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Medical Command

**MANAGING RADIOACTIVE MATERIAL ON
VANDENBERG AFB**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction provides guidance, procedures, precautionary measures, and responsibilities for the control of radioactive material (RAM) on Vandenberg Air Force Base (AFB). It sets up approval and coordination procedures and gives direction for proper licensing of radioactive materials. This instruction gives guidance for transporting, handling, storage, possession, and disposal of radioactive materials, excluding disaster control operations. It implements AFI 40-201, *Managing Radioactive Materials in the USAF*; *Air Force*, AFI 48-148, *Ionizing Radiation Protection*; AFI 48-125, *USAF Personnel Dosimetry Program*; AFI 91-110, *Nuclear Safety Review and Launch Approval for Space or Missile Use of Radioactive Material and Nuclear Systems*; Code of Federal Regulation (CFR), Title 10, Energy; Title 40 CFR, *Environmental Protection*; Title 49 CFR, *Transportation, and the Uniform Code of Military Justice (UCMJ)*, Article 92. **Attachment 1** explains glossary and terms used. **Attachment 2** is Maintaining Ionizing Radiation Exposure As Low As Reasonably Achievable (ALARA). This instruction applies to all assigned, attached, tenant units, and contractors who possess, use, or handle sources of RAM within the confines of Vandenberg AFB. The Paperwork Reduction Act of 1974 as amended in 1996 and AFI 33-360, Volume 2, *Forms Management Program*, affects this publication.

SUMMARY OF REVISIONS

The revision updates local policy consistent with recently published AFI 48-148, *Ionizing Radiation Protection*, and AFI 40-201, *Managing Radioactive Materials in the USAF*. A bar (|) indicates a revision from the previous edition.

1. Responsibilities:

- 1.1. Commander, 30th Space Wing (30 SW/CC) or a designated representative:
 - 1.1.1. Establishes a Radiation Safety Committee as required by AFI 91-110.
 - 1.1.2. Has final responsibility for the Vandenberg AFB Radiation Safety program.

- 1.1.3. Appoints a Base Radiation Safety Officer (BRSO) and Safety Engineer to advise on the control of RAM in accordance with AFI 40-201, AFI 91-110 and AFI 48-148. The RSO is usually the Health Physicist or Bioenvironmental Engineer.
 - 1.1.4. Enforces AFI 40-201, AFI 91-110 and AFI 48-148, for non-Air Force organizations, including other Department of Defense (DoD) organizations, Department of Energy (DoE) organizations, DoE contractors, and other contractors who bring or use RAM on Vandenberg AFB. All organizations must have either a proper Nuclear Regulatory Commission (NRC) License, DoE Authority Document, a State License with a Form 241, or a United States Navy Radioactive Material permit.
 - 1.1.5. Ensures ionizing radiation exposure is maintained as low as reasonably achievable (ALARA), (see [Attachment 2](#)).
- 1.2. Commander, 30th Medical Group (30 MDG/CC):
 - 1.2.1. Establishes policies for the control of RAM.
 - 1.2.2. Advises 30 SW and tenant unit commanders on radiological health and safety including health aspects of nuclear disaster control.
 - 1.3. All Other Commanders:
 - 1.3.1. Ensure unit personnel or contractors who receive, possess, distribute, use, transfer, or dispose of permitable or licensable RAM have a United States Air Force (USAF) Permit, DoE Authority Document, NRC License or State License.
 - 1.3.2. Ensure personnel who use RAM meet training requirements outlined in 10 CFR 19, 20, 21, and 35, AFI 40-201 and AFI 48-148.
 - 1.3.3. Follow posting and notification rules in AFI 40-201, AFI 48-148, 10 CFR 19 and 20.
 - 1.3.4. Appoint a Unit Radiation Safety Officer (URSO) in writing annually to the Base Radiation Safety Officer (BRSO) for all organizations who possess RAM or radiation producing devices.
 - 1.4. Base Radiation Safety Officer (BRSO) or designee:
 - 1.4.1. Serves as a member of 30 SW Radiation Safety Committee (RADSAFCOM).
 - 1.4.2. Provides technical assistance to assigned base and tenant units on the radiological health aspects of the use of RAM, radiation producing devices, and radioactive wastes.
 - 1.4.3. Provides technical information and aid to Public Affairs on all incidents, and plans involving RAM.
 - 1.4.4. Advises users on the enforcement of USAF, NRC, and any state requirements.
 - 1.4.5. Serve as a central point of contact for all requests to use RAM or devices on Vandenberg AFB. Reviews and approves or disapproves all requests for the use of RAM on Vandenberg AFB under an existing NRC or State license.
 - 1.4.6. Approve or disapprove RAM use on Vandenberg AFB with respect to licensing, training, health and safety requirements.
 - 1.4.7. Performs monitoring and or radiation surveys for the receipt, shipment, transfer, and use of Air Force owned or operated RAM.

