to an installation or activity that has the proper radiation, detection, indication, and computation (RADIAC) equipment and qualified personnel.

(3) Evaluate procurement requests for radioactive material and make recommendations to the RCC.

(4) Maintain an inventory of all radioactive material and ionizing and nonionizing radiation producing devices.

(5) Serves as the central POC for any requisitions of radioactive sources or instruments/devices containing radioactive sources, or capable of generating ionizing or nonionizing radiation.

(6) Review and concur on all USATA SOPs for sites and operations utilizing radioactive material and/or ionizing and nonionizing producing devices.

(7) Maintain centralized radiation protection files on all USATA radiological operations.

(8) Ensure that radioactive material is handled properly according to Department of the Army (DA) and NRC regulations.

AMCOMR 11-2

(9) Ensure that the radiation protection program operations and elements are evaluated and validated periodically.

(10) Ensure that USATA radiation protection personnel receive the required instruction in the safe working practices, emergency procedures, harmful effects of radiation overexposure, and other topics required by 10 Code of Federal Regulation (CFR) 19 and 29 CFR 1910.

(11) Prepare and maintain NRC licenses and DA permits/authorizations for ionizing radioactive material.

(12) Serve as the POC for all radiological matters for USATA and provide technical assistance on all radiological matters for USATA activities and to any organization authorized to possess radioactive material identified on the USATA NRC license or any US Army Radioactive Commodity NRC licenses.

(13) Provide radiation emergency assistance to USATA radiological operations as required.

(14) Evaluate and submit radiation incident reports to the RCC when an incident/accident is discovered. The report will include the following data:

- (a) Identification of personnel who were overexposed.
- (b) Damaged or leaking radioactive sources or items.
- (c) Loss or theft of individually controlled radioactive items.
- (d) Details of the incident and corrective actions taken.

(15) Review and approve in writing the selection of each local LSO as required.

(16) Maintain an inventory of all laser devices.

(17) Monitor all USATA laser operations and provide guidance in matters pertaining to laser safety.

(18) Conduct periodic evaluations of laser safety programs to ensure compliance with regulations and SOPs.

(19) Provide written report to Army Materiel Command (AMC) concerning any laser accidents or personnel injuries. A copy of the report will be provided to the Army Aviation and Missile Command Safety Office.

AMCOMR 11-2

(20) Perform periodic audits of operations possessing radioactive material authorized under the USATA NRC license.

(21) Provide an annual ALARA management review to the RCC and the USATA Director.

g. The USATA Alternate RSO will:

(1) Assist the RSO in all aspects of the operation of the radiation protection program.

(2) Have equivalent training and experience in order to serve as Radiation Safety Officer in the absence of the RSO.

h. The USATA LSO will:

(1) Review and approve in writing the selection of each local LSO and alternate.

(2) Take action when a qualified local LSO is not available to control the unit's lasers.

(3) Maintain an inventory of all Class 3b and Class 4 lasers and laser systems used by USATA laboratories.

(4) Review and concur all USATA SOPs for sites and operations utilizing Class 3b and/or Class 4 lasers or laser systems.

(5) Review and evaluate the safety features for all lasers and laser systems used by USATA personnel prior to fielding.

(6) Serve as a POC on laser safety matters for USATA and provide technical assistance on all laser safety issues for USATA activities.

i. The RSO and alternates will:

(1) Ensure that this regulation, the local SOP for radiation safety, and all pertinent NRC and DA regulations are followed.

(2) Ensure that radioactive controlled items and radiation producing devices under the control of the RSO are properly used and stored.

(3) Ensure that an inventory of individually controlled items and radiation producing devices is maintained.

AMCOMR 11-2

(4) Advise the USATA RSO in writing of any proposed changes in:

(a) Item accountability

(b) RSO/alternate status

(c) Relocation of an individually controlled radioactive item.

(5) Submit a radiation incident report to the USATA RSO by electronic means to report a theft, loss of control, damage or leakage of individually controlled radioactive items and radiation producing devices. Initial notification can be accomplished by telephone.

(6) Forward a written follow-up to the initial report providing details of the incident and corrective actions taken to the USATA RSO within 15 days after the incident.

(7) Establish radiation control areas where the use or storage of radioactive materials may:

(a) Exceed dose rates of 2 millirem per hour.

(b) Cause personnel to receive 100 or more millirem in 7 consecutive days or 300 or more millirem in a calendar quarter.

(8) Perform leak test of controlled items in accordance with DA and NRC regulations.

(9) Instruct personnel in safe working practices, emergency procedures, harmful effects of radiation, and other topics required by 10 CFR 19 and 29 CFR 1910.

(10) Post all documentation as described in paragraph 7k of this regulation.

(11) Ensure that controlled items are properly stored and secured and are used as prescribed in applicable publications.

(12) Submit radiation incident reports to USATA RSO by electronic means immediately after the incident is discovered. The report will include the following data:

(a) Identification of personnel who were overexposed.

(b) Damaged or leaking radioactive sources or items.

(c) Loss or theft of individually controlled radioactive items.

AMCOMR 11-2

(d) Electronic reports will be followed by a written radiation incident report that will provide details of the incident and corrective actions taken as well as the information provided in the initial report. The written report will be forwarded to the USATA RSO within 25 days after the incident is discovered.

(13) Ensure personnel working in the OCONUS Radioactive Material Processing Facilities participate in a bioassay program.

(14) Perform an annual internal audit of their operation's radiation protection program if they possess radioactive material authorized under the USATA NRC license. The RSO will submit a copy of the audit to the USATA RSO. A copy of the audit report is provided at appendix C. An internal audit is not required for USATA operations that do not possess USATA NRC licensed materials.

j. The local LSO will:

(1) Post appropriate warning signs and notices.

(2) Ensure that personnel operating lasers and supporting equipment receive adequate instructions and training in the use of laser operational and safety equipment. Training shall ensure that the user is knowledgeable of the potential hazards and control measures for the laser equipment that will be used as well as CPR and first aid where high voltage exists.

(3) Maintain a roster of all personnel authorized to operate Class 3b and Class 4 lasers and ensure that all personnel occupationally exposed to laser hazards receive preplacement, periodic, and termination eye examinations prior to personnel participating in laser operations as described in OTSG Policy Letter 86-01.0, Surveillance of Laser and Microwave/Radio Frequency Workers.

(4) Establish written laser SOPs for Class 3b and Class 4 lasers, which include safety rules and special precautions. The SOP shall be forwarded to Department of the Army, USA TMDE Activity (AMSAM-TMD-SR), US Army Aviation and Missile Command, Redstone Arsenal, AL 35898-5000, for review and approval prior to any use of laser devices.

(5) Enforce laser SOPs, safety rules, and special precautions.

(6) Report laser accidents, unusual incidents, and personnel injuries to USATA LSO. Injured personnel will be sent to the medical treatment facility.

(7) Ensure that a copy of Technical Bulletin MED 524 and this guidance is available in all permanent-type laser facilities.

NOTE: The duties listed above shall be the responsibility of the local LSO. If the RSO is designated in writing as having the responsibilities for laser safety, these duties will be added to the RSO responsibilities.

7. IONIZING RADIATION PROCEDURES.

a. Use:

(1) Operations that have been approved to use and possess radioactive material authorized under the USATA NRC license or any US Army radioactive commodity license will comply with all conditions of the appropriate license.

(2) All RADIAC calibrators will be utilized in accordance with applicable directives, technical manuals, technical bulletins, and manufacturer's guides.

(3) All RADIAC calibrator source(s) will be secured when not in use.

b. Receipt, Shipment, and Transfer:

(1) Incoming radioactive material/devices will be checked for damage prior to storage or use. A survey and leak test will be performed on each shipment in excess of type A quantities (all shipments requiring a White I, a Yellow II, or Yellow III warning label). Damaged and/or leaking shipments will be reported to the RSO in accordance with appendix B.