- 1.4.8. Manages the Thermoluminescent Dosimetry (TLD) program IAW AFI 48-125.
 - 1.4.9. Provides initial ALARA training to unit RSOs and reviews unit RSO training plans (if changes from previous). Conducts as low as reasonable achievable (ALARA) training to military and civil service personnel who use RAM.
 - 1.4.10. Investigates the loss and spill of RAM, and all real or suspected overexposures to radiation.
 - 1.4.10.1. In the event of contractor loss or release of RAM, the BRISO will report to the USAF RIC those portions of the incident that pertain to the AF involvement. The BRISO will not conduct investigations for contractors.
 - 1.4.10.2. The BRISO may recommend procedures to the contractor through the contracting officer in regards to RAM handling and accountability to help ensure AF compliance.
 - 1.4.11. Conducts annual audits of all USAF Radioactive Material Permits to ensure compliance with their terms and conditions. Briefs organizational commander on permit status.
 - 1.4.12. Conducts semiannual inventories of all RAM on Vandenberg AFB.
 - 1.4.13. Advises the Fire Department of the radiological health hazards associated with RAM in the event of a fire involving RAM. Annually provides the Fire Department and CE Readiness the locations where RAM is stored and used.
 - 1.4.14. Supports Transportation personnel on storage, shipping and receiving procedures for RAM in accordance with 49 CFR.
 - 1.4.15. Monitors, swipes, and surveys all AF radioactive packages being shipped from or to Vandenberg AFB (including excepted packages as instruments and articles). Levels must be below the limits specified in 49 CFR.
 - 1.4.16. Periodically surveys and monitors radiographic contractor operations being performed on Vandenberg AFB. NOTE: Contractors are responsible for their own personnel and environmental radiation monitoring according to 10, 29, 40 and 49 CFRs. Air Force monitoring of contractor activities is limited to evaluating compliance with this instruction and Air Force policy.
- 1.5. Transportation Officer (30 LRS/CC):
 - 1.5.1. Ensures there is a separate, secure area for the storage of Type A and B packages awaiting shipment.
 - 1.5.2. Requests disposition instructions for the shipment of radioactive waste material per AFI 40-201 and informs the BRISO of the receipt of disposition instructions.
 - 1.5.3. Reports all discrepancies of packaging for shipment to URISO.
 - 1.5.4. Ensures the shipping containers are monitored by the BRISO before shipment of RAM per AFI 40-201 and 49 CFR.
 - 1.5.5. Ensures personnel working in RAM packaging and shipping areas are trained on the requirements of 49 CFR.
 - 1.6. Material Storage/Distribution Flight (30 LRS/LGRDMS):

1.6.1. Ensures there is a separate, secure area for the receipt and storage of Type A and B packages.

1.6.2. Immediately notifies the BRSO upon receipt of RAM to ensure the shipping container is monitored for leakage.

1.6.3. Reports discrepancies in packaging, labeling, etc., of all RAM received per AFI 40-201, to the BRSO.

1.6.4. Ensures personnel working in RAM receiving or storage areas are trained in the safe handling and storage of RAM by the BRSO.

1.7. Unit Radiation Safety Officer (URSO):

1.7.1. Act as central point of contact for their respective organizations or agencies who use RAM.

1.7.2. Inform the BRSO of any new RAM obtained. Provide 30 SW Safety with sufficient data to satisfy the requirements of Eastern Western Range (EWR) 127-1, *Range Safety Requirements*, and AFI 91-110/30 SW1, *Nuclear Safety Review and Launch Approval for Space or Missile Use of Radioactive Material and Nuclear Systems*, regarding RAM, and provide an oral presentation to the 30 SW Radiation Safety Committee (RADSAFCOM).