(2) Outgoing radioactive material/devices that are identified as "exempted shipments" are exempt from survey, package wipes, and leak testing. All other outgoing shipments that exceed the radioactive material quantities listed in 10 CFR 30.71, schedule B, will be leak tested prior to shipment. All shipments will be coordinated through the RSO prior to shipment.

(3) When required, surveys of incoming and outgoing shipments will consist of the following:

(a) Surface exposure rate.

(b) Exposure rate at 1 meter. (Except for packages with a White I label).

(c) Package wipe test of the exterior of the shipping container.

(4) Radioactive material/devices shipped commercially will comply with packaging requirements IAW 49 CFR, parts 170-189, International Air Transport Association (IATA), and AR 11-9.

AMCOMR 11-2

(5) Radioactive material/devices shipped by government vehicle will comply with Department of Transportation requirements discussed above. The RSO will ensure that:

(a) Personnel accompanying the shipment are knowledgeable of the type(s) of radioactive material/devices being shipped and are familiar with the associated hazards and emergency procedures to follow in the event of an accident.

(b) Personnel accompanying the shipment have the appropriate radiation safety training prior to shipment. The training must be documented and on file.

(c) The shipment is secured in such a way that calibration sources will not move during transport.

(d) Radioactive material that exceeds the quantities listed in 10 CFR 30.71, schedule B, is leak tested prior to shipment.

(e) At the completion of the shipment, a copy of all documentation is maintained on file IAW AR 25-400-2.

(f) All shipments of radioactive material/devices of Type A quantities or greater are coordinated through the USATA RSO prior to shipment. Initial notification can be accomplished by telephone; however, an electronic notification must be forwarded within 24 hours of initial notification.

c. Security and Storage.

(1) Items containing radioactive material shall be stored in areas set aside for the secure storage of radioactive material only. The area will be free from the danger of flooding and outside the danger radius of flammables and explosives. This area will be a restricted entry area.

(2) Lock and key will secure sources when not in use to prevent unauthorized access or removal.

(3) All keys pertaining to the security of radioactive material/radiation producing devices will be maintained in a central location in a key box when not being used. Keys stored in this box will be under the physical control of the RSO and alternate. Key control procedures will be strictly enforced to restrict/identify personnel authorized to receive keys.

(4) No maintenance will be performed on any RADIAC calibrator except for maintenance that is outlined in the appropriate technical manuals (TM), technical bulletin (TB) or manufacturer's manuals. Tampering is prohibited.

AMCOMR 11-2

d. Surveys.

(1) All radiation surveys will be performed using an "ACTIVE" survey meter that has been calibrated in accordance with TB 43-180.

(2) All restricted and storage areas will be monitored with the appropriate survey meter in accordance with applicable TMs, TBs, and Army regulations.

(3) Surveys of the outside primary and secondary walls of all restricted areas will be performed at least annually to ensure that wall integrity is maintained.

(4) A diagram of the restricted areas will be used to indicate the locations of the areas monitored and wipe tested. All surveys are the responsibility of the RSO/ Alternate RSO. Documentation will be signed, dated, and maintained on file by the RSO IAW AR 25-400-2.

(5) A survey of each area in which sources of radiation are used or stored will be performed monthly. The survey will consist of instrument monitoring using survey instrumentation capable of detecting the types of radioactive material being used and stored and area wipe tests for removable contamination, when applicable. Results of the survey will be documented and maintained on file by the RSO.

(6) Calibration laboratories possessing alpha sources authorized under the USATA NRC license will include area alpha removable contamination wipes as a part of their monthly survey program. Local RSOs possessing nuclear counting instrumentation may check their samples for removable contamination; however, all samples will be submitted for formal analysis at the following laboratories:

(a) Wipe samples collected within CONUS will be sent to Department of the Army, USA TMDE Activity (AMSAM-TMD-SR), US Army Aviation and Missile Command, Redstone Arsenal, AL 35898-5000.

(b) Wipe samples collected in Region-Europe will be sent to the Nucleonics Laboratory at Pirmasens, Germany.

(c) Wipes samples collected in Region-Pacific will be sent to the Nucleonics Laboratory at Camp Carroll, Korea.

(7) Calibration laboratories possessing alpha sources under one of the Army radioactive commodity licenses or performing leak test sample collections for customers should include alpha area wipes as a part of their monthly survey. Samples should be submitted to one of the laboratories listed in paragraph 7d(6) above.

AMCOMR 11-2

(8) The RSO shall resurvey any survey point (meter reading or area wipe) that exceeds either Level I or Level II action (Trigger) levels defined below and document the results. Documentation shall include original survey results and all follow-up results. Level I Trigger level investigations shall be maintained on file in the activity's radiation protection files IAW AR 25-400-2.

(9) The USATA RSO will be notified immediately when a Level II Trigger action is exceeded. The RSO will provide the LRSO with instructions concerning a Level II Trigger action. A copy of the Level II Trigger action investigation shall be forwarded to the USATA RSO and shall be maintained on file in the USATA radiation protection files IAW AR 25-400-2.

(10) The survey trigger actions are listed below:

TABLE 1
SURVEY TRIGGER LEVELS

Investigational levels		
	LEVEL I	LEVEL II
Instrument Survey		
Beta/gamma/neutron	2X background*	10X background*
Alpha	2X background*	10X background*
Removable Contamination** (dpm/100 cm²)		
Beta	44	110
Low risk Beta or X-ray***	440	1100
Alpha	4.4	11

* Background is defined as the reading normally recorded for the instrument in the area survey. For instruments such as the AN/PDR-77, which records a zero for background, 10 cpm will be used as the background for the purposes of this paragraph.

** Organizations with increased mission responsibilities and enhanced capabilities may request higher action levels from the USATA Health Physics Office.

*** Low risk betas include H³, C¹⁴, and other nuclides whose beta energies are less than 0.2 MeV maximum, whose gamma or x-ray emission is less than 0.1 R/hr at 1 meter per curie, and whose permissible concentration in air is greater than 10⁶uCi/ml.

AMCOMR 11-2

e. Leak Testing.

(1) A leak test will be performed on radioactive sources exceeding the quantities specified in 10 CFR 30.71, schedule B. Beta and gamma sources will be leak tested at least every 6 months. Alpha sources will be leak tested at least every 3 months.

(2) Leak test samples for radioactive material authorized under the USATA NRC license will be submitted for analysis at the following laboratories unless otherwise directed:

(a) Samples collected within CONUS will be sent to Department of the Army, USA TMDE Activity (AMSAM-TMD-SR), US Army Aviation and Missile Command, Redstone Arsenal, AL 35898-5000.

(b) Samples collected in Region-Europe will be sent to the Nucleonics Laboratory at Pirmasens, Germany.

(c) Samples collected in Region-Pacific will be sent to the Nucleonics Laboratory at Camp Carroll, Korea.

(3) Leak test samples collected for Army radioactive commodities (i.e., AN/UDM-2, M43A1, CAM, and etc.) will be submitted to the nuclear counting laboratories authorized by the commodity licensee.

(4) Each leak test will be evaluated with an "ACTIVE" survey meter prior to mailing. If the wipe(s) read(s) are greater than two times background for alpha or greater than two times background for beta/gamma, the source will be considered leaking and will be secured. The USATA RSO will be notified immediately. The wipes will be packaged and appropriate actions will be taken to reduce exposure surface readings below acceptable levels.

(5) If the wipe(s) read(s) less than two times background for alpha or less than two times background for beta/gamma, the source is considered safe, and the wipe will be placed in an envelope marked "**MAILROOM--DO NOT OPEN.**"

(6) The USATA RSO will notify each approved user of USATA NRC licensed material when to perform a leak test

(7) The RSO will ensure that all radioactive sources under his/her control are leak tested within the appropriate intervals. The RSO/alternate should perform leak tests.

(8) The RSO IAW AR 25-400-2 will maintain results of leak tests on file.

AMCOMR 11-2

f. Personnel Dosimetry Program.

(1) Occupational exposure to radiation will be maintained as low as is reasonably achievable IAW NRC Regulatory Guide 8.10.

(2) Personal dosimeters will be used in accordance with DA PAM 40-18 and stored in a locked container during periods of nonuse. Tampering, altering, or intentionally exposing a dosimeter is not permitted. Any overexposure (accidental or intentional), damage, or loss of personal dosimeter will be reported immediately by the fastest means available to the USATA RSO. A written report will follow within 15 days of the incident.

(3) The RSO will issue personnel dosimeters to any individual who may be occupationally exposed to ionizing radiation.

g. Personnel under the age of 18 can be identified as a radiation worker if their annual occupational dose limit does not exceed 10 percent of the annual dose limit specified for adult workers as discussed in 10 CFR 20.

h. Declared Pregnant Radiation Workers.

(1) Should a female radiation worker become pregnant or thinks she is pregnant, she has the choice of declaring or not declaring her pregnancy. The female radiation worker is encouraged to voluntarily declare her pregnancy to the local RSO.

(2) A declaration of pregnancy will be in writing and will be given to the local RSO. The worker should use the form provided in appendix E. The local RSO will notify the USATA RSO when a female radiation worker declares her pregnancy and will provide the USATA RSO with a copy of the signed declaration.

(3) Upon notification that a female radiation worker has declared her pregnancy, the USATA RSO will provide the local RSO with detailed instructions concerning the woman's employment rights, exposure limits for the embryo/fetus during the pregnancy, and necessary training and instructions for the pregnant worker and her supervisor.

(4) A declared pregnant radiation worker must inform the local RSO in writing when the pregnancy has ended. The local RSO may consider the declaration expired 1 year after submission of the declaration if no notice is given.

(5) If a pregnant female radiation worker does not declare her pregnancy, her annual dose limit will remain at 5000 millirem per year.

i. Medical Surveillance.

AMCOMR 11-2

(1) Radiation workers who are approved to use the AN/UDM-2 and the AN/UDM-6 or radiation workers who are authorized to provide leak test support for the M43A1 Chemical Agent Detectors and Chemical Agent Monitor are not required to participate in a medical surveillance program.

(2) Personnel authorized to possess and/or use any USATA licensed radioactive material or radiation-producing devices are not required to participate in a medical surveillance program.

(3) Radiation workers who work in a radioactive material processing facility will participate in a bioassay program

j. Waste Disposal.

(1) Disposal of all radioactive material authorized under the USATA NRC license will be disposed of in accordance with the conditions of applicable NRC licenses. The outside continental United States (OCONUS) radioactive waste processing facilities disposing of radioactive waste through contracts with the host country will comply with the host country's regulations for handling and disposal of radioactive waste

(2) Radioactive laboratory trash shall be monitored with the appropriate calibrated survey meter using the most sensitive scale in a low background area prior to disposal. Laboratory trash possibly contaminated with tritium will be evaluated using a Liquid Scintillation Counter or other appropriate methods. Trash that has survey readings distinguishable from background will be considered contaminated and will be treated as radioactive waste. Trash that has survey readings of background will be considered not contaminated and will be disposed of as regular trash. All markings will be removed prior to disposal in regular trash.

(3) Radioactive waste generated from repair/maintenance should be stored in the storage area. If containers are maintained in the working areas, the container must be painted yellow and marked appropriately. Radioactive trash should be stored in isotope specific containers and marked appropriately

(5) Records of waste disposal will be maintained for accountability. The RSO IAW AR 25-400-2 will maintain documentation of radioactive waste disposal on file.

(6) Radioactive waste disposal within continental United States (CONUS) shall be coordinated through the installation RSO.

(7) Disposal of radioactive material/devices used as reference standards or as calibration standards shall be coordinated through the USATA RSO.

AMCOMR 11-2

(8) Radioactive material/devices shall not be sold, transferred, or donated to individuals or organizations that do not possess a valid NRC license. All proposed transactions will be conducted through the USATA RSO.

(9) Technical assistance may be obtained from the USATA RSO, Redstone Arsenal, AL, Defense Switched Network (DSN) 746-1987/8825, or commercial 256-876-1987/8825.

k. Posting of Notices to Workers.

(1) Operations and activities possessing radioactive material controlled by either a US Army NRC radioactive material commodity license or by a USATA NRC license will post the following documents. The documents will be posted in a conspicuous location to permit individuals engaged in RADIAC operations to observe them on the way to and from the RADIAC area. Posting will be in accordance with 10 CFR, parts 19, 20, and 21.

(a) Section 206 of the Energy Reorganization Act of 1974.

(b) Form NRC-3, Notices to Workers.

(2) Additionally, the documents listed below will either be posted with the documents listed above or identified in a statement that informs the reader where the documents can be reviewed:

(a) Copies of all appropriate NRC licenses.

(b) Standing operating procedures.

(c) Title 10 CFR, parts 19, 20, and 21.

(d) Reports of noncompliance and corrective measures taken.

(3) The following documents must be maintained on file for easy reference:

(a) AMCOMR 11-2, Radiation Safety: US Army Test, Measurement, and Diagnostic Equipment Activity Worldwide Radiation Safety Program

(b) AR 11-9, The Army Radiation Safety Program.

(c) AMCR 11-48, Army Materiel Command, Radiation Safety Program.

(d) All TBs and TMs for radioactive devices on hand.

AMCOMR 11-2

(e) NRC Regulatory Guide 8.10, Operating Philosophy for Maintaining Occupational Radiation Exposures as Low as is Reasonably Achievable.

(f) NRC Regulatory Guide 8.13, Instructions Concerning Prenatal Radiation Exposure.

(g) NRC Regulatory Guide 8.29, Instruction Concerning Risks From Occupational Radiation Exposure.

(h) DA authorizations, RSO letter orders, training documents, administrative and technical guidelines, etc.

I. NRC License and ARA.

(1) The USATA Director will be the license holder for all USATA NRC licenses. All USATA licenses will be managed by the USATA RSO (AMSAM-TMD-SR). Organizations requiring radioactive material, radiation producing devices, and nonionizing producing devices will submit procurement requests to the USATA RSO for authorization prior to submitting procurement requests.

(2) Army Radiation Authorization (ARA) Applications.

(a) The USATA Director will be the authorization holder for USATA calibration ARAs. The ARA manager will be the USATA RSO (AMSAM-TMD-SR). Laboratories requiring radioactive material or radiation producing devices will submit procurement requests to the USATA RSO for approval prior to obtaining the material or device.

(b) The OCONUS Region Director will be the authorization holder for the Radioactive Material Processing Facility ARA.

1 New, renewal, or amendment applications for the Radioactive Material Processing Facility (RMPF) ARA will be submitted to the USATA RSO for review at least 60 days prior to the expiration date. Applicants will maintain one copy of the application for their files and submit three copies to the USATA RSO.

2 Each ARA application will include the appropriate environment assessment documentation or a record of environmental consideration in accordance with AR 200-2.

m. Facility Design Reviews.

(1) Diagrams (blue prints, plans, or drawings) for new construction or modifications to an existing radiation calibration facility must be reviewed and approved by the USATA RSO prior to the start of construction.

AMCOMR 11-2

(2) The following information shall be submitted with the construction plans:

(a) A diagram of the room in which the equipment will be used and stored, relationship of the operational area to other portions of the building, and activities above and below the operational area.

(b) Manufacturer's brochures and drawings describing the specifications and characteristics of the radioactive device.

(c) Expected workload of the device and the number of personnel that will occupy the area.

(d) Expected radiation levels both in the operational area and nonoperational areas of the room/building as well as radiation levels that may be released outside the building and the calculations by which these levels were obtained.

n. ALARA Program.

(1) The director/commander/chief of each USATA element shall be committed to the program prescribing to keeping individual and collective exposures ALARA.

(2) Enforcement of the ALARA program will be the responsibility of the RSO. The RSO will achieve this through program reviews and education programs for the radiation workers.

(3) Educational responsibilities will be conducted as follows:

(a) The RSO will schedule briefings and educational sessions to inform workers of ALARA program efforts.