1.7.3. Identify all restrictive radiation areas per 10 CFR 20.1902 and AFI 40-201. Entry into these areas must be controlled.

1.7.4. Immediately notify the BRSO and 30 SW/SES of any incident involving a potential exposure to radiation. Notify the BRSO and 30 SW/SES of any intent to move RAM to or from Vandenberg AFB or the movement of RAM within or off of Vandenberg AFB.

1.7.5. Ensure the required equipment and proper radiation monitoring devices (Thermoluminescent Dosimetry (TLD), pocket dosimeters) are utilized by personnel working in radiation areas.

1.7.6. Maintain an inventory and accountability for all RAM within your possession at all times.

1.7.7. Provide training on the safe use, storage, handling, and disposal of RAM for all Flight personnel working with RAM

1.7.8. Inform the BRSO and 30 SW/SES of any changes in operating procedures for RAM.

1.7.9. Provide the BRSO with the most recent leak test results and transfer documents when a new sealed RAM source is obtained. Some sealed sources are exempt from periodic leak tests; however, a leak test should be performed per 49 CFR whenever the RAM is shipped to ensure there is no removable contamination on the package prior to shipment.

1.7.10. Compile and maintain section specific operating instructions for using RAM.

1.7.11. Ensure work procedures are in compliance with ALARA principles.

1.7.12. Report annual training, use, and inventory to organizational commander and BRSO.

1.8. Users of Radioactive Material:

1.8.1. Ensure written approval for the use, storage, and handling of RAM or devices is obtained from the BRSO and 30 SW/SES. Follow all safety precautions to ensure exposures to all radiation follows ALARA policy.

1.8.2. Inform the URSO and 30 SW/SES of any new RAM or devices obtained.

1.8.3. Ensure qualified individuals perform a visual inspection of the RAM shipping container upon arrival. If the shipping container has been damaged, notify USRO and BRSO immediately for a radiation survey.

1.8.4. Ensure all restrictive radiation areas are identified per 10 CFR 20.1902 and AFI 40-201. Entry into these areas must be controlled.

1.8.5. Notify the URSO of any incident involving a potential exposure to personnel.

1.8.6. Notify the URSO, BRSO, and 30 SW/SES of any intent to move RAM to or from Vandenberg AFB or the movement of RAM within Vandenberg AFB.

1.8.7. Utilize the required equipment and proper radiation monitoring devices (TLD's, pocket dosimeters) when performing work in radiation areas.

1.8.8. Maintain inventory control and accountability at all times for all RAM. Provide a copy to the URSO upon request.

1.8.9. Complete the required training on the safe use, storage, handling, and disposal of RAM. Ensure documentation of training in AF Form 55 or equivalent.

1.8.10. Inform the URSO of any changes in personnel working in radiation areas, or changes in operating procedures.

1.8.11. Ensure all new sealed sources obtained are accompanied with the most recent leak test and a transfer document upon arrival at Vandenberg AFB. These documents must be given to the BRSO.

1.8.12. Review section specific operating instructions and maintain exposures ALARA.

1.8.13. Ensure procedures are approved by 30 SW/SE prior to handling and processing of RAM.

1.8.14. Provide 30 SW Safety with sufficient data to satisfy the requirements of EWR 127-1, AFI 91-110 regarding RAM, and provide an oral presentation to the 30 SW Radiation Safety Committee (RADSAFCOM).

1.9. 30 SW Safety's Responsibilities:

1.9.1. 30 SW Safety provides assistance to the Base Wing Commander in the execution of the Radiation Safety Committee's (RADSAFCOM) duties as described in 30 SWI 91-110.

1.9.2. 30 SW Safety will review applications to bring radioactive material onto the Base. The amount of radioactive material (RAM) will determine the requirements the Range Users must satisfy for access to the Base.

1.9.3. 30 SW Safety will review all procedures and operational plans for compliance with the requirements and recommend approval or disapproval.

1.9.4. 30 SW Safety will assist the Range User with understanding and satisfying the requirements for bringing RAM onto the Base.