(b) The RSO will ensure that workers and ancillary personnel who may be exposed to radiation receive instructions concerning the ALARA philosophy and management's commitment.

(4) The RSO will review the personnel dosimetry records at least quarterly to verify that individual and collective exposures are maintained below established investigational levels. A copy of the quarterly reviews will be maintained on file in the unit's radiation protection files.

(5) An annual review of the ALARA program will be submitted to the USATA RSO. The review will include a summary of the quarterly individual and collective exposures and reports concerning excesses to the ALARA levels.

(6) The RSO shall review all exposures that are equal to or exceed the Level I ALARA limits. The RSO will compare the individual's exposure results with those of other personnel performing similar tasks to establish an index of ALARA program quality. The RSO shall document the Level I review by providing information from the individual, personal evaluation from the ALARA program's quality review, and recommendations. No action is required for Level I investigations unless deemed appropriate by the RSO. A copy of the Level I investigation shall be maintained on file in the activity's radiation protection files IAW AR 25-400-2.

(7) The USATA RSO will be notified immediately when an exposure is equal to or exceeds Level II. The USATA RSO will provide the RSO with instructions concerning a Level II investigation. A copy of the Level II investigation shall be forwarded to the USATA RSO and shall be maintained on file in the USATA radiation protection files IAW AR 25-400-2.

(8) Investigational limits are listed in table 2 below.

TABLE 2
ALARA INVESTIGATIONAL LEVELS

	(mrem per calendar quarter)	
	LEVEL I	LEVEL II
Deep Dose (Whole Body)	125	250
Eye Dose	375	750
Skin Dose	1250	2500
Extremity Dose	1250	2500
Organ Dose	1250	2500
Declared Pregnant Woman; TEDE	50	125
Minors	50	125

(9) The USATA RCC will meet annually to determine whether the ALARA investigational levels should be modified.

o. Emergency Procedures. The RSO will develop emergency procedures and instructions concerning spills, fires, release or loss of material, and accidental contamination of personnel, including decontamination procedures and those personnel to be notified in an emergency.

p. Decommissioning Records. Each RADIAC calibration facility shall maintain a decommissioning file for records that would be relevant to the decommissioning of the facility. The file should contain copies to the following records:

AMCOMR 11-2

(1) Documentation of incidents or unusual occurrences involving the spread of contamination. The records should include any known information concerning the incident, such as the nuclide, quantity, form, concentration, and decontamination results.

(2) Copies of building diagrams and any modifications of structure and equipment in the restricted area.

(3) A list describing leak test results of sources located in the facility. The list should be updated every 2 years.

(4) A list describing the results of area surveys. The list should be updated annually.

q. Facility Decommissioning.

(1) All USATA RADIAC calibration laboratories or USATA license approved users will notify the USATA RSO prior to termination of operations. The USATA RSO will provide specific instructions for collecting data necessary for decommissioning a facility prior to releasing the building to the general public. Generally, the procedure will be as follows:

(a) A detailed report of the facility's operational history will be prepared. The report will include copies of leak tests, monthly surveys, and an inventory of radioactive sources and devices used and/or stored at the facility.

(b) All radioactive material will be turned in or transferred prior to starting the survey. Equipment, worktables, and storage cabinets will be surveyed to determine the absence of residual and removable contamination prior to their removal from the controlled area.

(c) The storage and use area(s) will be laid out in a grid format prior to starting the survey. The survey will consist of an instrument survey and area wipe test. The number of area wipes will depend on the size of the facility.

(d) A diagram of the facility showing where survey measurements were taken shall be developed. Ensure that all survey and area wipe locations are identified on the diagram.

(2) The survey package should be a stand-alone document. It is acceptable to refer to leak tests and dosimetry information that is maintained on file elsewhere, but this record should be as complete as possible.

AMCOMR 11-2

(3) A complete copy of the survey will be submitted to Department of the Army, USA TMDE Activity (AMSAM-TMD-SR), US. Army Aviation and Missile Command, Redstone Arsenal, AL 35898-5000, for final review and approval. The USATA RSO will be the final approving authority for releasing a facility to the public for general use.

8. LASER RADIATION PROTECTION.

a. Requirements. Fundamental safety requirements for laser systems, facilities, and operations are based on hazard classifications as defined in ANSI Z136.1, American National Standard for the Safe Use of Lasers. The full extent of control measures required must be determined on a case-by-case basis with consideration given to the hazard classification of the device, the environment in which it will be used, and the personnel associated with the laser operation.

b. Laser Classifications. The ANSI Z136.1, American National Standard for the Safe Use of Lasers, will be used to derive the classification for Class 1, Class 2, Class 3, and Class 4 lasers.

c. Laser Personnel Categories.

(1) Incidental Personnel. Incidental personnel are those individuals working in an area whose work makes it unlikely that they will be exposed to laser energy sufficient to damage the eyes. The local LSO will be responsible for identifying and placing personnel in this category.

(2) Laser Personnel. Laser personnel are those individuals who work routinely in laser environments and are identified as authorized operators. Engineering controls or administrative procedures, or both, ordinarily protect these individuals.

d. Medical Surveillance Program.

(1) Personnel using Class 1, Class 2, Class 2a, or Class 3a lasers and laser systems are not required to participate in a medical surveillance program. However, vision screening for employment purposes may be required in accordance with Occupational Health guidelines.

(2) Preplacement and termination vision/ocular assessments for personnel using Class 3b or Class 4 lasers and laser systems will be implemented using personnel categories and their specific requirements as follows:

(a) Laser Workers - Individuals who routinely work in laser environments and are identified as authorized operators for Class 3b or Class 4 laser operations will receive

AMCOMR 11-2

preplacement and termination employment assessments. Preplacement and termination assessments will follow protocol as determined by Occupational Health guidelines.

(b) **Incidental Workers** - Personnel working in an area whose work makes it unlikely that they will be overexposed to laser energy sufficient to damage their eyes or skin. Authorization for placing personnel in this category will be identified in the unit's SOP. These individuals will receive preplacement and termination of employment assessments following Occupational Health guidelines.

(3) In the event of a known or suspected laser overexposure for any class of laser, immediate medical examination is required.

e. Laser Operations.

(1) Each facility possessing a Class 3b or Class 4 laser system shall have a local LSO on written orders assigned to manage the laser safety program. Facilities possessing Class 1, Class 2, or Class 3a laser systems should have a local LSO assigned to oversee the local laser safety program.

(2) Each facility possessing a Class 3b or Class 4 laser system will maintain a current laser inventory within their area. The inventory will contain the information listed below. Copies of these inventories shall be provided to the USATA LSO who will use them to establish a consolidated inventory. Laboratories possessing Class 1, Class 2, or Class 3a laser systems are not required to maintain an inventory.

- (a) The location (building and room number).
- (b) The manufacturer, model number, and serial number.
- (c) The responsible person and his/her phone number.
- (d) Active medium and hazard classification.
- (e) The type of device (continuous wave or pulse).
- (f) Principle wavelength and optical density.
- (g) Beam diameter (mm)
- (h) Beam divergence (mrad).
- (i) Average power output (W or mR).

AMCOMR 11-2

- (j) Energy pulse (J).
- (k) PRF (Hz).
- (l) Pulse time.
- (m) Beam intensity (W/cm^2 or J/cm^2).
- (n) Laser application.

(3) Operations possessing Class 3b and Class 4 lasers and laser systems shall have a written SOP governing the operation and maintenance of those lasers. The SOP will address, in addition to safety precautions to avoid injury by laser light, any associated hazards such as chemical, electrical, cryogenic, fire, noise, and explosion hazards. The SOP will also contain first aid instructions regarding injuries that could result from these hazards. First aid procedures will be developed in coordination with the local medical authority. First aid should not be attempted for damage produced by laser energy to human eye tissue.

(4) Operations possessing lasers and laser systems Class 1, Class 2, and Class 3a are not required to have a written SOP. Such operations will follow the guidance discussed in Army technical manuals and manufacturer's instructions.

(5) Personnel assigned to work with Class 3b or Class 4 lasers shall wear clothing that is free of highly reflective buttons, badges, emblems, or similar adornments. Rings, metal spectacle frames, and watches will not be worn if the possibility exists that they will inadvertently reflect the laser beam.

(6) Personnel working with potentially hazardous levels of laser radiation shall be furnished suitable laser goggles for the specific wavelength and optical density for the laser energy involved.

(7) Prior to using laser safety goggles, examine the goggles for visible defects. Any cracks, holes, or damage would indicate defects. Defective goggles will be discarded. If the goggles are designed to serve as impact resistant safety spectacles, replacement filter lenses should meet the requirements of the American National Standards Institute (ANSI) Z87.1.

(8) Prior to working with lasers for the first time, all employees will receive full instructions on the proper use of the equipment and on the hazards associated with the equipment and the laser beam. A roster of authorized personnel for Class 2, 3, and 4 lasers will be maintained with each laser.

AMCOMR 11-2

(9) Electrical equipment operating at potentials in excess of the range of 10,000 to 15,000 volts may produce X-rays. The local RSO will be requested to determine if X-rays are produced.

(10) An activated laser will not be left unattended except when required by a test and when precautions have been provided to prevent exposure to personnel.

(11) Personnel working with Class 3b and Class 4 lasers shall work with, or under the direct visual observation of, another person at all times while actively working with the laser. The 2-man safety rule is indicated because these lasers present hazards (electrical, chemical, and explosive) that could cause unconsciousness.

(12) Additional practices and procedures for maintenance operations are as follows:

(a) Maintenance personnel should adhere strictly to the precautions outlined in TB 385-4.

(b) Only specially trained maintenance personnel will be permitted to work on laser systems.

(c) No maintenance should be performed on laser systems until the power is off and the residual charge in any power supply capacitor has been "bled-off." When maintenance must be performed on a "live" laser system, the laser output must be blocked or enclosed.

f. Laser Facilities.

(1) Questions concerning facility design should be referred to USATA RSO. Drawings for new facilities and/or facility modification should be forwarded to USATA LSO at least 60 days prior to construction for safety evaluation and approval.

(2) All windows in a Class 4 laser facility should be covered to prevent passage of a hazardous beam into an uncontrolled area and to reduce reflective surfaces.

(3) Class 4 lasers whose beams are not totally enclosed should be operated in areas free from polished and reflective surfaces. Walls and ceilings will be finished with diffuse, nongloss material.

(4) Safety interlocks shall be provided at the entrances of Class 4 laser facilities to deny access to unauthorized personnel while the laser power supply is energized and the laser is capable of firing. A warning light with explanatory sign shall be conspicuously placed on the outside wall of a closed room to alert personnel that the laser is in operation.

AMCOMR 11-2

(5) Mechanical/electrical blocks or physical barriers shall be installed to prevent directing the beam of a Class 3b or Class 4 laser at an angle that could endanger personnel.

(6) The beam of a Class 3b or Class 4 laser shall be terminated by a material which is not highly reflective and which is fire resistant. The composition and thickness of the material will be determined for each laser prior to initial operation to assure that the target will not be penetrated. Asbestos shall not be used to terminate the beam.

(7) Adequate ventilation will be provided for laser operations which can produce accumulations of toxic or flammable gases or infectious fumes or which, in the event of an accidental discharge of coolant from a cryogenic system, can produce an oxygen deficiency.

g. Laser Safety Training.

(1) The individual assigned as the LSO shall be provided training on the potential hazards (including bioeffects), control measures, applicable standards, medical surveillance (if applicable), and other pertinent information pertaining to laser safety. The training shall be commensurate with the highest class of laser under the control of the LSO.

(2) Safety training shall be provided to laser personnel who use Class 3a, Class 3b, or Class 4 lasers and laser systems. Training should be provided to personnel who use Class 1 enclosed lasers and laser systems.

(3) Topics for inclusion in a laser safety-training program shall include, but not necessarily be limited to, the following:

- (a) Fundamentals of laser operation (physical principles, construction, etc.).
- (b) Bioeffects of laser radiation on the skin and eyes.
- (c) Nonradiation hazards of lasers (electrical, chemical, etc.).
- (d) Relations of specula and diffuse reflections.
- (e) Laser and laser system classification.
- (f) Control measures.
- (g) Overall management and employee responsibilities.
- (h) Medical surveillance practices (if applicable).

AMCOMR 11-2

(i) Required CPR for personnel servicing or working on lasers with exposed high voltages and/or the capability of producing potentially lethal electrical currents.

h. Warning Signs and Labels.

(1) The word "Caution" shall be used with all signs and labels associated with Class 2 lasers and laser systems and all Class 3a lasers and laser systems that do not exceed the appropriate maximum permissible exposure (MPE) for irradiance. The word "Danger" shall be used with all other Class 3a and all Class 3b and Class 4 lasers and laser systems.

(2) A Class 2a laser or laser system shall have a label affixed with the following instructions: "Avoid Long-term Viewing of Direct Laser Radiation." The label does not require a warning symbol but must have the designation "Class 2a Laser" clearly visible during operation.

(3) The word "Radiation" on signs and labels may be replaced by the word "Light" for lasers operating in the visible range at wavelengths greater than 400 nm and equal to or less than 700 nm.

(4) Pertinent safety information may be included during the printing of a sign or label or may be handwritten in a legible manner and shall include the following:

(a) At position 1 above the tail of the sunburst, include all special precautionary instructions such as: Invisible Laser Radiation, Knock Before Entering, Do Not Enter When Light Is On, Restricted Area, etc. Additionally, protective actions that the reader should know will also appear in position 1. These actions include:

1 For Class 2 and Class 3a lasers and laser systems where the accessible irradiance does not exceed the approximate MPE based on a 0.25 second 0.25 second exposure, the statement "Laser Radiation - Do Not Stare Into Beam or View With Optical Instruments."

2 For all other Class 3a lasers and laser systems, "Laser Radiation - Avoid Direct Eye Exposure."

3 For all Class 3b lasers and laser systems, "Laser Radiation - Avoid Direct Exposure To Beam."

4 For Class 4 lasers and laser systems, "Laser Radiation - Avoid Eye Or Skin Exposure To Direct Or Scatter Radiation."

AMCOMR 11-2

(b) At position 2 below the tail of the sunburst, the type of laser (Ruby, Helium-Neon, etc.) or the wavelength, the pulse duration (if appropriate), and the maximum output should be listed.

(c) At position 3, list the class of the laser or laser system.

i. Disposal. Laser devices should not be sold to individuals not qualified to safely operate these devices. Local, state, and/or Federal laws restricting possession or transfer of lasers shall be followed when lasers are disposed. Special procedures are required for disposal or transfer of exempt lasers IAW AR 11-9. Disposal of all lasers and laser systems shall be coordinated through the USATA LSO.

9. MICROWAVE RADIATION SAFETY.

a. Hazard Evaluation and Exposure Control.

(1) The microwave and radio frequency calibration and repair mission requires the operation of equipment capable of emitting potentially hazardous levels of non-ionizing radiation energy at frequencies between 0.01 MHz and 300 GHz. The equipment is normally used in a closed-loop configuration, which prevents free-space radiation. Wave-guides are used on equipment operating at frequencies greater than 8 GHz. Coaxial cable is used at lower frequencies.

(2) Equipment using wave-guides can radiate power density levels greater than the permissible exposure limit (PEL) of 10 mW/cm^2 from unterminated wave-guides. The only time that equipment is operated unterminated is during calibration of attenuators when the attenuator under test is substituted with the standard attenuator. When this change takes place, the waveguide operates in free space at a level greater than the PEL. Because this level only exists at a distance of a few centimeters from the opening, USATA radio frequency radiation (RFR) calibrators are considered low risk workers.