2. Licensing and Approvals:

2.1. A USAF Radioactive Material Permit, DoE Authority Document, NRC license or a State Radioactive license is required to possess licensable or permitable quantities of radioactive material. In cer-

tain cases, a USAF permit may be required for use of radioactive material on Vandenberg AFB, which may be exempt from inclusions in a specific license.

2.2. A NRC License or State Radioactive License with a Form 241, is required for most non-military uses of radioactive material on Vandenberg AFB. Reciprocity Statement Exceptions include the Department of Energy and its prime contractors.

2.3. To obtain approval to use a RAM on Vandenberg AFB the following procedure must be followed:

2.3.1. Contact the BRSO and 30 SW/SES regarding the proposed use, the RAM involved, and the requirements which are being supported. The BRSO will inform the user of any new or special requirements and any required submittal not detailed in this section.

2.3.2. Submit to the BRSO and 30 SW/SES a copy of the current NRC or State License with a Form 241, **USAF Radioactive Material Permit**, or DoE Authority Document including all amendments and compliance documents at least 10 working days prior to the proposed start of work. An approved NRC Form 241 allows no more than 180 days in any calendar year. Agreement State licenses whose work will extend beyond 180 days must obtain a license from the NRC.

2.3.3. Submit a report detailing the proposed use of the radioactive material to BRSO and 30 SW/SES. The report should include the types and quantities of radioactive material, locations of use, handling procedures, and radiation safety procedures.

2.3.4. The BRSO and 30 SW/SES will review the documentation and approve or disapprove the usage of the RAM on Vandenberg AFB.

3. USAF Radioactive Material Permit Process:

3.1. All Air Force users of non-exempt quantities of RAM must possess a USAF Radioactive Material Permit. The Air Force maintains a broadscope RAM license (Master Materials License) issued by the NRC which is administered by the Air Force Radioisotope Committee (HQ, AFMOA/SGZR) at Bolling AFB, DC. Permits issued by this committee allow the possession of specified quantities of RAM under the authority of the Air Force Master Materials License. The application for a permit must be submitted by the requester. The application should be prepared by the requester according to AFI 40-201.

3.2. Permittees desiring to renew an expiring Radioactive Material Permit must contact the BRSO at least 60 days prior to the permit expiration date. Renewal will consist of preparing and submitting a complete, stand-alone application to the USAF Radioisotope Committee following the same procedures as an initial application.

3.3. Permittees no longer requiring the use of RAM should transfer or dispose of all permitted material and initiate the termination of their existing permit. Termination or transfer guidelines are outlined in AFI 40-201, paragraph 3.15.

4. Radioactive Material Handling and Storage Guidelines:

4.1. Each receiving or shipping agency must have a separate, marked, and locked enclosure for handling or shipping of RAM packages. This area is needed to ensure personnel not familiar with the proper handling of RAM are not accidentally exposed to RAM. This location must be coordinated with the BRSO.

- 4.2. All RAM which is covered by a license or permit must be accounted for by a RAM transfer receipt, which is separate from any contractual, security, or other receipt documents.
- 4.3. When RAM is received at, or is to be shipped from Vandenberg AFB, the receiving or shipping URSO must contact the BRSO.
- 4.4. If an industrial radiological monitor, is not available to monitor the receiving or shipping containers, the BRSO will monitor the container. If the receiving or shipping agency is a contractor, the contractor must perform all labeling, packaging, and monitoring requirements outlined in 10 CFR and 49 CFR.
- 4.5. Sealed sources must have the most recent leak test results accompany the package. Some sealed sources are exempt from periodic monitoring per 10 CFR. If the leak test is not required, removable contamination swipe results IAW 49 CFR 173.443 must accompany the package. If the leak test is not available, the BRSO or representative must perform the leak test before shipment or monitors the source prior to distribution to the URSO. Contractors must perform their own leak test.
- 4.6. Once the package has been monitored and cleared by the BRSO, the URSO must be contacted and have the package transported to the storage location. If the URSO cannot be contacted, the RAM must be stored in a secure area until the URSO accepts receipt. Only authorized personnel will open or package containers of RAM.
- 4.7. If the RAM is to be transported from Vandenberg AFB, prepare for shipment and packaging per applicable NRC and DOT regulations (49 CFR). Contact BRSO for assistance and shipping surveys.
- 4.8. All RAM must be kept in a RAM storage vault or a locked enclosure separate from other items to ensure personnel not familiar with RAM are not accidentally exposed to radiation. Proper storage techniques and labeling requirements are outlined in 10 CFR Part 19, 20, and 21.
- 4.9. The BRSO must monitor restricted radioactive storage areas quarterly.
- 4.10. A radioactive storage area no longer being used must be monitored and surveyed by the BRSO. Written approval must be received by the BRSO before it may be used for other purposes.