(3) The PEL for all personnel is 0.4 watts per kilogram (W/kg) whole body specific absorption rate (SAR) as averaged over any 6-minute period. Averaging is used to obtain the maximum exposure potential. Exposures separated by more than 6 minutes are considered separate physiological events under IEEE Standard C95.1.

(4) Derived equivalent PELs for restricted and unrestricted areas can be found in tables 1 and 2 of US Army Environmental Hygiene Agency Technical Guide No 153.

(5) Significant evidence has shown that a fetus is at no greater risk than the mother during a pregnancy; therefore, a fetus will not receive any greater exposure than the mother.

AMCOMR 11-2

(6) The RFR equipment, which radiates at frequencies below 1000 MHz and delivers less than 7 watts of radio frequency power to the radiating device, is considered nonhazardous.

b. Medical Surveillance. There is no requirement for a medical surveillance program for RFR workers because there is no scientific basis or epidemiological evidence to suggest ocular surveillance is necessary.

c. Investigation of Incidents.

(1) All incidents involving alleged or actual overexposure to RFR must be investigated and documented (refer to AR 40-400 and AR 385-40).

(2) Investigations of incidents involving alleged or actual exposures of five times the PEL or greater must include, as a minimum, measurements of exposure levels, appropriate medical examination, a detailed description of the circumstances surrounding the incident, recommendations for medical follow-up, if necessary, and recommendations to prevent recurrence of the incident.

(3) If a known or suspected overexposure occurs, notify the USATA RSO by telephone as soon as possible after the incident or accident occurs.

(4) A copy of all investigations shall be forwarded to the USATA RSO no later than 20 days after the initial telephonic notification.

d. The RFR Hazard Training. All occupational workers working with RF will receive RFR hazard training. Training will be conducted during basic technical training or before assignment to work areas involving RFR exposure. Personnel will be given annual refresher training to reemphasize training objectives. All training will be documented.

e. RFR Hazard Warning Signs.

(1) The format for RFR hazard warning signs can be found in ANSI C95.1. Subdued signs are authorized for tactical use provided the general wording and layout of the signs adhere to ANSI C95.1.

(2) The RFR hazard warning signs are required at all access points to areas in which RFR levels may exceed the PEL or derived equivalent PELs. Appropriate information will be inserted on the signs. Competent safety and occupational health professionals may waive this requirement when military operational considerations prevent posting of such signs.

AMCOMR 11-2

(3) In areas where access to RFR levels greater than 10 times the PEL may exist, warning signs alone will not provide adequate protection. Other warning devices and controls, such as flashing lights, audible signals, fences, or interlocks, will be required depending on the potential risk of exposure.

APPENDIX A

- a. DOD Manual 6055.5M, Occupational Health Surveillance Manual.
- b. DODI 6055.11, Protection of DOD Personnel from Exposure to Radio Frequency Radiation.
- c. DA PAM 40-18, Personnel Dosimetry Guidance and Dose Recording Procedures for Personnel Occupationally Exposed to Ionizing Radiation, 30 Jun 95.
- d. AR 11-9, The Army Radiation Safety Program.
- e. AR 25-400-2, The Modern Army Record Keeping System (MARKS).
- f. AR 40-5, Preventive Medicine.
- g. AR 40-400, Patient Administration.
- h. AR 71-9, Material Requirements.
- i. AR 200-2, Environmental Effects of Army Actions.
- j. AR 385-40, Accident Reporting and Records.
- k. AR 750-25, Army Test, Measurement, and Diagnostic Equipment Program.
- l. AMCR 11-48, Radiation Safety Program.
- m. TB 43-0122, Identification of US Army Communications-Electronics Command Managed Radioactive Items in the Army Supply System.
- n. TB 43-180, Calibration and Repair Requirements for the Maintenance of Army Materiel.
- o. TB 385-4, Safety Requirements for Maintenance of Electrical/Electronic Equipment.
- p. TB 750-25, Maintenance of Supplies and Equipment, Army Test, Measurement, and Diagnostic Equipment (TMDE) Calibration and Repair Support (C&RS) Program.
- q. TB MED 523, Controls of Hazards to Health from Microwave and Radio Frequency Radiation and Ultrasound.

AMCOMR 11-2 (APPENDIX A CONTINUED)

- r. TB MED 524, Control of Hazards to Health From Laser Radiation.
- s. Title 10, Code of Federal Regulations (CFR), Part 19, Notices, Instructions, and Reports to Workers: Inspection.
- t. Title 10, CFR, Part 20, Standards for Protection Against Radiation.
- u. Title 10, CFR, Part 21, Reporting of Defects and Noncompliance.
- v. Title 10, CFR, Part 30, Rules of General Applicability to Domestic Licensing of Byproduct Material.
- w. Title 21, CFR, Food and Drugs.
 - (1) Part 1002, Record and Reports.
 - (2) Part 1010, Performance Standards for Electronic Products: General.
 - (3) Part 1040, Performance Standards for Light-Emitting Products.
- x. Title 29, CFR, Part 1910. Occupational Safety and Health Standards.
- y. Title 49, CFR, Parts 170-189 Inclusive.
- z. IEEE C95.1, IEEE Standard Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 KHz to 300 GHz.
- aa. IEEE C95.3, Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave.
- bb. ANSI Z136.1, American National Standard for the Safe Use of Lasers.
- cc. ANSI Z87.1, American National Standard Practices for Occupational and Educational Eye and Face Protection.
- dd. NRC Regulatory Guide 8.10, Operating Philosophy for Maintaining Occupational Radiation Exposure As Low As Reasonably Achievable.
- ee. NRC Regulatory Guide 8.13, Instruction Concerning Prenatal Radiation Exposure.
- ff. NRC Regulatory Guide 8.29, Instruction Concerning Risks from Occupational Radiation Exposure.

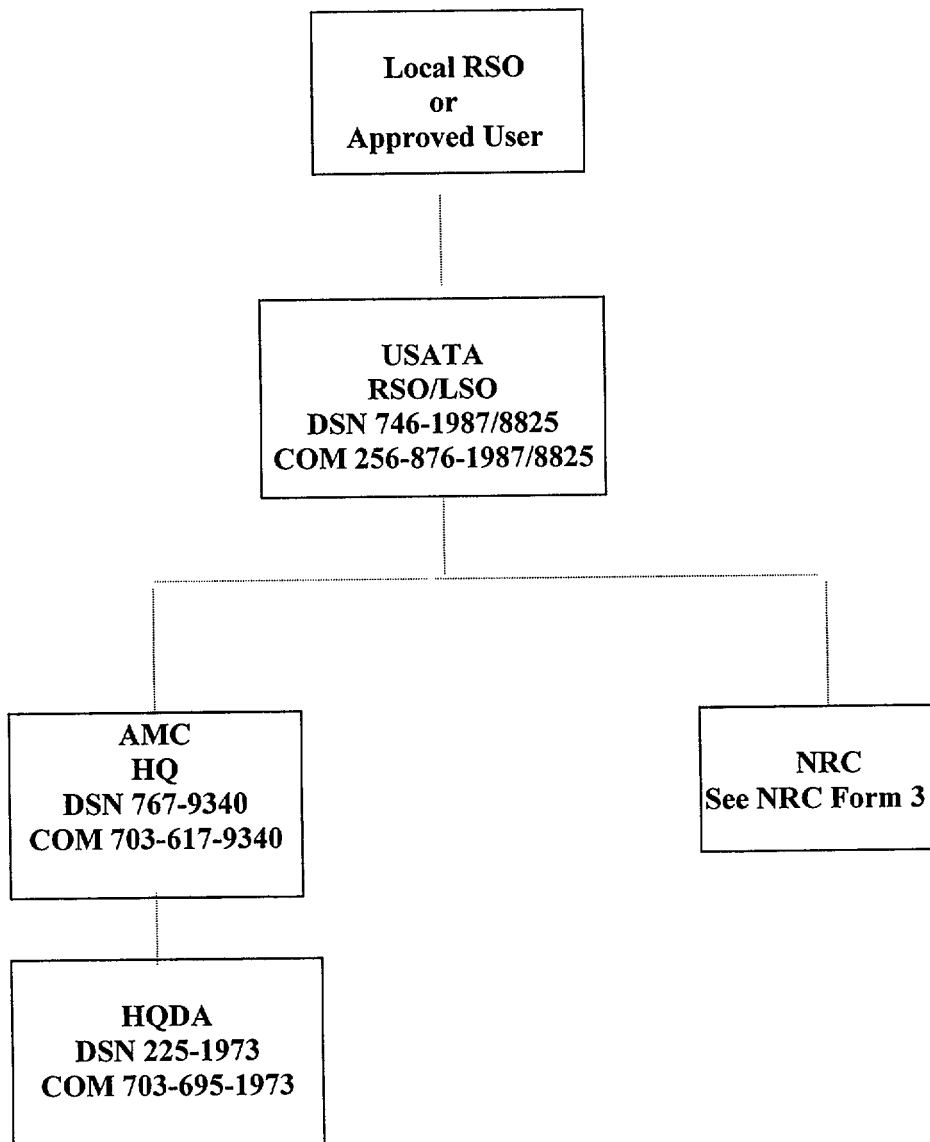
AMCOMR 11-2 (APPENDIX A CONTINUED)