5. Radioactive Material Movement:

- 5.1. RAM movement must be controlled to prevent unauthorized persons from moving radioactive material or movement of RAM to locations without adequate handling or storage facilities.
- 5.2. URSOs or users of RAM must notify the BRSO, and the Fire Dispatcher 24 hours before RAM arrives at Vandenberg AFB, before movement of RAM from location to location, and before departure from Vandenberg AFB. The following information must be provided:
 - 5.2.1. Name of company or organization holding the RAM license or permit.
 - 5.2.2. Name of person making the notification.
 - 5.2.3. Name and mass number of radioisotope.
 - 5.2.4. Radioisotope activity in millicuries.
 - 5.2.5. Specific location by building and room number from where the RAM is being transferred and the location to where the RAM is going.
 - 5.2.6. Date and time of movement.

5.2.7. Name and phone number of the RAM URSO.

5.3. Move RAM only in appropriately shielded and closed containers per 49 CFR for Type A and B packages. Containers in transit must bear the appropriate radiation symbol and tag showing necessary information for safety, including the material's physical and chemical state, the activity in millicuries, and the dose rate on the outer surface of the container.

6. Radioactive Material Disposition:

6.1. Disposition of RAM may only be carried out by transfer to another licensed agency or to a licensed disposal contractor.

6.2. To transfer RAM to another license, the URSO must give written notification to the BRSO and 30 SW/SES of the final planned disposition of RAM transferred. Notification must include the radioisotope, activity, quantity and name of company receiving the RAM. The BRSO and 30 SW/SES may also need a copy of the current license transferring the RAM.

6.3. Final disposition of launched RAM includes, but is not limited to, written notification the RAM was placed into orbit, the RAM was assumed to have burned up upon re-entry, or the RAM impacted deep water and is not retrievable. 30 SW/SES and RADSAFCOM must be notified within 24 hours.

6.4. All disposal actions will comply with the procedures outlined in AFI 40-201, 10 CFR, other applicable regulations, and accepted health physics practices.

6.5. Land burial of RAM is not permitted on Vandenberg AFB without specific approval of the BRSO and the USAF Radioisotope Committee, for permitted or licensed material.

6.6. Specific disposal procedures for Air Force owned RAM are specified in AFI 40-201, paragraph 3.14.

6.7. The URSO is responsible for proper disposal of RAM.

7. Emergency Procedures:

7.1. A radiological emergency is defined as any unplanned or unexpected event which causes the release, escape, or spill of RAM that may result in the contamination of personnel, facilities, or environment or a public hazard, actual or perceived.

7.2. Notify the appropriate emergency agency (911) only if a fire, explosion or injury involving RAM has occurred.

7.3. Notify the project or area supervisor, RADSAFCOM, 30 SW/SES and BRSO for other emergencies immediately.

7.4. If possible, shut down all operations which could be hazardous.

7.5. Evacuate personnel from the emergency area to a minimum radiation exposure area. This area must be pre-designated.

7.6. Account for all personnel from the emergency area. Do not allow personnel to leave the assembly area until cleared by the BRSO.

7.7. Personnel must give a full description on what happened, including circumstances, amount and type of isotope, number of personnel exposed, where the incident occurred, and an estimate of the extent of contamination to BRSO and 30 SW/SES.

7.8. Within 20 working days from the date of the incident, the BRSO and 30 SW/SES must receive a complete written report from the URSO with a detailed description of the incident, a chronological description of how the incident was handled, and preventive measures taken to ensure the incident will not be repeated. A copy of the report filed with the NRC and RIC is adequate to meet this requirement.

7.9. A copy of any correspondence between a regulatory agency and the using agency regarding RAM is to be sent to the BRSO and 30 SW/SES.

8. Industrial Radiography:

8.1. This guidance applies to both fixed and temporary radiographic operations performed on Vandenberg AFB.

8.2. Coordination of planned radiographic operations with scheduling agencies, facility supervisor, and BRSO is the responsibility of the radiographic contractor and the organization requesting the service. All operations must be approved by the BRSO and 30 SW/SES prior to starting.

8.3. Radiographic devices must be properly licensed by the NRC or Agreement State. All radiographic operations must meet the requirements outlined in 10 CFR part 34 and 21 CFR 1020.30.

8.4. The radiographic contractor and requesting organization must inform the BRSO and 30 SW/SES of planned radiographic operations no less than five days before planned operations, with additional notification upon arrival on Vandenberg AFB.

8.5. If the proposed operation is canceled, postponed, or the time is changed for any reason before starting the operation, the radiographer must notify the BRSO and 30 SW/SES of such changes.

8.6. If any RAM or device is improperly or illegally transported onto Vandenberg AFB, such items may be impounded or removed and appropriate agencies notified.

8.7. The licensed radiographer and at least one other individual must be present during radiographic operations.

8.8. At least two calibrated radiation survey meters must be used for radiographic operations.

8.9. At all times during radiographic operations, each individual must wear a direct reading pocket dosimeter, an alarm rate meter, and either a film badge or a TLD.

8.10. Radiation-controlled areas must be properly posted with proper radiation hazard warning signs. Radiation hazard warning signs are described in 10 CFR 19. A controlled area is an area where radiation levels exceed 2 mR/hr. The signs must be placed at the 2 mR/hr boundary in sufficient numbers to adequately provide warning to personnel approaching from any direction.

8.11. Temporary field or job-site operations should have enough radiographic personnel to adequately monitor controlled areas for possible intrusion by unauthorized personnel.

8.12. Restraining barriers may be used in conjunction with appropriate radiation hazard warning signs to preclude access into the controlled area.

8.13. For night operations, radiation hazard areas must be lighted. Flashing red lights must identify the controlled area.

8.14. The BRSO will periodically monitor industrial radiography operations to ensure compliance with this instruction and 10 CFR 34.

8.15. If an unauthorized individual enters the controlled area the radiographer will:

8.15.1. Secure the RAM (put source into storage container, shut down machine).

8.15.2. Escort the individual out of controlled area.

8.15.3. Obtain the name, organization where individual works, and the supervisor's phone number.

8.15.4. Notify the BRISO and 30 SW/SES.

8.15.5. Record the time, date, length of time the individual was in the area, approximate maximum exposure level the individual was subjected to, and any other important information.

8.16. In the event of a radiological emergency, which is defined as any unplanned or unexpected event, which causes the release, escape, or spill of RAM, that may result in the contamination of personnel, facilities, environment or a public hazard, actual or perceived, the radiographer will secure the area and notify the BRISO and 30 SW/SES.

9. Exemptions: The following RAM and conditions of exposure are exempt from the radiological controls of this regulation:

9.1. Natural RAM exempted by the BRISO or the 30 SW (RADSAFCOM) in conjunction with the BRISO, on a case-by-case basis.

9.2. By-product, source, and special nuclear material in quantities or concentrations not greater than those specified as exempt in applicable NRC regulations and exempted from USAF permit requirements.

9.3. This does not include combinations of materials which will provide exposure to personnel above the limits established by the NRC and AFI 48-125, USAF Personnel Dosimetry Program.