gg. USAEHA TG No. 153, Guidelines for Controlling Potential Health Hazards from Radio Frequency Radiation.

hh. OTSG Policy Letter 86-01.0, Surveillance of Laser and Microwave/Radio Frequency Workers.

APPENDIX B

RADIATION INCIDENT NOTIFICATION TREE
(MINIMUM KEY CONTACTS)



**APPENDIX C
INTERNAL RADIATION SAFETY AUDIT WORKSHEET**

Facility _____ e.g.... APSL Redstone

Date of Audit _____

Location(s) Building No _____

Room No _____

1. Program Management

- a. Local management aware of program requirements. Y N
- b. RSO/Alt RSO appointed on orders. Y N
- c. Appointment orders cover scope of radiation safety duties. Y N
- d. SOP is current and covers scope of program. Y N
- e. Date of SOP _____ Date of last review _____
- f. Program changes reflected in corrections/amendments to SOP. Y N
- g. Authorized User(s):

h. Describe scope of lab use (Nuclide, form, frequency, purpose, etc.):

AMCOMR 11-2 (APPENDIX C CONTINUED)

2. Facilities

- a. Building and labs are approved by the USATA RSO? Y N
- b. Shielding and interlocks are functional? Y N
- c. Controls are in place to prevent unauthorized access? Y N

3. Training

- a. Frequency: _____ Conducted By: _____
- b. User training conducted for each source. Y N
- Does each radiation worker understand radiation safety practices? Y N

4. Surveys and Leak Tests

- a. Types of surveys performed. Circle appropriate survey (daily, weekly, monthly, etc.).
- b. Are both area and contamination surveys done? Y N
- c. Is instrumentation properly calibrated and documented? Y N N/A
- d. Is efficiency of counting system determined? Y N N/A
- e. Is the hood airflow adequate and checked as required? Y N N/A
- f. Are records maintained: trigger levels established, area diagram, instrument used, individual performing survey, results in proper units, decontamination performed as necessary, etc? Y N
- g. Are leak tests performed as required (alpha sources quarterly, beta/gamma sources semiannually)? Y N

Remarks:

AMCOMR 11-2 (APPENDIX C CONTINUED)

5. Receipt and Transfer

- a. Are incoming packages properly surveyed? Y N
- b. Is material only transferred to authorized recipients? Y N
- c. Is there a radioactive material movement form for each shipment and receipt, unless the package is an exempted shipment? Y N
- d. Are shipment records maintained? Y N

Remarks:

6. Personnel Dosimetry

- a. Is appropriate dosimetry assigned and worn? Y N N/A
- b. Are results available to lab personnel? Y N
- c. Are quarterly results reviewed and provided to radiation workers? Y N
- d. Are results within regulatory and ALARA limits? Y N
- e. Are bioassays performed? Y N N/A
- f. Are bioassay results included on NRC form 5? Y N N/A

Remarks:

7. Radioactive Waste Management

- a. Radioactive waste materials are generated. Y N
- b. Are procedures followed? Y N
- c. Proper storage (area, containers, labeling, etc.)? Y N

AMCOMR 11-2 (APPENDIX C CONTINUED)

- d. Do you generate liquid waste disposal? Y N
- e. Do you discharge liquid waste in the sanitary sewer? Y N
- f. Do you compact waste? Y N
- g. Are records maintained for all disposals? Y N

Remarks:

8. Material Accountability

- a. Have you conducted a semiannual inventory? Y N
- b. Have you submitted a copy of your inventory to the USATA RSO? Y N
- c. Is your inventory within your authorized quantity? Y N
- d. Do you maintain copies of your records? Y N

Remarks:

9. Storage and use of Radioactive Material (RAM)

- a. Are adequate methods in place to prevent unauthorized access? Y N
- b. Are all keys to rooms and sources under the control of the RSO? Y N
- c. Condition of areas acceptable. Y N

AMCOMR 11-2 (APPENDIX C CONTINUED)

- d. Are procedures in place for handling radioactive material in other than sealed sources? Y N N/A
 - 1) Personnel wear disposable gloves and protective clothing while handling material. Y N
 - 2) Hands monitored after procedures or before leaving. Y N
- e. Eating, drinking, or smoking prohibited in use/storage areas. Y N
- f. Food, drink, or personal items not stored in use/storage areas. Y N
- g. Use of shielding/distance while using/storing material. Y N
- h. RAM is under surveillance and control when not in storage in an unrestricted area. Y N

Remarks:

10. Posting and labeling

- a. NRC-3 "Notice to Workers" Y N
- b. Parts 19, 20, 21, section 206 of Energy Reorganization Act, procedures for part 21, and license documents or a notice indicating where documents can be examined. Y N
- c. Other posting and labeling requirements met. Y N
- d. Do you have copies of all pertinent NRC licenses? Y N

List licenses _____

APPENDIX D

FORMAT FOR LASER OR HIGH INTENSITY OPTICAL SOURCE SOP

This appendix is intended to suggest areas which should be included in unit SOPs. This list is not necessarily complete but will serve as an aid to ensure all requirements for safe laser operations are included in the SOP.

- a. Purpose.
- b. Scope: Laser(s) or high intensity optical sources covered by the SOP.
- c. Responsibilities.
- d. Description of laser(s). Includes information specified in Laser/High Intensity Optical Source inventory.
- e. Description of facilities: ambient light conditions; target area (including buffer zones, beam backstop, enclosures); ventilation; warning signs and lights; interlocks; and associated hazards, such as electrical, mechanical, hydraulic, pneumatic, ionizing radiation, noise, toxic materials, cryogenics, asphyxiants, etc.
- f. Preoperational procedures: personnel control including authorized users and exclusion of unauthorized personnel and interlock description and checkout.
- g. Shutdown procedures.
- h. Maintenance procedures.
- i. Additional information: Required laser eye wear (optical density for specific wavelength), skin protection, safe viewing distance of beam and of diffuse reflection, and first aid procedures.

APPENDIX E

Declaring and Rescinding Pregnancy

Section I. Pregnancy Declaration:

In accordance with NRC's regulations at 10 CFR 20.1208, "Dose to an Embryo/Fetus," I, _____ voluntarily declare that I am pregnant. I believe I became pregnant in (the estimated month and year of conception) _____.

I have been informed of the potential risks of radiation exposure to the unborn, exposure limits and controls, and the USATA policy on radiation exposure to the unborn. I have been given the opportunity to ask questions concerning this information. Understanding these risks and the impact on my employment, I voluntarily declare my pregnancy.

I understand that my exposure limits have been reduced to 50 mrem per month and 500 mrem for the pregnancy period. If my declaration has occurred after 450 mrem, my limit for the remainder of the pregnancy period is 50 mrem.