CHARLES W. CAMPBELL, JR., Col, USAF, MC, FS
Commander, 30th Medical Group

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 10-2501, Full Spectrum Threat Response (FSTR) Planning and Operations

AFI 40-201, Managing Radioactive Materials in the USAF

AFI 40-402, Protection of Human Subjects in Biomedical and Behavioral Research

AFI 48-125, USAF Personnel Dosimetry Program

AFI 48-148, Ionizing Radiation Protection

AFI 91-110 and AFI 91-110/30 SW 1, Nuclear Safety Review and Launch Approval for Space or Missile Use of Radioactive Material and Nuclear Systems

AFI 91-204, Safety Investigations and Reports

AFI 91-301, AF Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program

Uniform Code of Military Justice, Article 92

CFR, Title 10, Energy

CFR, Title 21, Food and Drugs

CFR, Title 40, Environmental Protection

CFR, Title 49, Transportation

Abbreviations and Acronyms

AF—Air Force

AFI—Air Force Instruction

ALARA—As Low As Reasonably Achievable

BRSO—Base Radiation Safety Officer

CFR—Code of Federal Regulations

DoE—Department of Energy

DoD—Department of Defense

JTA—Joint Test Assembly

MDG—Medical Group

RADSAFCOM—Radiation Safety Committee

RAM—Radioactive Materials

TLD—Thermoluminescent Dosimetry

UCMJ—Uniform Code of Military Justice

USNRC—United States Nuclear Regulatory Commission

URSO—Unit Radiation Safety Officer

USAF—United States Air Force

Terms

- | **Controlled Area**—An area where the ionizing radiation levels exceed 2 mR/hr.
- Radiological Monitor**—Person who is trained by the BRSO responsible for monitoring suspected or known RAM and areas where RAM is stored or used.
- Restricted Storage Area**—RAM which exceed intensities in excess of 2 mR/hr at 1 meter from the container. It is also an electron tube storage area with greater than 100 tubes.

Attachment 2

MAINTAINING IONIZING RADIATION EXPOSURE AS LOW AS REASONABLY ACHIEVABLE (ALARA)

A2.1. The 30 SW, Vandenberg AFB, is committed to maintaining occupational exposures to ionizing radiation as low as reasonably achievable (ALARA), considering the state of technology and the economics of improvements in relation to benefits to public health and safety (Title 10 Code of Federal Regulations, Part 20, Section 20). In order to implement the ALARA concept, each agency, organization, contractor and individual (hereafter referred to as the using agency) who uses or handles ionizing radiation materials or devices must make a concerted effort to:

A2.1.1. Consider ALARA concepts when reviewing operating procedures, past exposure records, inspections, etc., and in consultations with the respective radiation Safety staff or outside consultants.

A2.1.2. Ensure modifications to operating and maintenance procedures and to equipment and facilities result in reduced ionizing radiation exposure. The using agency must demonstrate to the Base RSO that improvements have been sought, that modifications have been considered, and that these modifications or improvements have been implemented. When improvements have been sought but not implemented, the using agency must submit in writing to the Base RSO the reason for not implementing the modifications.

A2.2. 30 SW Radiation Safety Committee (RADSAFCOM):

A2.2.1. Reviews the qualifications of each unit supported by 30 SW with respect to the types and quantities of materials and uses for which the using agency has applied to ensure that the ALARA concept will be carried out.

A2.2.2. Reviews the using agency's efforts to maintain exposure ALARA when considering a new use of by-product or source material. The user must have procedures to ensure exposures are ALARA and incorporate the use of special protective equipment, if needed.

A2.2.3. Ensures that all 30 SW supported using agencies annually review procedures and modifies those procedures and modifies those procedures as necessary to implement the ALARA concept. This must be coordinated with the Base RSO.

A2.3. Base RSO:

A2.3.1. Evaluates Vandenberg AFB's overall efforts to maintain exposure ALARA.

A2.3.2. Reviews occupational radiation exposure data in areas where personnel monitoring is conducted to determine whether exposures are ALARA or investigate action must be taken (see **Paragraph 1.4**).

A2.3.3. Investigates deviations from good ALARA practices and determines the cause. When the cause has been identified, recommends measures to keep exposure ALARA.

A2.3.4. Ensures that authorized users, workers, and ancillary personnel exposed to ionizing radiation are instructed in the NRC ALARA philosophy and are informed that the 30 SW is committed to implementing the ALARA concept.

A2.3.5. Authorized Users:

A2.3.5.1. Coordinate with the Base RSO to develop ALARA procedures to working with ionizing radiation producing materials or devices.

A2.3.5.2. Instruct each worker in the ALARA concept and its relationship to working procedures and work conditions.

A2.3.5.3. Review work practices and procedures to ensure all exposures are ALARA.