Declared Pregnant Woman Signature

Date

Briefing Provided By: _____
Radiation Safety Officer

Date

Section II. Rescinding Pregnancy Declaration

I, _____, declare that I no longer wish to be considered a declared pregnant woman.

Formerly Declared Pregnant Woman Signature

Date

GLOSSARY

Except as indicated, definitions of technical terms in Glossary; Title 10, parts 19 and 20, Code of Federal Regulations; Title 21, Food and Drugs, Chapter 1, Subchapter J, Radiological Health, Part 1040; Performance Standards for Light-Emitting Products (Federal Standards), Technical Bulletin Medical (TB MED) 524, TB MED 523, and USAEHA Technical Guide No. 153 will be used in the interpretation of this directive.

ALARA. As Low As Reasonably Achievable.

Ionizing Radiation (IR). Any electromagnetic or particulate radiation capable of producing ions, directly or indirectly, in its passage through matter. Ionizing radiation commonly refers to alpha, beta, and neutron particles and electromagnetic radiation in the gamma and X-ray band.

Primary Organizational Element. An organizational element, that reports directly to the USATA Director/Deputy Director (i.e., Region Europe, Region Pacific, and the 95th Maintenance Company).

TMDE Support Center (TSC). Any USATA organizational element involved in the use, handling, storage, transportation, and/or disposal of radioactive materials and/or ionizing and laser radiation-producing devices.

Radiation Safety Officer (RSO). An individual appointed by the Director, USATA, to manage all features of the USATA secondary reference/transfer (S/T) level worldwide radiation safety program. The RSO shall provide assistance and guidance on health physics and ionizing/nonionizing radiation safety issues below the Army Primary Standards Laboratory level. Also performs the duties of USATA Laser Safety Officer.

Local Radiation Protection Officer (RSO). The RSO and alternate(s) are technically qualified by virtue of education, training and experience commensurate with the type and hazard of the radiation source(s) for which he or she is responsible. The RSO and alternate(s) authorized to possess USATA NRC licensed material will have training equivalent to requirements established in the conditions of the NRC license.

Radiation Worker (RW). An individual who has been approved by the RSO to utilize the RADIAC calibrators located at the individual's unit. A radiation worker shall only perform calibrations under the supervision of the approved RSO.

RADIAC. Radiation, detection, indication, and computation.

LASER. Light amplification by stimulated emission of radiation.

AMCOMR 11-2 (GLOSSARY CONTINUED)

Laser System (LS). An assembly of electrical, mechanical, and optical components that include one or more lasers. This definition includes weapon systems for which there are individual development or acquisition efforts by separate developers to produce component laser devices. For example, a tank equipped with a laser range finder is a "laser system."

Exempt Laser System (ELS). A laser system that has been given an exemption from the Federal standard by an agency of the Department of Defense whose use and disposal are strictly controlled. See AR 385-9.

Laser Safety Officer (LSO). An individual designated by the major subordinate commander/director/chief and approved by the USATA RSO; who is qualified by virtue of education and/or experience to make informed judgments regarding safety control measures needed for laser operations. An LSO will be appointed when a facility possesses a Class 3 or Class 4 laser or a Class 1 enclosed laser or laser system. The LSO can be the RSO if so designated in writing.

Nominal Ocular Hazard Distance (NOHD). The NOHD for direct intrabeam viewing is the minimum distance beyond which an unprotected individual may stand and view the beam and can be exposed repeatedly without injury, provided that one does not look at the laser with unfiltered optical devices. When viewing the collimated beam with a telescope or any other optically magnifying device, the hazardous range is greatly increased.

Maximum Permissible Exposure (MPE). The level of laser radiation to which a person may be exposed without hazardous effect or adverse biological changes in the eye or skin.

Accessible Emission Limit (AEL). The maximum accessible emission level permitted within a particular laser class.

$$AEL = MPE \times (\text{area of limiting aperture}).$$

Permissible Exposure Limit (PEL). The maximum level expressed in absorption rate or derived equivalent power density, electric field strength, or magnetic field strength to which an individual may be exposed that will not cause detectable bodily injury according to present medical knowledge.

Specific Absorption Rate (SAR). The time rate at which RFR energy is imparted to an element of biological body mass. It is usually measured in W/kg or normalized to incident power density in W/kg/mW/cm².

Power Density. The amount of power per unit area in an electromagnetic field, usually expressed in mW/cm².

REQUISITION AND INVOICE/SHIPPING DOCUMENT

Form Approved
OMB No. 0704-0246
Expires Oct 31, 1991

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project(0704-0246), Washington, DC 20503.

1. FROM: (Include ZIP Code) Transportation Office Central Receiving - Bldg 8022 Redstone Arsenal, Alabama 35898 M/F: Bldg 5417 (POC) Steve Rogers 256 876-1302	SHEET NO. 1	NO. OF SH 1	5. REQUISITION DATE	6. REQUISITION NUMBER
	7. DATE MATERIAL REQUIRED (YYMMDD)			8. PRIORITY 03
2. TO: (Include ZIP Code) Licensing Assistance Team: Div of Nuclear Materials Safety US Nuclear Regulatory Commission, Region I, 475 Allendale Road King of Prussia, PA 19406-1415 Attn: Becky Junod Ph: (800) 432-1156	9. AUTHORITY OR PURPOSE RSI CALIBRATION			11a. VOUCHER NUMBER DATE (YYMMDD) W31P38 - 6325-X910
	10. SIGNATURE P. Kuykendall 21 Nov 86			
3. SHIP TO - MARK FOR ACCT/UNCL/NS/NWR/NH Fed Ex Overnight	12. DATE SHIPPED (YYMMDD)			b.
	13. MODE OF SHIPMENT			14. BILL OF LADING NUMBER
	15. AIR MOVEMENT DESIGNATOR OR PORT REFERENCE NO.			

4. APPROPRIATIONS SYMBOL AND SUBHEAD	OBJECT CLASS	EXPENDITURE ACCOUNT (From)	EXPENDITURE ACCOUNT (To)	CHARGEABLE ACTIVITY	BUREAU CONTROL ACTIVITY NO.	BUREAU CONTROL NO.	AMOUNT
TAC CODES - AAYD-AIR/GROUND POC: Helen Wisner 6-9915							

ITEM NO	FEDERAL STOCK NUMBER, DESCRIPTION, AND CODING OF MATERIEL AND/OR SERVICES	UNIT OF ISSUE	QUANTITY REQUESTED	SUPPLY ACTION	TYPE CONTAINER	CONTAINER NOS.	UNIT PRICE	TOTAL COST
(a)	NOMENCLATURE (b) MODEL NO. SERIAL NO.	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1	Letter to NRC n/a n/a	ea	1					

16. TRANSPORTATION VIA MATS OR MSTs CHARGEABLE TO						17. SPECIAL HANDLING				
18. RECEIPT/SHIPMENT ISSUED BY	TOTAL CONTAINERS	TYPE CONTAINER	DESCRIPTION	TOTAL WEIGHT	TOTAL CUBE	19. CONTAINERS RECEIVED EXCEPT AS NOTED	DATE (YYMMDD)	BY	SHEET TOTAL	
	CHECKED BY						QUANTITIES RECEIVED EXCEPT AS NOTED	DATE (YYMMDD)	BY	GRAND TOTAL
	PACKED BY						POSTED	DATE (YYMMDD)	BY	20. RECEIVER'S VOUCHER NO
	← TOTAL →									

This is to acknowledge the receipt of your letter/application dated

11/24/2006 and to inform you that the initial processing which includes an administrative review has been performed.

Amendment 01-00126-16 There were no administrative omissions. Your application was assigned to a technical reviewer. Please note that the technical review may identify additional omissions or require additional information.

Please provide to this office within 30 days of your receipt of this card

A copy of your action has been forwarded to our License Fee & Accounts Receivable Branch, who will contact you separately if there is a fee issue involved.

Your action has been assigned **Mail Control Number** 139762.
When calling to inquire about this action, please refer to this control number.
You may call us on (610) 337-5398, or 337-5260.